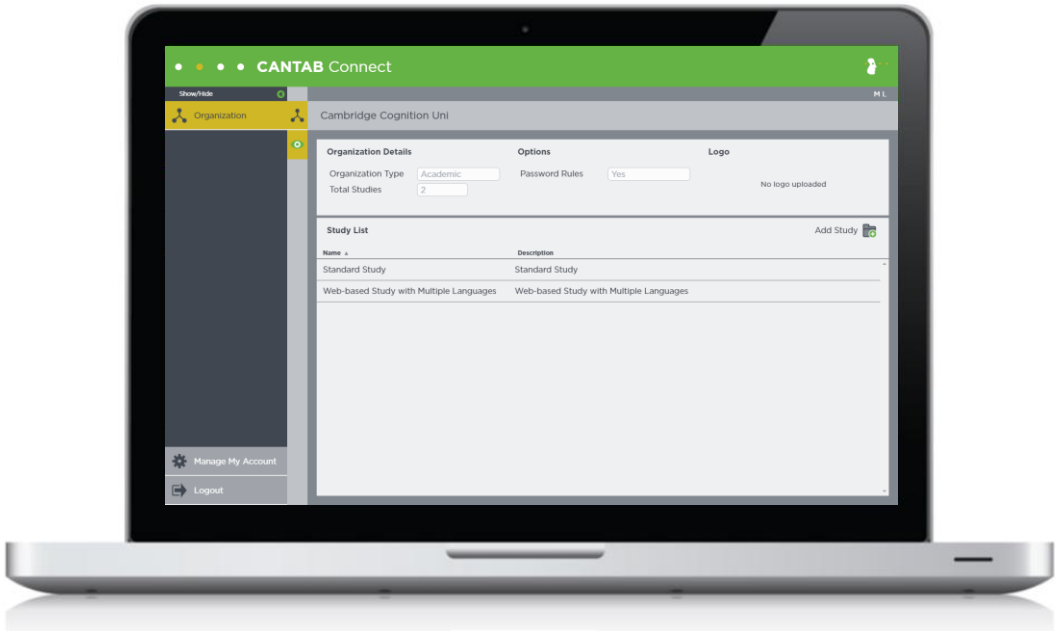
CAMBRIDGE COGNITION

CANTAB Connect Research: Admin Application User Guide



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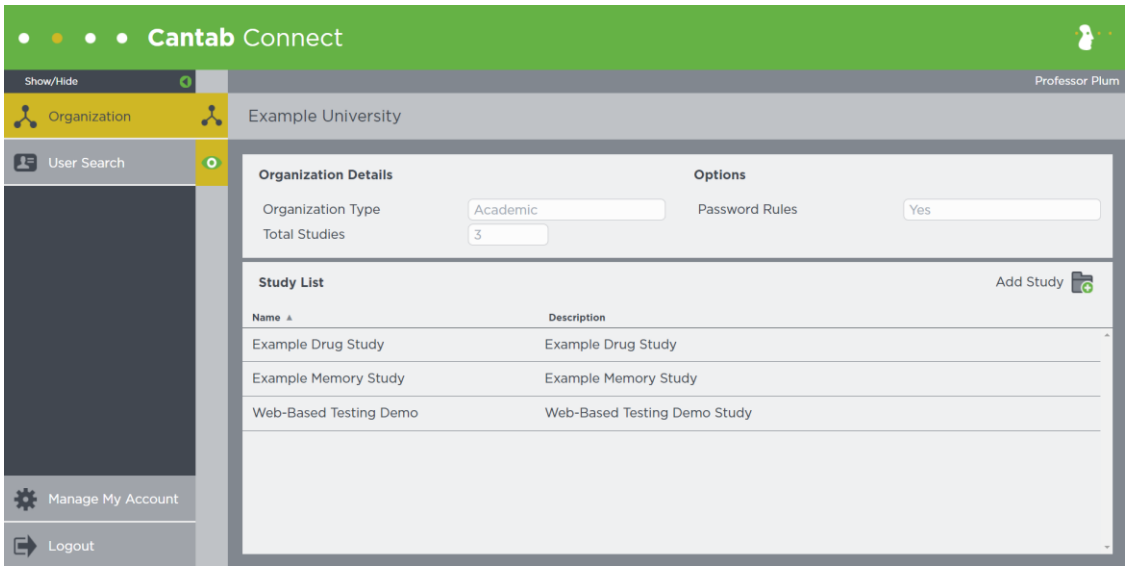
About this guide

This guide explains how to use CANTAB Connect Research from your desktop computer to create studies, manage user accounts and generate data reports.

For information on administering tests and managing subjects, see the *CANTAB Connect Research: Test Administration User Guide*.



Example home page

Glossary

Assessment: A visit (see below) that has been completed once is equivalent to a single assessment. If the same subject completes a visit twice, this will use two assessments. You can determine the number of assessments you require by multiplying the number of subjects by the number of visits in your study design.

Group: Groups relate to the assignment of subjects across multiple research conditions. In some cases, all subjects will belong to one group and complete the same study protocol. In other cases, subjects will be assigned to one group and complete the testing protocol allocated to that group.

Study: A study relates to your investigation of a research aim. It is within your study that you define your full study parameters, including the subject group, subject ID, subject data items, visit schedule and the cognitive tests you will be administering. There is no limit to the number of studies you can create on a CANTAB Connect Research license.

Subject: A subject is any one person being tested using the CANTAB tests. In some cases, a subject may also be known as a participant or patient.

Test: 'Tests' are the CANTAB cognitive tasks that subjects complete during a visit. Each of the tests is designed to assess a specific cognitive domain. Tests may not be duplicated within a single visit. Further information on all available tests is available in CANTAB Connect Research Test Variants.

User: A user is any one person who will be using the CANTAB Connect Research software to configure studies, manager user accounts, administer the CANTAB tests or to generate data reports. Users can be created, and permissions managed, within the Admin application. Further information is available in Managing user accounts.

Visit: A subject completing a cognitive test or set of cognitive tests at a single time-point is defined as a visit. A study can contain one or more visits and there is no limit to the number of visits that can be added to a study. The same cognitive test may not be completed more than once by a subject in a single visit. The tests that will be administered at each visit are defined in the Admin application.

User roles

CANTAB Connect Research allows you to create different user accounts with different roles and responsibilities.

- **User Creator**: Can create and manage other user accounts. We recommend providing User Creators with access to all studies so that they can assign other user accounts access to any of the studies as needed.
- **Study Creator**: Can create, edit and assign studies.
- **Tester**: Can only collect data for active studies that have been assigned to them. Testers can also record and review audio data for voice tasks.

You can find more information on this in the section on Managing user accounts.

Suggested workflow

We suggest the following workflow:

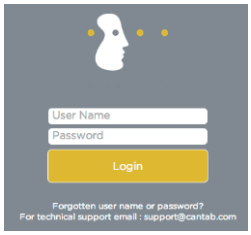
1. Log in and change your password (see Changing your own password when logged in).
2. Create one or more studies (see Creating a new study).
3. Create one or more users and specify their roles (see Creating a new user account).
4. Search for user accounts (see Searching for user accounts).

Your typical workflow will depend on which roles you have been assigned. For example, someone with User Creator and Study Creator roles might want to create further studies and users and assign testers.

Logging in for the first time

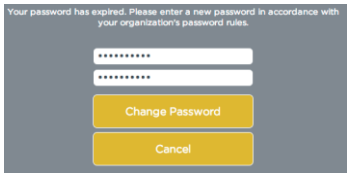
The first time you log into CANTAB Connect Research on your desktop computer, you will be prompted to change your password.

1. Open a Google Chrome web browser and enter the URL for CANTAB Connect Research:
   https://app.cantab.com/admin (for licenses on the USA data servers) or
   https://eu.cantab.com/admin (for licenses on the European data servers). Please refer to your order confirmation email if you are unsure which URL to use.
2. At the login screen, enter the User Name and Password that were supplied to you and click **Login**.



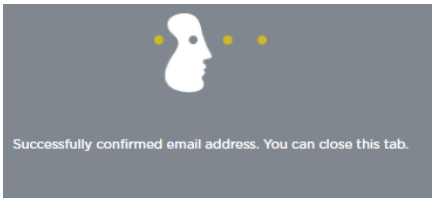
Login screen

3. When prompted to update your password, click **OK**.
4. In the resulting screen, enter a new password twice and click **Change Password**. You must adhere to any password rules that apply for your Organization (for example, at least six characters, including one upper-case letter, one lower-case letter and one numeral).



Change password form

5. Navigate to the 'Manage My Account' tab and click 'Confirm Email'. An automated email will be sent to your email address asking you to verify your email account. Once you have done this, you will be able to use the 'Forgotten My Password' function.



Confirmation of email verification

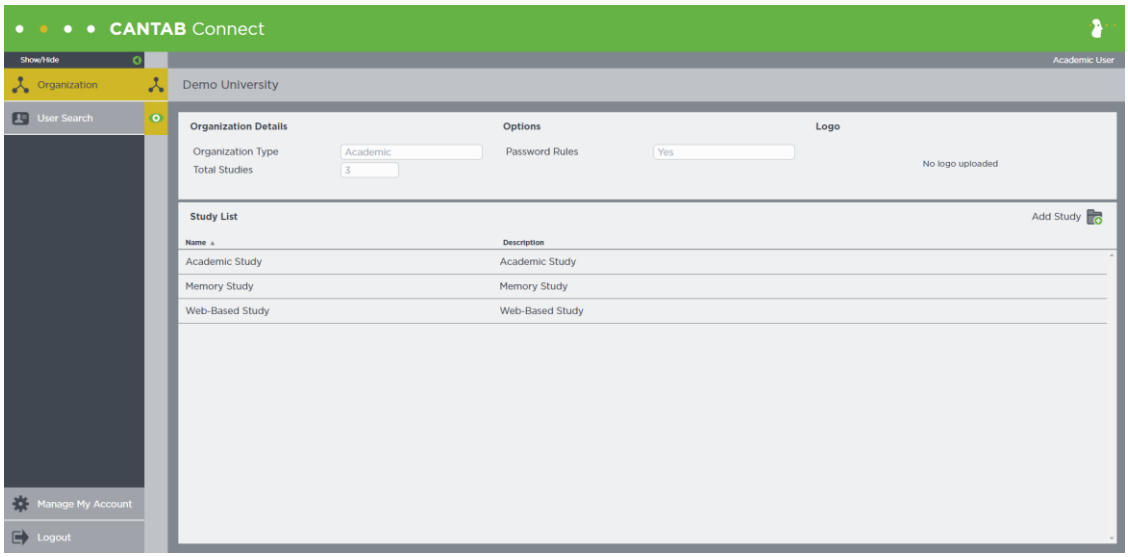
A quick tour of the CANTAB Connect Research Admin application

Before we launch into detailed instructions on creating studies and managing user accounts, here is a brief look at the CANTAB Connect Research Admin application on a desktop computer.

The default Home Page

Each time you log into your CANTAB Connect Research user account the system will display your Default Home Page. This is initially specified when your user account is created, but you can display a different Home page (see Viewing and changing your account details); the list of choices available depends on your user type.

For example, here is a typical Organization Details page:



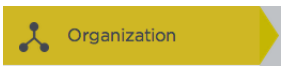
Example home page

Navigating around the Admin interface

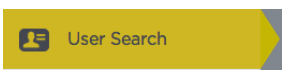
As you perform different tasks with the Admin application on your desktop computer, it's useful to know how to navigate your way around the interface.

Displaying 'top level' pages

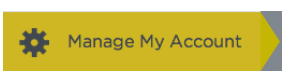
Click on the main tabs on the left of the screen to quickly display one of the 'top-level' pages:



Displays the **Organization** List page



Displays the **User Search** form

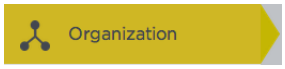


Displays the **Manage Account** form

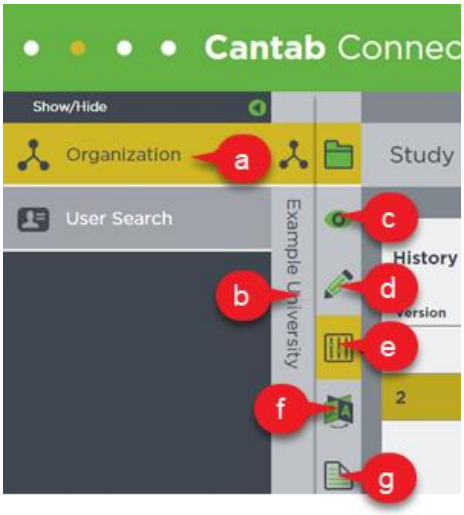
Navigating through the interface

Here's an example of clicking through to a study, then back out to the Organization Details page:

1. Click the **Organization** tab to display the Organization List.



2. Double-click on one of the listed Organizations to display the Organization Details page. This includes the Study List.
3. Double-click on one of the listed studies to display the Study Detail page.
4. At this point, you have the following choices:
    a. Click the Organization bar to the left of the study button bar to display the Details page for the Organization to which this study belongs
    b. Click the side bar displaying the Organization name in order to view the Organization Details, navigate to other studies under the Organization or create a new study
    c. Click  to display the study overview page which displays the name and description of the study and allows you to view existing subjects and add new ones
    d. Click  to display the Study Details Edit form (where you can edit the Name and Description)
    e. Click  to display the Study Design form from which the study configuration is done
    f. If applicable, click  to input translation details for each language you will be delivering your web-based study in
    g. Click  to generate and download reports



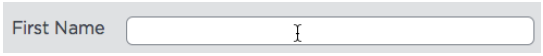
Navigating the user interface

Some common features

This section describes some of the features that appear in multiple parts of the CANTAB Connect Research interface.

Enabling fields in forms

Usually it is obvious when there is a field that requires you to enter some data or choose from a list:

Optional fields are outlined in black	
Required fields are outlined in red; Prompt messages will appear below	

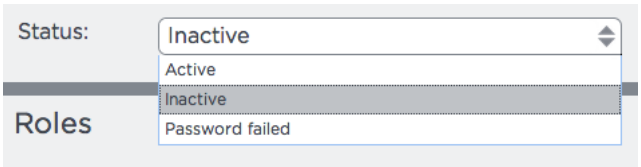
Icons and buttons in forms

When using forms, you will encounter the following icons and buttons:

	Click the up and down arrows to move the position of the current entry within a list (e.g. moving the position of a visit up or down)
	Click this to delete the current entry, then click OK when prompted to confirm the deletion.
	Click this button to copy the current entry
	Click this button to open a supplementary form. For example, data will require validation when you are creating a subject data entry in a study – see Data validation forms.
	Click this button to close a supplementary form.
	Click this button to add an entry to a form. For example, add a subject data line when creating a study.

Drop-down menus (list boxes)

If a field offers a list of options, it will be shown with a double arrow at the right. Click on the double arrow icon to display the drop-down menu and select an option.



Filters

You can filter entries in some parts of the application user interface. For example, if you search for users (see Searching for user accounts) you can filter the results.

If a filter is available, a Filter button will be visible  .

Click on the Filter button and choose a parameter to filter on.

Creating a new study

In order to be able to create a study, you must have previously been assigned the role of **Study Creator**.

Basic workflow

The workflow for creating a new study is as follows (detailed descriptions of each step are given in the following subsections):

1. Create the study template and fill in the **Study Details** (name and description).

   Note: Avoid using special characters (e.g. &) in the Study Name field as these can cause the reports to fail.

2. Enter the study **Version** details.
3. Check the **Version Information** and define your study's **Terminology**.

   Initially, the study status is set to **Development**. During this phase you can save and re-edit the study, adding and amending the following sections of the study form as many times as you require. You can save and close the study, and even log out of your CANTAB Connect Research session; when you log back in again, you can continue to edit the saved study where you left off.

4. Set up web-based testing (if required):
   - Enable web-based testing
   - Personalize web-based testing for your study e.g. add a **Consent Message**, enable or disable self-enrolment, define permitted devices
5. Define the assessments and information that you want to collect during the study:
   - Define **Subject IDs** for the study: when running a study, the tester assigns each subject a unique subject ID; use this to specify the way in which these study IDs are formatted.
   - **Please note: Each Subject ID Label must be different for data reports to download.**
   - Define **Subject Data** for the study: this is information that you want to collect about each subject. For example, you might want to collect date of birth and gender. You can also set Validation criteria for each item of data collected (e.g. to restrict the age range of subjects being tested). Please avoid capturing information such as Participant name within the CANTAB application, to ensure anonymity of participants.
   - **Please note: Language Subject Data label must not be updated, for example translated to another language, as this will cause the reports to fail.**
   - Define **Session Data** for the study: how many visits each subject in a group will need to attend as part of the study, which tests are completed in each visit and which visits will be permitted to run via web-based testing
6. When you are happy that the study is ready to be used by testers, set the study status to **Active** and **Save** the study.

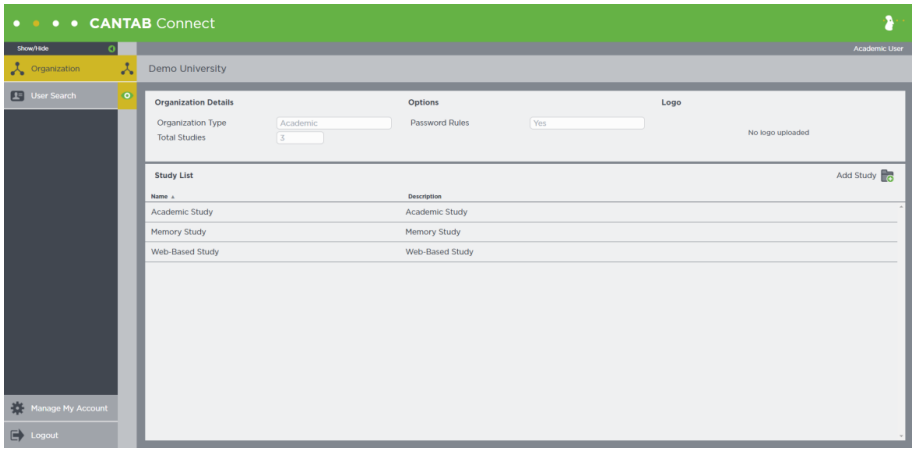
From this point on, the study is locked; you cannot edit the content of this Version of the study, and it is available to be used by either testers logged into CANTAB Connect Research on an iPad or subjects accessing an online study via a desktop computer/laptop or iPad.

- If you want to make changes to an active study, you must create a new **Development** Version of that study (see Creating a development version of an existing study)
- If you have set your web-based study to active and have selected more than one language, you will need to configure the translations for your study before subjects can be tested (see Entering translations for your web-based study (if applicable)).

Creating the study template

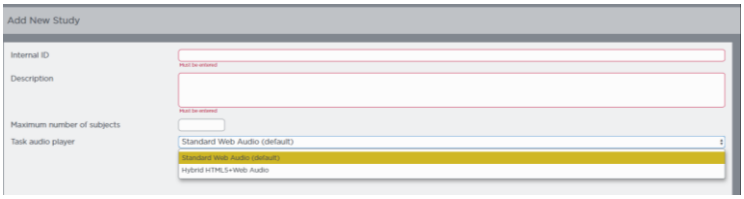
To begin creating a new study:

1. Log in to CANTAB Connect Research on your desktop computer.
2. Click on the **Organization** tab in the top left of the application window. This displays the Organization List panel.
3. Double-click on your Organization name in the Organization List panel. This opens the Organization Details screen that, among other things, lists any existing studies that have been defined.



Organization details screen

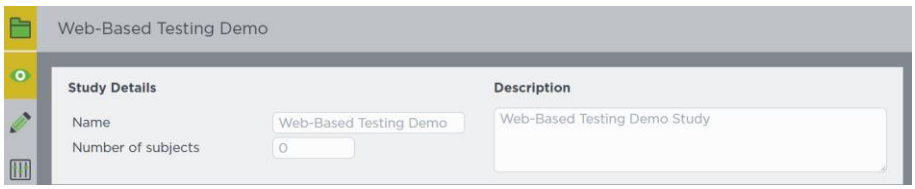
4. Click the **Add Study** button .
5. In the Add New Study panel, enter a name in the **Internal ID** field and **Description** for the study.
6. If you want to limit the number of subjects that can be enrolled in your study, enter a number in the **Maximum number of Subjects** field. You can change this number later if necessary.
7. The **Task audio player** will default to Standard Web Audio (default). The Hybrid HTML5+ Web Audio option can be selected as required.



Study Detail screen

8. Click **Save**.

9. The details will be displayed in the Study Detail panel. The number of subjects enrolled on your study is displayed in the **Number of Subjects** field.

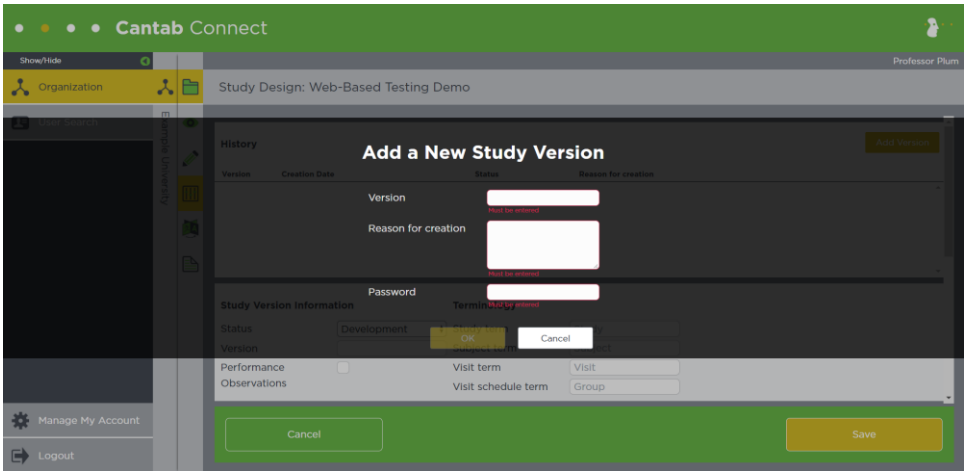


Study Detail

(If at this point you want to change the study details, click on the **Edit Details** button  , change the Name or Description and click **Save**.)

Entering the study version details

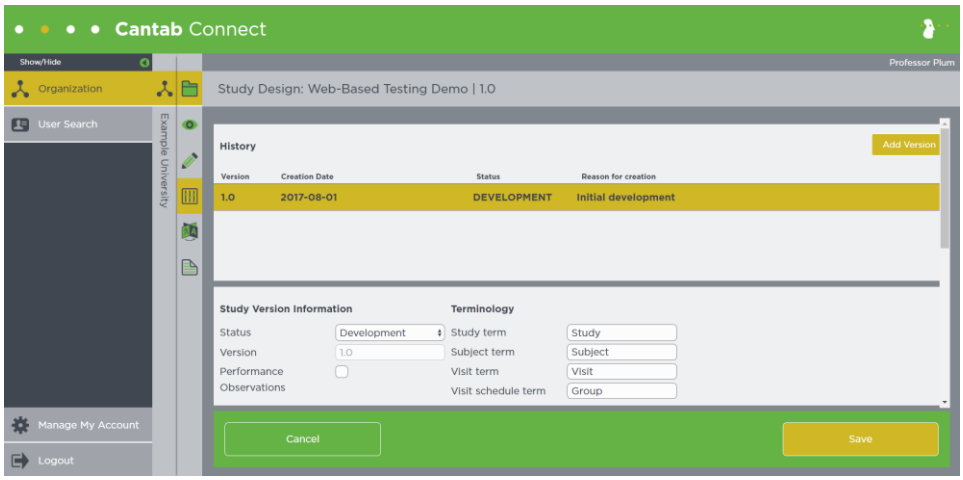
1. Click the **Study Design** button.  .



Entering study settings

2. Enter the following information and click **OK**:
   - **Version**: This can be a number, or a text string; it should be unique for each version of the study that you create
   - **Reason for creation**: Free text field where you can add a description for the new version that you are creating
   - **Password**: Enter your current user password

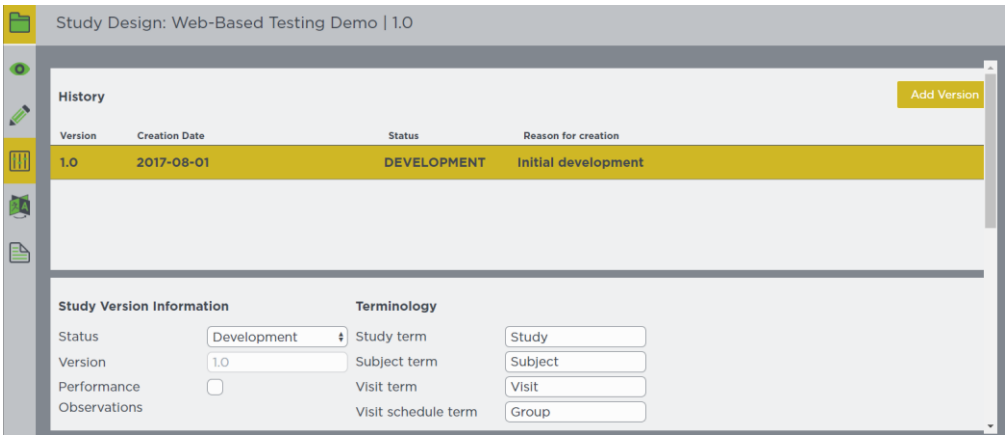
The Study Design screen will be displayed, ready for you to start entering the study details.



Study Design screen

Check Study Version Information and enter terminology

1. Check the Version information listed in the History section.
2. Check the Study Version information (the Status should be set to **Development**).



Study Version information

3. If you want to record comments or classify issues that occurred during a subject testing session, click to enable the **Performance Observations** option.

   For **web-based** sessions, enable Performance Observations if you would like feedback on whether the subject was distracted during the session. The software will ask the subject to report whether they were distracted at any time during the testing session. If the subject answers 'Yes', the performance observation for that visit will be marked as **Distraction**. The software will also detect if the subject left full-screen mode at any point during the testing session. If yes, the tests that were not in full-screen mode will be marked as **Distraction**.

4. Enter the **Terminology** used for this study. These are the terms that will be used to refer to different aspects of the study throughout the software.

   - **Study term**: This can be changed if you do not feel that 'Study' is the most appropriate term. You may prefer 'Project' or 'Research Project', for example. This should be a generic term and not the name of any specific study.

- **Subject term**: Refers to the people taking part in your study; for example, you might want to refer to them as a subject, patient or participant.
- **Visit term**: Refers to the session attended by a subject to take part in the study; for example, you might call this a visit, a session or a time point.
- **Visit schedule term**: A collective term used to refer to all subjects taking part in the study; for example, you might use the term cohort, or group.

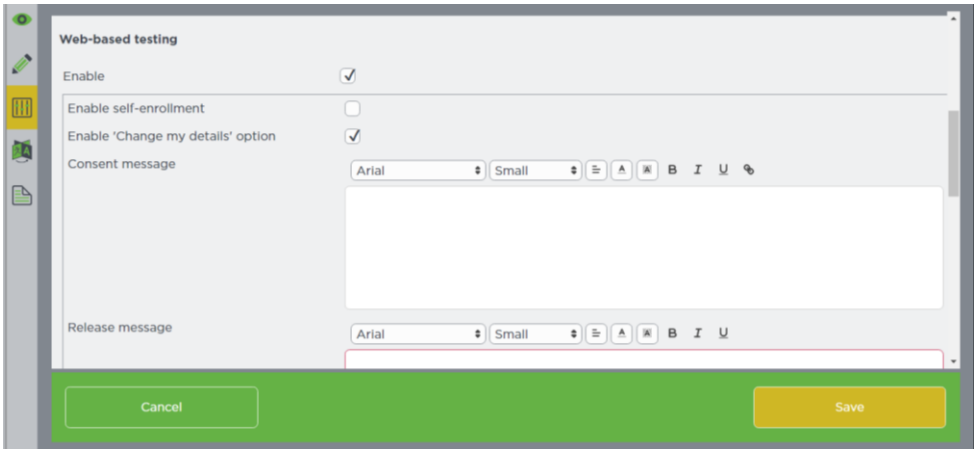
Enabling web-based testing (if applicable)

Web-based testing is an add-on to a standard CANTAB Connect Research license. If your license does not currently include web-based testing and you wish to add this, please contact Cambridge Cognition so we can provide a quote for this add on.

If you have Web-Based testing enabled on your license, you might choose not to use it for every study.

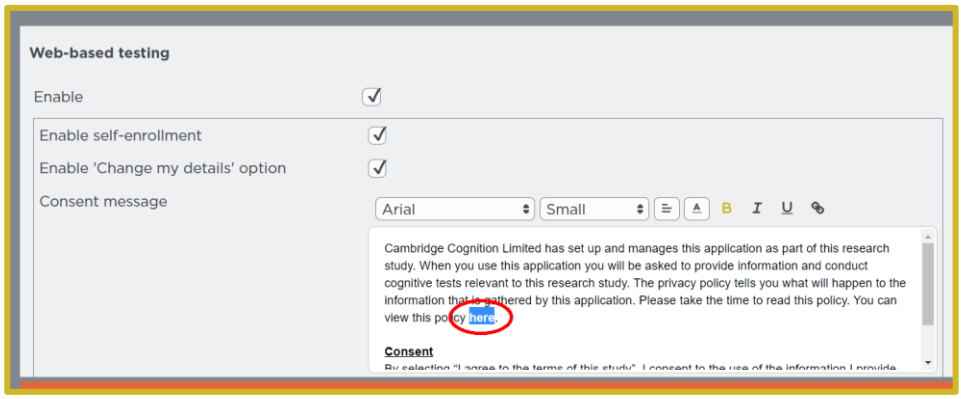
To enable web-based testing:

1. Select **Enable** in the **Web-based testing** section.



Enabling web-based testing and set-up

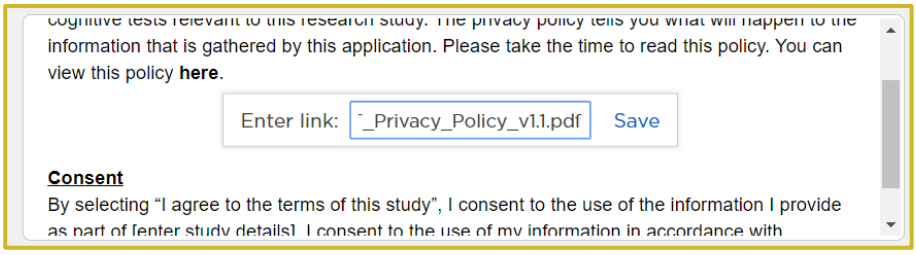
2. If subjects will be self-enrolling on to the study, select **Enable self-enrolment**.
3. If you do not want subjects to be able to edit the **Subject Data Items** that you require them to enter upon enrolment, de-select the **Enable 'Change my details' option**.
4. Enter the **Consent message** to be displayed to subjects before they enroll (please note, this field is mandatory if **Enable self-enrolment** has been selected):
    a) You can add any text, but you **must** at the very least include the text given in Cambridge Cognition Privacy Policy after this section.
    b) Highlight the word '**here**' in the pasted message.



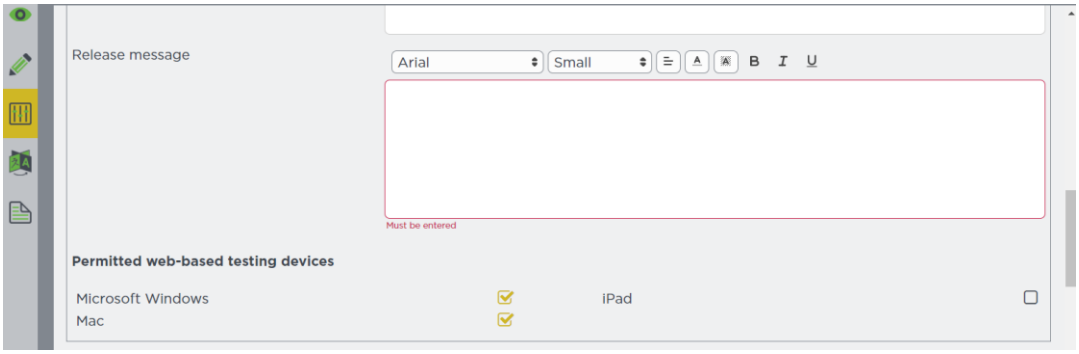
c) Select the hyperlink icon 

d) Enter the Cambridge Cognition web-based testing privacy policy URL: http://download.camcog.com/Documentation/Privacy_Policies/WBT/ACA/ACA_WBT_Privacy_Policy.pdf

e) Click the **Save** button to the right of the **Enter link** field. If you cannot see the Save button, you might need to use the scroll bar that appears at the bottom of the Consent message field.



5. Enter the message you would like to be displayed to subjects at the end of each of their web-based assessments in the **Release Message** field.



Web-based testing set-up

6. Select the **Permitted web-based testing devices** from the list of validated devices (subjects will only be able to complete visits on devices that have been selected here).

Cambridge Cognition Privacy Policy

For any study containing web-based assessments, subjects must have the opportunity to read the **Cambridge Cognition Privacy Policy** prior to study participation. This policy informs the subject about how any personal information collected by the application will be used.

For self-enrolling subjects, a web-link to the **Cambridge Cognition Privacy Policy** can be embedded within the consent message text, providing the subject with the opportunity to read it before consenting to take part in the study.

The following paragraphs must be included in all consent messages:

> Cambridge Cognition Limited has set up and manages this application as part of this research study. When you use this application, you will be asked to provide information and conduct cognitive tests relevant to this research study. The privacy policy tells you what will happen to the information that is gathered by this application. Please take the time to read this policy. You can view this policy **here**.
>
> **Consent**
>
> By selecting "I agree to the terms of this study", I consent to the use of the information I provide as part of [enter study details]. I consent to the use of my information in accordance with Cambridge Cognition's privacy policy.

Privacy Policy Link address

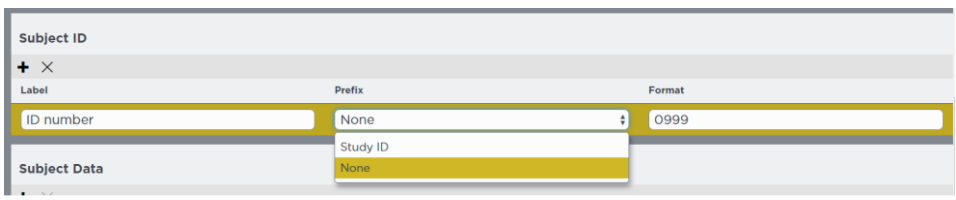
Please hyperlink '**here**' in the above message to the following URL:

http://download.camcog.com/Documentation/Privacy_Policies/WBT/ACA/ACA_WBT_Privacy_Policy.pdf

Defining subject IDs for the study

To continue filling in the Study Design parameters:

1. Click the + icon on the left of the subject IDs section. This adds a line where you define the format of your subject IDs (i.e. how they appear in the visits and reports).
2. If you want to change the default Label provided, click in the **Label** field and enter your chosen label.
3. Set up the format of the unique ID number used to refer to individual subjects:
   - Click in the **Prefix** field to reveal a drop-down menu and select **None** or **Study ID**. Set this to Study ID if you are running lots of different studies. That way, when you review the data, you will always know which study that data came from.



Subject ID

- Click in the **Format** field to specify the format of the subject ID. This forces the tester to enter IDs with a fixed number of characters; See Subject ID formats below for more information.
- **Note #1**: Subject IDs can only contain numeric digits for web-based studies
- **Note #2**: Subject IDs will be automatically assigned to self-enrolling subjects sequentially from 0001 (depending on your chosen ID format). If the study contains a combination of both self-enrolled and pre-enrolled subjects, we recommend assigning pre-enrolled subjects with an ID that will not overlap with the automatically assigned numbers of self-enrolling subjects (e.g. 0500, 0501 etc.).

4. If you want to add another subject identifier (e.g. randomization number), click + and repeat the instructions in this section. **Please note: Each Subject ID Label must be different for data reports to download.**

Subject ID formats

The valid values for the subject ID format are:

- 0 – Identifier to be padded with a leading zero if no other digit entered.
- 9 – Any digit
- a – Any lowercase letter
- A – Any uppercase letter

Other characters – the character

- '0' – a 0 (literal)
- '9' – a 9 (literal)
- 'a' – an a (literal)
- 'A' – an A (literal)
- 'B-N' – B, hyphen, N (literal)

Any group of consecutive 0s in the string must be immediately followed by a 9.

Double quotes (") may be used equivalently to single quotes (') in the above.

Examples:

- 009 – up to three numbers
- R099 – R followed by three numbers (two or three may be entered)
- AA-009 – two uppercase letters followed by a hyphen followed by three numbers
- 00 – invalid (0s are not terminated by a 9)
- '0''A'99 – 0, A then two digits

Defining subject data items

Use the Subject Data section of the form to enter all items of subject data that you want to collect in the study in addition to the cognitive outcome measures, and (optionally) to place validation criteria on that data.

Note that the following items are added by default:

- **Language**: You cannot delete this item; a tester is always forced to select a language before a visit is run. **Please do not update the Language Subject Data label as this will cause data reports to fail.**
- Items for normative data comparisons: The following are included by default, but you can delete them if necessary:
    - **Date of Birth**
    - **Gender**
    - **Level of Education**

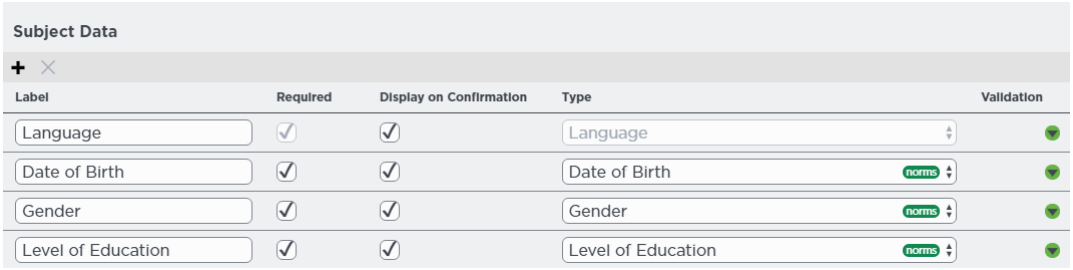
See A note on using normative data comparison items for more information.

Entering the subject data items

Read this section in conjunction with Data validation forms.

To complete the Subject Data section:

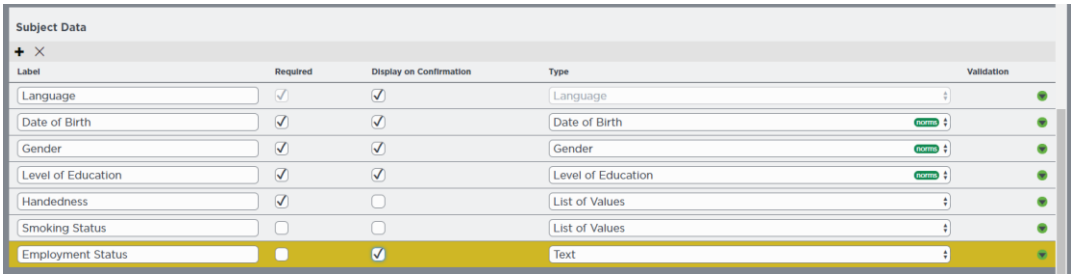
1. Set up the default Subject Data items (e.g. Date of Birth, Gender). Use the information in A note on using normative data comparison items to help you.
2. Click + at the top left of the Subject Data section to create entries for each additional item of data.



Subject Data: Default entries, including Normative Data comparison items

Since the system is so flexible, it doesn't make sense to give worked examples for every possible data type and validation method, so below we list the available options and provide an explanation for each one. There is a separate subsection on validation options.

Here's how a completed Subject Data section might look:

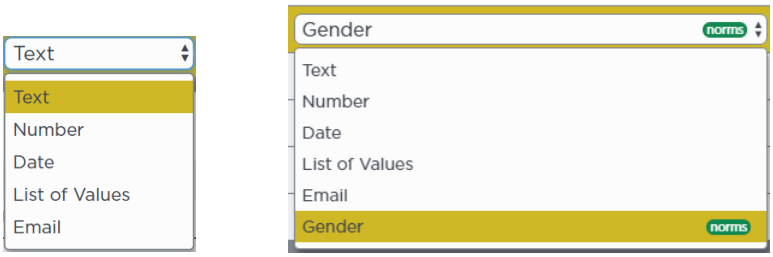


Example Subject Data section

Each line you add has the following fields and options:

- **Label**: Enter the name of the data being collected.

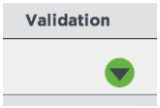
- **Required**: This specifies whether the tester is forced to enter this data before the visit can be run.
    - If enabled, the tester will be prompted to enter this data before the visit can be run.
    - If disabled, the data field will appear in the test, but it is optional
- **Display on Confirmation**: This allows you to include and exclude items from the confirmation screen that appears just before a visit runs
- **Type**: A drop-down list allowing you to specify the format of the data being collected. Menus for normative data types contain specific entries for that item. See A note on using normative data comparison items for more information.



Data Type menus, including specific entries for normative data items

Note: If you have a web-based study and it contains multiple visits, an Email address must be collected as a required subject data item. This will enable you to email subjects their own unique study URL link, which they will access to complete their visits.

- **Validation**: Click the **Validation** arrow to reveal a form where you can set the validation criteria for the data being entered. Click again to hide the form.



The form and the associated validation criteria depend on the data **Type** specified. See Data validation forms below for more details.

A note on using normative data comparison items

The normative data items in the subject data section obey a hierarchy:

- Level 1: Comparison will be made against all three normative data items
- Level 2: Normative data comparison only uses **Date of Birth** and **Gender**
- Level 3: Only **Date of Birth** will be used (this is the minimum requirement for normative data comparisons)

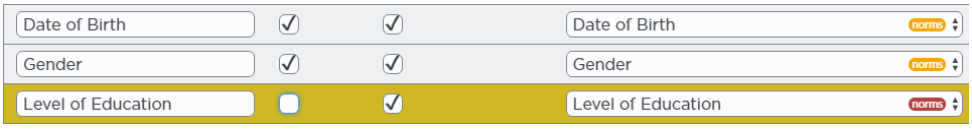
This hierarchy is reflected in the color of the **norms** icon:

- Green: The norms icons will be green if all three normative data items are required

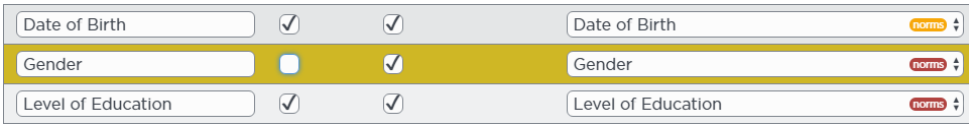
- Amber: Your normative data comparison could be further optimized by ensuring another item is required.
- Red: This item will not be used for normative data comparisons

For example:

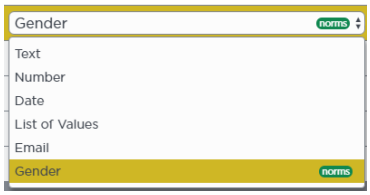
- If you disable the Level of Education item, both the Date of Birth and Gender norms icons will be amber, indicating that the study can be optimized by adding the Level of Education item



- If you disable just the Gender item, it will force both the Gender and Level of Education norms icons to turn red indicating that, due to the hierarchy, only the Date of Birth item (amber) will be used; You can further optimize the study by including the Gender, or Gender *and* Level of Education items



Note: The drop-down **Type** menu for each normative data item has a specific entry for that data item. For example, the Gender item includes a **Gender** menu entry:



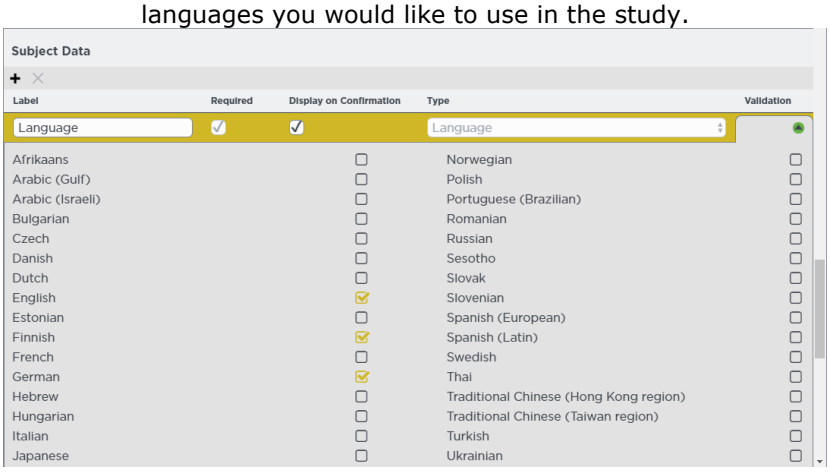
While you *could* select a different type for a given data item, this is not recommended, as the item would then not be included in any normative data comparisons. If you do select a different type (e.g. if you made the Gender item a Text data type), it would affect the optimization of the normative data comparisons.

Data validation forms

When defining the subject data that you want to include in your study, the **Validation** form provides a very flexible way of constraining the data that can be entered during the visit. The Validation form is context sensitive; the options it provides depend on the **Type** of subject data.

Language

You can select which languages will be available in the study from this screen. Click the validation arrow to see the available languages. You can then click to select each of the languages you would like to use in the study.



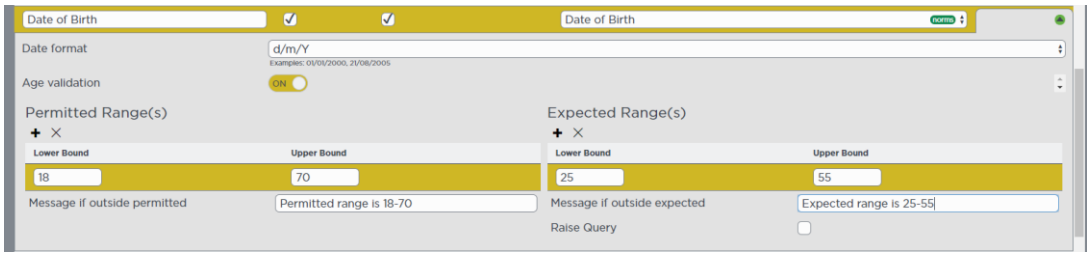
If you have enabled web-based testing for one or more visits, only languages that are supported for web-based testing can be used. Please speak to a member of our Customer Services team to find out which languages are currently supported or to discuss your language requirements.

Note: At this point you are only choosing which languages are available within the study. When you add a subject to the study (either via the Admin application or the Rater application), you will be asked which of the selected languages you would like this subject to be tested in. If your study is web-based and allows for self-enrolment, your subject will be asked which language they would like to be tested in at the start of the first visit. For further information on how to choose the testing language for a subject see the *CANTAB Connect Research: Test Administration User Guide*.

The automated voiceover instructions and application instructions will automatically be available in the specified languages. If your study is web-based and you have enabled multiple languages, the translations of all configurable text entered during study set-up (e.g. study description, subject data items, consent message (if applicable) and release message) will need to be entered separately. See Entering translations for your web-based study for more information.

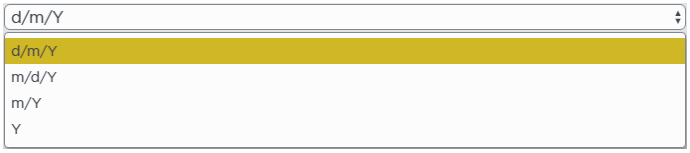
Date of Birth

Note: If you opt not to use this normative data item, you can still incorporate age validation using the Date item.



Date of Birth validation options

1. Select a **Date format** from the drop-down menu.



2. **Age validation**: This option allows you to set the subject age range for the study. This range can be Permitted (if a subject D.O.B is entered outside of this age range then the testing session for that subject cannot run), or Expected (a warning message will be shown, but testing can still commence if a reason is supplied). If enabled, displays the extra options below:

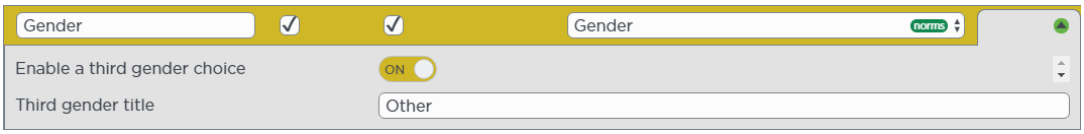
    a. **Permitted Range(s)**: Click + to create one or more age ranges of subjects permitted to take part in the study; Click to enter values in the Lower and Upper bound fields

    b. **Message if outside permitted**: Enter a message that will inform the tester of this issue (hint: include the limits in the error message!).

    c. **Expected Range(s)**: Click + to create one or more age ranges that you would ideally expect in this study; Click to enter values in the **Lower** and **Upper bound** fields

d. **Message if outside expected**: Enter a message that will inform the tester of this issue (hint: include the limits in the error message!).

Gender

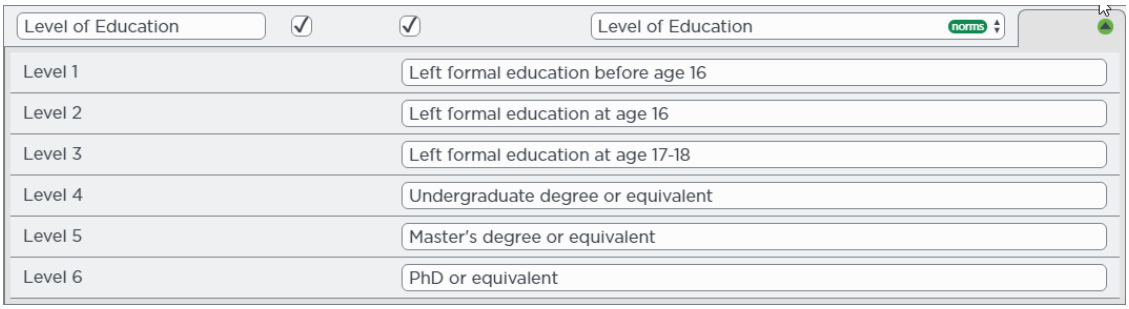


Gender validation options

By default, Male and Female will be the only options that the tester can select.

If you want to add a third option, switch **Enable third gender choice on** and enter a title.

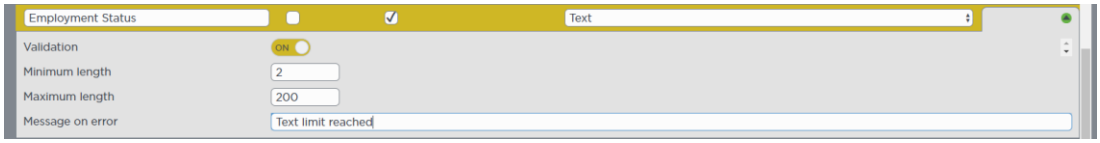
Level of Education



Level of Education validation options

There are six levels of education. Default definitions are supplied but you can change these if required. Note: these are the levels of education that will be used to form the normative data comparison, therefore, we recommend that any changes to these definitions are to directly translate into a different language and not change the underlying categories.

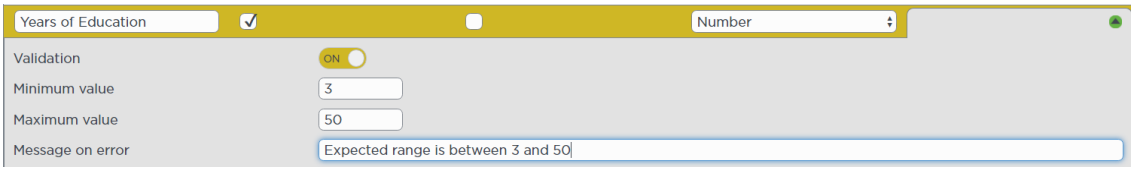
Text



Text validation options

Enter the minimum and maximum allowable length of the text string and type a message that will be displayed if the tester enters a longer or shorter string (hint: include the limits in the error message!).

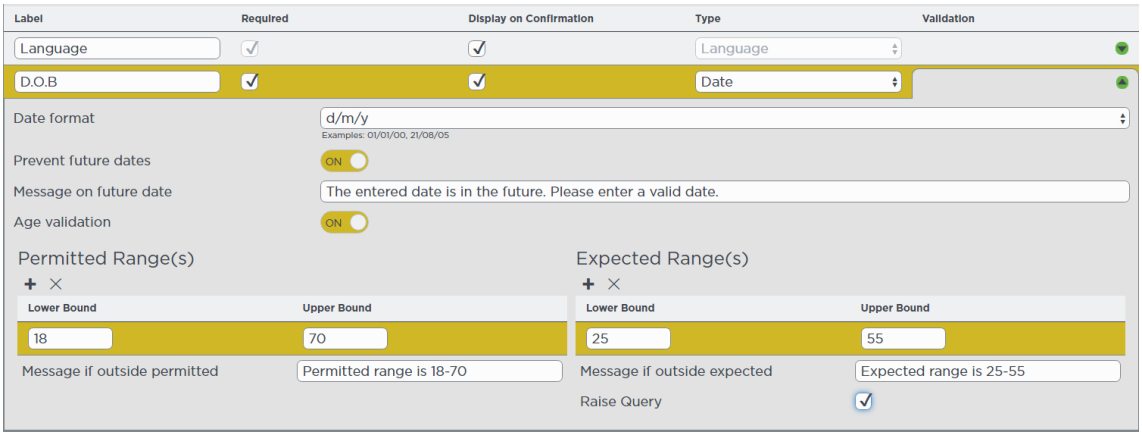
Number



Number validation

Enter the minimum and maximum values and type a message that will be displayed if the tester enters a longer and shorter string (hint: include the limits in the error message!).

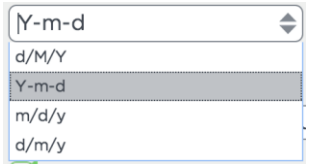
Date



Date validation

Date entry is very flexible, with some optional settings for age validation:

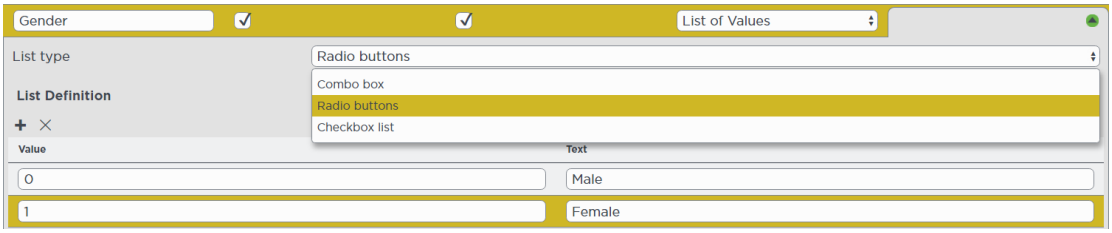
- **Date format**: Choose a format from the drop-down menu



Date format

- **Prevent future dates**: If enabled, an error message will be displayed if the tester enters any date after the day of the visit; It also displays the following field:
    - **Message on future date**: (Only enabled if **Prevent future date** is ticked) Enter the text you want to be displayed if a future date is entered by the tester
- **Age validation**: This option allows you to set the subject age range for the study. (Note that this functionality is replicated in the Date of Birth normative data item. Use Date if you decide not to include normative data comparisons, but still want to include age validation.) This range can be **Permitted** (if a subject D.O.B is entered outside of this age range then the testing session for that subject cannot run), or **Expected** (a warning message will be shown, but testing can still commence if a reason is supplied). If enabled, this displays the extra options below:
    - **Permitted Range(s)**: Click + to create one or more age ranges of subjects permitted to take part in the study; Click to enter values in the Lower and Upper bound fields
    - **Message if outside permitted**: Enter a message that will inform the tester of this issue (hint: include the limits in the error message!).
    - **Expected Range(s)**: Click + to create one or more age ranges that you would ideally expect in this study; Click to enter values in the **Lower** and **Upper bound** fields
    - **Message if outside expected**: Enter a message that will inform the tester of this issue (hint: include the limits in the error message!).

List of Values

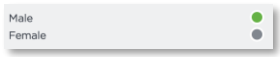


List Validation: List types

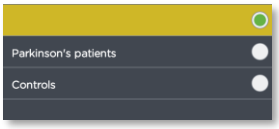
Choose the List Type (e.g. **Radio buttons**) from the drop-down menu, then **Add** definitions:

- **Value**: This is what is saved in your study data
- **Text**: This is what actually appears on screen during the visit

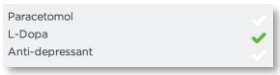
Note: The Radio button and Combo box options do not allow for multiple selection, while the Checklist option allows multiple options to be selected simultaneously.



Radio buttons



Combo box



Checklist

Email

If you want to collect an email address from the subject. This will ensure that the entered email address is in the correct format, i.e. xxx@xxx.com

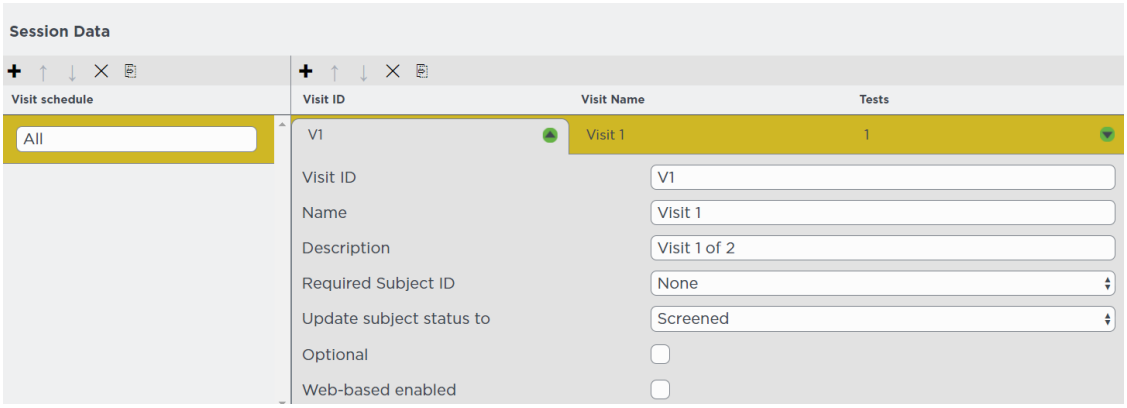
Defining session data for the study

This is where you set up the groups, visits and tests for a study. The group field is automatically populated with 'All'. If all your subjects are completing the same number of visits and the same test order, you will not need to edit this or add more groups. This minimizes the need to replicate visit and test information for multiple groups completing identical testing sessions. However, if you have multiple groups that will complete a different number of visits or will have a different test battery, you can add a new group and rename the fields accordingly.

Notes

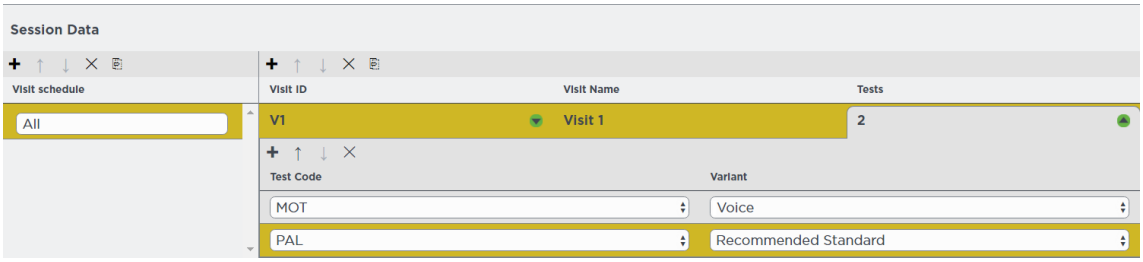
- The term 'visit schedule' is used interchangeably with 'group'. If you have a study in which all subjects will complete the same test battery regardless of group, then we would advise you to create one visit schedule called 'All', then add a new subject data item called 'Subject group' and set that as a list of values. This means there are fewer fields when adding a new subject to the study.
- If self-enrolment is enabled, the visit schedule must be set to 'All'. This is because it is not possible to manually assign a group to a subject who is self-enrolling.
- Subjects are allocated to a group when they are added to a study. See the *CANTAB Connect Research: Test Administration User Guide* for further details.

The image below is the session data for our example study. It is expanded to show the details for Visit 1 for the group 'All'.



Session Data example 1

Here's the same session data, now showing the tests defined for Visit 1:



Session Data example 2

Workflow overview

The workflow is as follows:

1. Define the subject groups (using the **Visit schedule** section of the Session Data form) taking part in your study; this is auto-populated as 'All'.
2. For each group, define one or more visits.
3. For each visit, define the tests (test codes and variants) each subject must complete.

Supplied research tests

Please refer to the **CANTAB Connect Test Selector** for details of available tests and batteries. For detailed descriptions of test codes and variants, please see CANTAB Connect Research Test Variants later in this guide.

A simple worked example

To configure the group 'All' with one visit and one test:

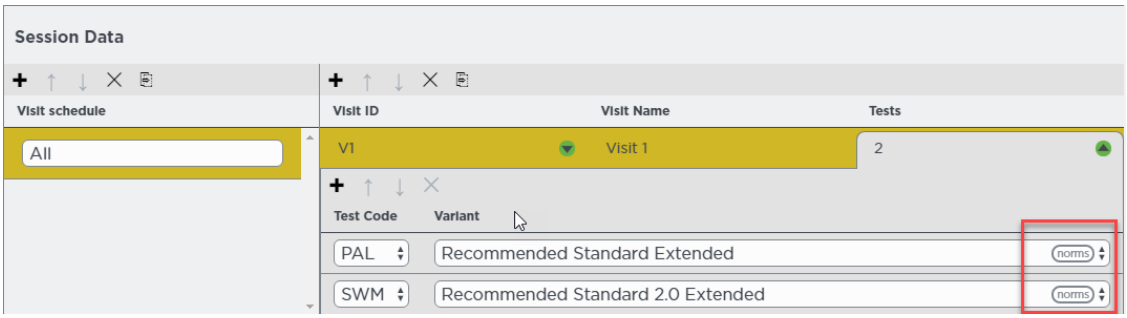
1. Select the group, indicating that any actions you perform will apply to this group.
2. Click + to the left of the visit section of the form. This will add a new visit entry, ready to be defined.
3. Click under the **Visit ID** heading and fill in the visit details:
   - **Visit ID**: This is the ID that appears in your data
   - **Name**: This will appear on the screen when the study is run

- **Description**: You can add a short description of the visit here, including visit reason (for example, baseline)
- **Required Subject ID**: This ensures that the subject ID (with the format you created earlier) is included with the test data
- **Update Subject status to**: Use the drop-down menu to specify the subject's status once the visit has been completed (choose from New, Screened, Enrolled, Completed or Withdrawn)

  Note: If you have enabled web-based testing, the status should only be set to 'Completed' on the final visit. If the status updates to 'Completed' for a visit partway through the visit schedule, the subject will not be able to access any of the visits coming after that visit, as their web-based link will no longer be valid.
- **Optional**: The entire visit is optional (we recommend you leave this option unchecked)
- **Web-based enabled**: select this option if the visit is to be web-based. If so, only tests validated for web-based testing can be run at this visit. Studies can contain a combination of web-based and non-web-based visits. If you want the Consent message to be displayed (see Cambridge Cognition Privacy Policy), the first visit in the schedule must have web-based testing enabled.
- **Permitted web-based testing devices:** By default this will be 'All devices from the Study Definition'. Select one or more options from the drop-down menu if you want to change the permitted devices that can be used for a particular visit.

4. Click  under the **Tests** heading. This will reveal another subsection of the form where you enter tests for this visit. See CANTAB Connect Research Test Variants for more information.
5. Click the  button under the **Tests** heading to add a new test entry.
6. Click in turn in the **Test Code** and **Variant** fields and select a test and variant from the drop-down menus. See CANTAB Connect Research Test Variants later in this guide for more information.

   Note: Some test variants have normative data available. This is indicated by the word **norms** at the right of the Variant entry:



Test variants with normative data comparisons

7. **Save** the Development version of the study.

To add group information in **Subject Data** for pre-enrolled subjects:

With your visit schedule set as 'All', you will now need to add any group information in the Subject Data section.

1. Follow the instructions for adding new subject data under Defining subject data items.
2. Name the **Label** field 'Group'.

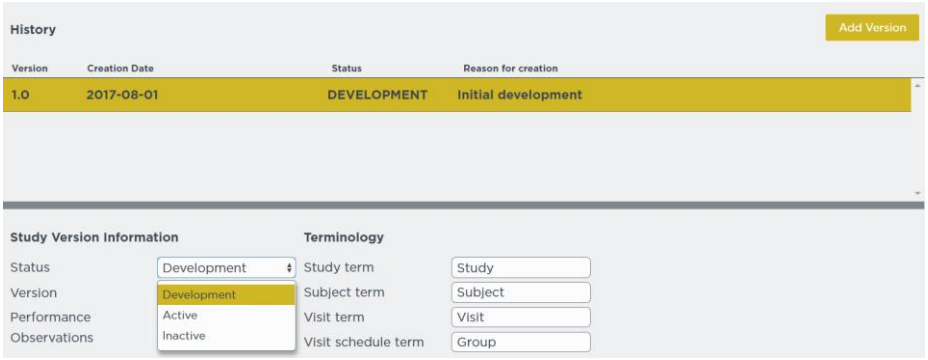
3. Select required and/or display on confirmation. N.B: if the testers will be blind to the group, do not tick either of these fields. You will then be able to retroactively add this information.
4. Under **type** select **List of Values**.
5. Click  under Validation and choose **Combo box** from the drop-down list. You can then add as many groups as required.

Making a study active

Once you are satisfied that you have finished setting up your study, you can change its status from **Development** to **Active**. It will then be available to be run by testers using CANTAB Connect Research on an iPad, or by subjects via the web-based testing platform.

To make a study active:

1. Display the Study List (you can always reach this by clicking on the **Organization** tab then double-clicking on your Organization's name).
2. Double-click on the study name.
3. Click on the **Study Settings** button. 
4. Choose **Active** from the Status drop-down menu and **save**.



Making a study active

Entering translations for your web-based study (if applicable)

Note: Translations can only be added when a study is set to **Active**.

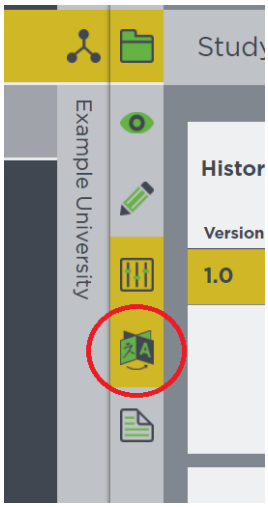
If you have selected **more than one** language (see Entering the subject data items and Language) and have set your web-based study to **Active**, you will need to configure the translations for the following items before subjects can be tested:

- Study description (as defined in the Study Details)
- Consent message text (if applicable)
- Release message text
- Subject Data Item labels
- Items within Subject Data Item lists
- Warnings for the Subject Data fields (e.g. message on error, message on future date etc.)

Please speak to a member of our Customer Services team to find out which languages are currently supported or to discuss your language support requirements.

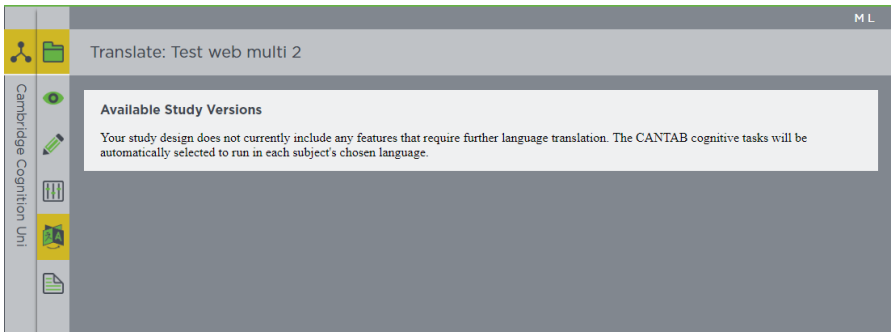
To enter translations:

1. Select the translations tab on the left hand-side of the screen:



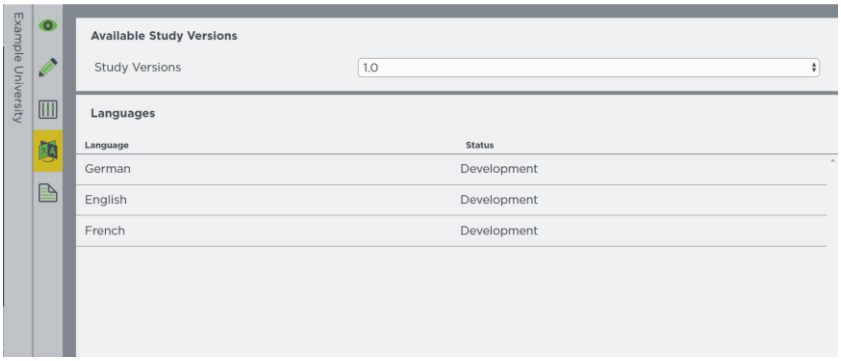
Translations tab

If translations are not applicable for this study, the following screen will be displayed:



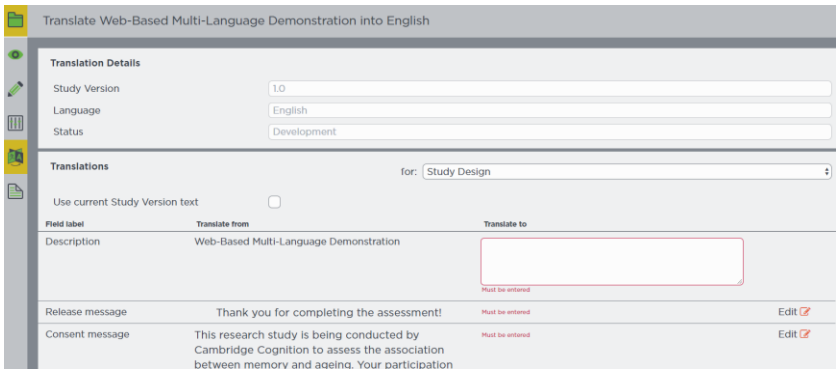
2. All the finalized, translatable content of the study design is pulled through into the translations section for each of the selected languages when you set the study design to **Active**. That way, you can ensure that all the fields that require translation are included (no further modification to that study version ensures that all fields are included in the translation process).

   All languages selected in the study design page will be displayed within the **Translate** tab and the language content for each must be finalized before testing can commence for that language.



Translations tab

3. Double-click a language to enter the translations for it.



Example English translations tab

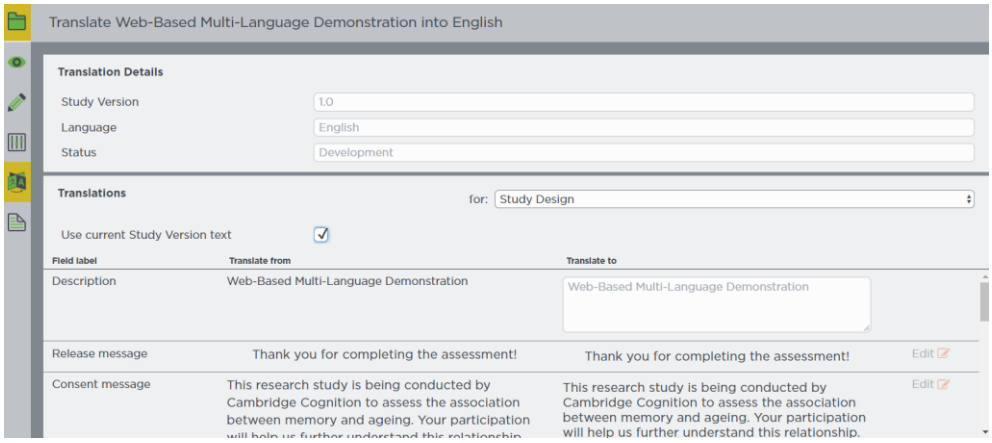
The Translation Details panel has the following (non-editable) information:

- The **Study Version** these translations are for
- The **Language** of the translations
- The **Status** of these translations (Development or Active)

The Translations panel has the following information:

- **Field label** –the name of the study design field
- **Translate from** –the original text from the study design page that populates that field
- **Translate to** – this is where the translated text must be entered for that field

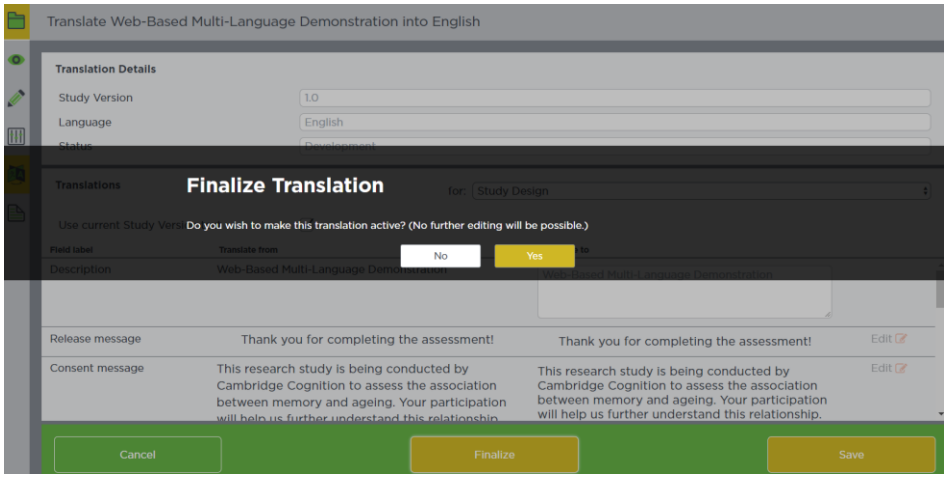
4. If you want to use the text in the current study version, select the **Use current Study Version text** box to auto-populate the **Translate to** fields with the current study version text. This will save you having to enter the text again.



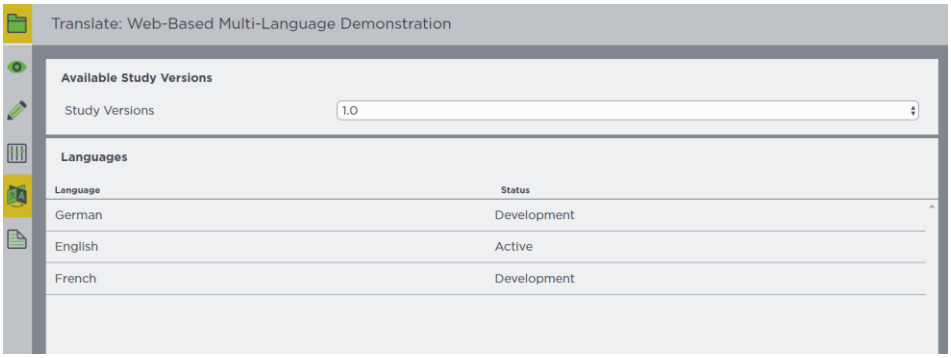
*Auto-populating the **Translate to** tab using the **Use current Study Version text** tick box*

5. You can **Save** and come back to amend each translation as many times as you need.

6. Once you are happy with the content of the translations for a language, select **Finalize**. This sets the language status to **Active**, and no further amendments can be made to the translations for that language, for that study version.

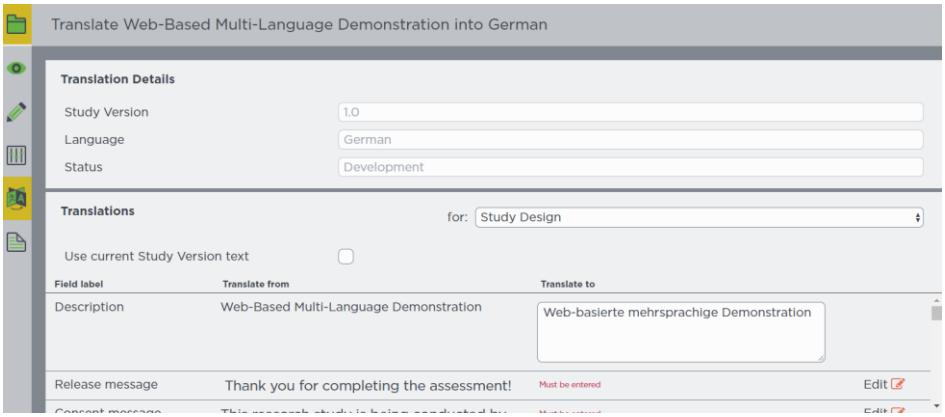


Finalization of translations for a language

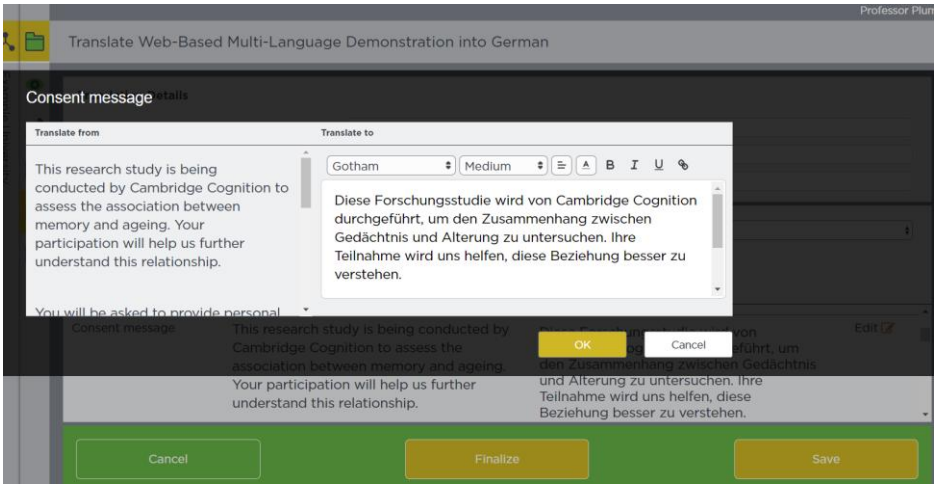


Active language

7. Continue entering the translations for the study for any other languages; Type or copy/paste text into the **Translate to** boxes for each field.



Translation entry for additional languages (I)



Translation entry for additional languages (II)

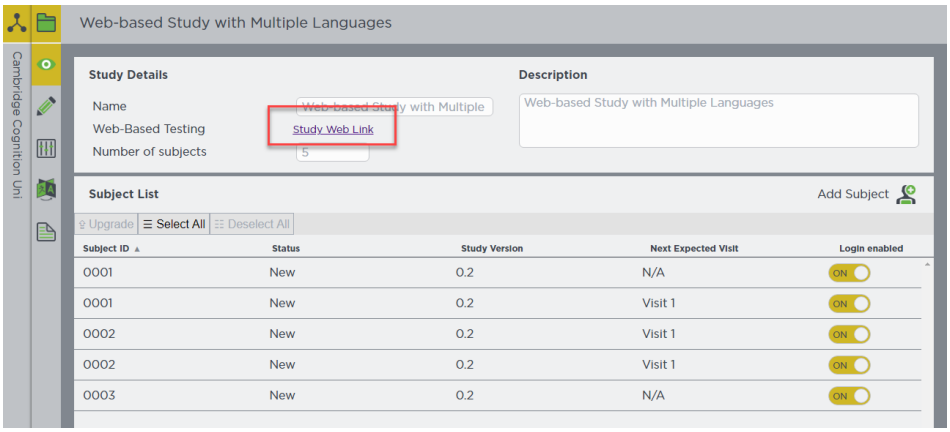
8. **Save** and come back to amend each translation as many times as required.
9. As before, once you are happy with the content of the translations for a language, select **Finalize**. This sets the language status to **Active**, and no further amendments can be made to the translations for that language, for that study version.
10. Once all languages for the study have been finalized, you are ready to begin testing.

Adding subjects to a web-based study

You can add subjects to the study in the Admin application, or in the Rater application (see the *CANTAB Connect Research: Test Administration User Guide*) before testing (pre-enrolment). You can also have subjects enroll themselves (self-enrolment). A web-based study can be designed to have both pre-enrolled and self-enrolled subjects.

Self-enrolment

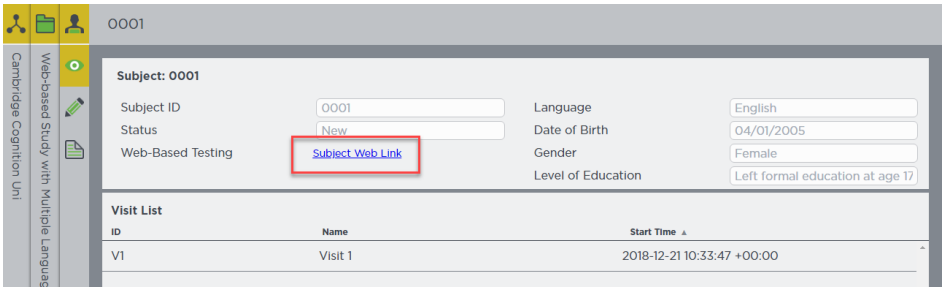
If **Enable self-enrolment** is selected, the study will automatically be assigned a unique URL link when the study version status is set to **Active**. This study-specific URL will be located on the Study Details page and is visible to those with the Study Creator role assigned.



Study-specific web link

This URL link can be easily copied and pasted onto a webpage or into the body of an email for example and be used by subjects to access the Consent, Enrolment and assessment process online.

Whenever a subject is enrolled (either via self-enrolment or pre-enrolment), a subject-specific URL is generated for that subject, which can be found on each subject's overview page.



Subject-specific web link

This URL link contains a unique subject identifier and is the link the subject uses to complete their web-based assessments.

If a subject is self-enrolling and the study contains multiple web-based visits, subjects will be required to provide their email address as part of the enrolment process (see Defining subject data items for further detail). Subjects will receive an automated email from CANTAB Connect Research containing their **Subject Web Link**. The subject will be asked to use this link to access and complete their online visits.

Pre-enrolment

If a subject is **pre-enrolled**, the Subject Web Link can be sent in the following ways:

- Copy the link on the Subject page and paste it into an email to a subject
- Use the 'Subject Data Items Report' to send Subject Web Links to subjects via a mail merge (see Reporting below for further details).

Note: The web links will always take subjects to the **most recently activated Study version**.

Creating a new version of an existing study

Once you have made a study active, the study design can no longer be amended. In some cases, however, you might need to alter a study that has already been made active.

For example, you might want to:

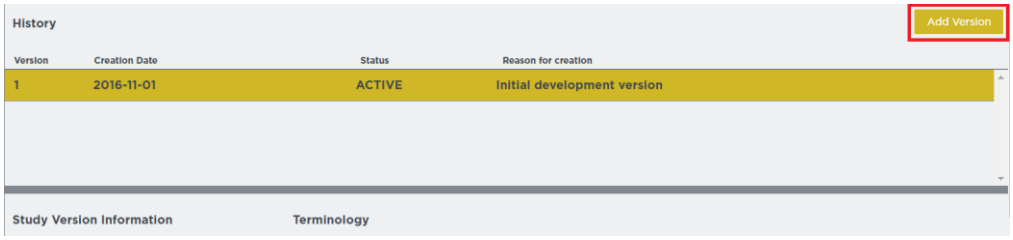
- Alter the test battery that subjects complete
- Add visits to the visit schedule.

To do this, you must create a new version of the study. You can do this by creating a copy of the current (or any previous) version of the study. Depending on the changes you make, you may be able to upgrade existing subjects to the new version of the study (see Upgrading subjects below).

Creating a development version of an existing study

To create a new Development version of an existing (active) study:

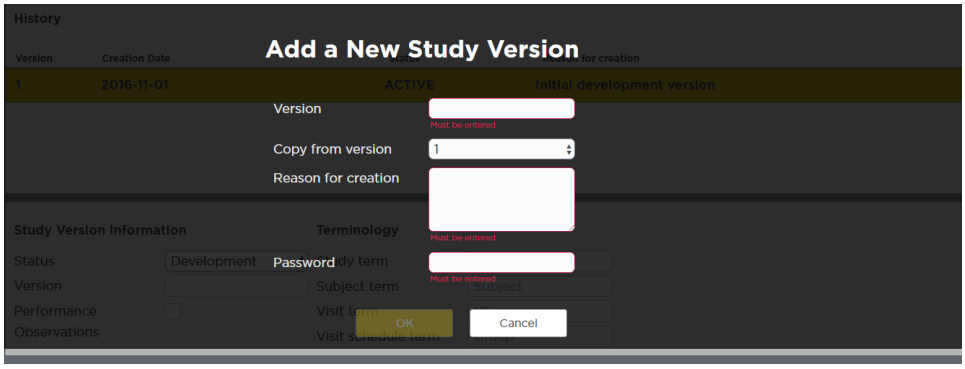
1. Display the Study List (click on the **Organization** tab then double-click on your Organization's name).
2. Double-click on the study name.
3. Click on the **Study Settings** button .
4. Click **Add version** in the top right of the screen.



Adding a new Version of a study

5. Enter the details for the new version.

   You can base the new version on any of the existing active versions by selecting from the **Copy from version** drop-down menu.



Version details

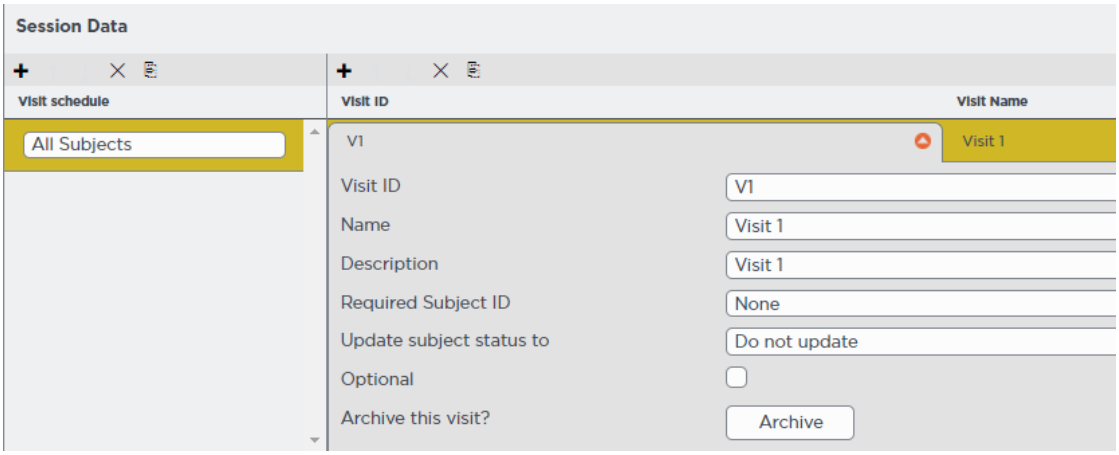
6. Click **OK**.

7. Make any changes to the study configuration (e.g. add visits to the visit schedule) and click **Save**.
8. See Making a study active for information on how to make the study version **Active**.

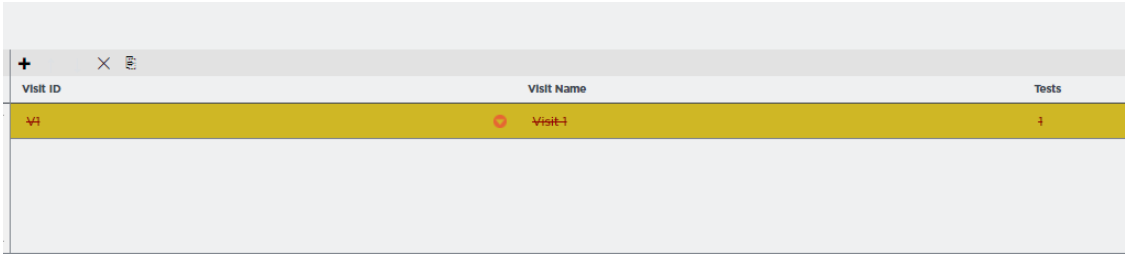
Note: All new subjects will be tested using the most recent active study version by default.

Archiving a Visit

When a visit is archived, the data collected against that visit will still appear in the reports. However, the visit will not appear in the visit schedule so it will not be possible to resume or restart this visit. It will also not appear in the visit schedule for any subjects who were enrolled on to the study after the visit was archived.



Archiving a visit



Archiving a visit

Notes

- When a visit has been archived, it is not possible to 'un-archive' it at a later point. You must therefore be sure you want to archive a visit before saving the study configuration.
- It is possible to copy an archived visit. If the copied visit is to be used instead of the archived visit (for example, for new subjects enrolled onto your study), you must ensure that the copied visit is before the archived visit in the visit schedule.
- When testing an existing subject, the software will automatically proceed to the next un-archived visit in the visit schedule after the last completed visit.

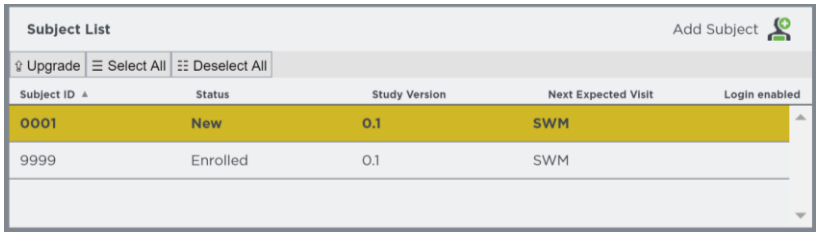
Upgrading subjects

Once you have finished editing a new Development version of a study, you can make the version active. This will allow you to use this study version to collect data from subjects.

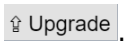
If the only changes you have made to the study are to add further visits, or to archive an existing visit, you can upgrade subjects from the previous study version to the newly created version. This means that any data collected from their completed visits is integrated with any additional new data that is collected via the new study version. It will also allow existing subjects to complete the newly-added visits.

To upgrade subjects to the new study version:

1. Display the Study List (click on the **Organization** tab then double-click on your organization's name).
2. Double-click on the study name.
3. Click on  to display the **Study overview** page.
4. Select the subjects you want to upgrade by clicking on their entry in the Subject List.



Selecting a subject from the Subject list

5. Click the **Upgrade** button at the top left corner of the Subject List  .
6. If you intend to upgrade all subjects to a new study version, then you can use the **Select All** button.

Note: If you have made changes to the Subject ID or Subject Data sections, or have made any amendments to existing visits, then it will not be possible to upgrade subjects.

If you are unsure whether you will be able to upgrade subjects, please speak to a member of our Customer Services team.

Retiring study versions

In some rare cases, you may want to retire a version of a study. This may be applicable if you have created a study version and made it active, but you would now like to edit the study, and you **have not yet collected any data**.

To retire a study version:

1. Display the Study List (click on the **Organization** tab then double-click on your organization's name).
2. Double-click on the study name.
3. Click on the **Study Settings** button  .
4. Choose **Inactive** from the Status drop-down menu and **save**.

Note: Once a study has been set to Inactive, data collected from that study version will no longer appear in your reports. It is therefore advisable to only make a study version Inactive if you have not collected any data on that study, or if any data collected was for practice purposes only.

Managing user accounts

CANTAB Connect Research defines the following roles:

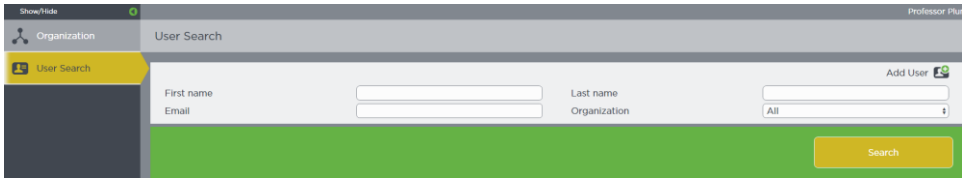
- **User Creator**: Can create other user accounts
- **Study Creator**: Can create and edit studies
- **Tester**: Can only collect data for studies to which they have been given access
- **Study Administrator**: Can add and edit subjects, generate reports, reset user's passwords and administer subject access for web-based testing

Searching for user accounts

Note: You can only search for users if you are logged into CANTAB Connect Research with User Creator privileges.

To search for one or more user accounts:

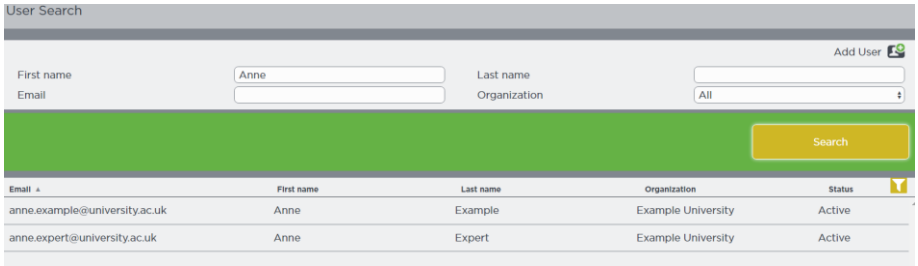
1. Click on the **User Search** tab on the left of the main screen. This displays the User Search form.



User Search form

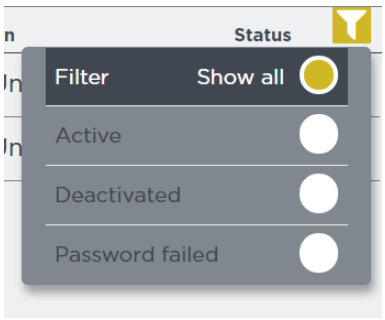
2. Search using one of the following methods:
   - Enter the First Name, Last Name or Email Address fields. Note that the search is case sensitive, and you cannot use wildcard characters.
   - Choose an Organization from the drop-down menu to search for users.
3. Click **Search**.

   When the search is complete a list of users will be shown.



Search results table

4. To narrow down the list, click on the **Filter** button and choose a parameter to filter on:



Search results filter

5. You can filter the results to show **Active**, **Inactive** or **Password failed** users.

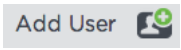
Creating a new user account

Notes:

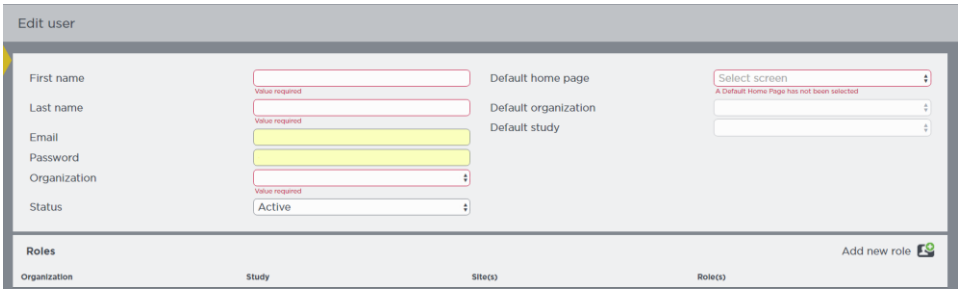
- You must be logged in with **User Creator** role privileges in order to be able to create other user accounts.
- Unless you are assigning a role to all studies on a given license, there must be at least one active study before you can create a user account. This is because you need to be able to assign a study, and at least one role relating to that study, to each user account that you create.

To create a new user account:

1. Click on the **User Search** tab on the left of the main screen.
2. Click on the **Add User** button on the right of the search form.



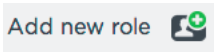
The Add/Edit user form will be displayed.



Add/Edit user form

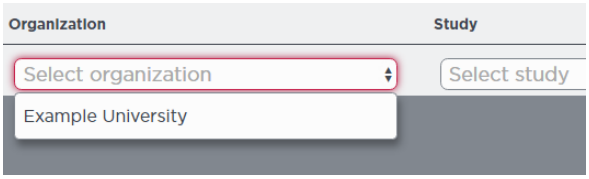
3. Enter a **First name**, **Last name**, **Email** and **Password**. This password will only be used the first time that user logs in; they will then be prompted to choose a new password. Alternatively, click the 'Resend Link' button and an automatic email will be sent to the user to change their password.
4. Select the **Organization** to which that user belongs from the drop-down menu.
5. Set the user's **Status** (Active or Inactive).
   Inactive User details are stored on the system, but the user cannot log in until their status is changed to Active.

6. Click the **Add new role** button to add an entry to the Roles section of the form.



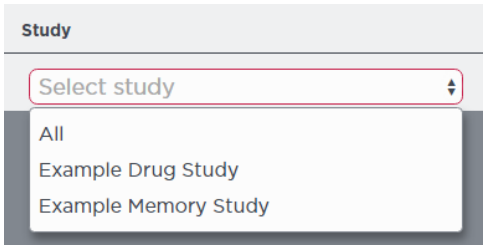
Note: You must assign the user their role(s) before selecting their default settings. If you do not assign a role(s) first, no options will be available in the default settings section.

7. Click under the **Organization** heading and select the Organization to which this user role applies.



Selecting an Organization

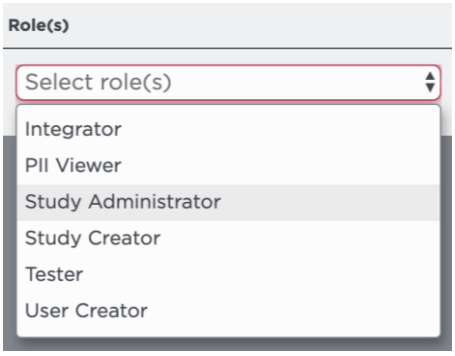
8. If you want to specify an individual study to which this role applies, choose one from the **Study** drop-down menu.



Assigning a study to a role

Note: We recommend you leave this as the default setting (All) unless you specifically want to restrict access on a per-study basis.

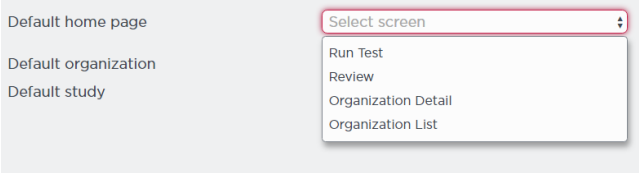
9. Click under the Select Role(s) heading to display a drop-down menu and then click to add one or more roles to the field.



Adding roles to a user

- The menu will remain visible if you keep the pointer hovering over it; that way you can easily add and remove roles without having to redisplay the menu.
- Repeatedly clicking on an entry toggles the entry on and off.
- Only select Tester if this user is only to be allowed to run tests.

10. At the top right of the form, select the **Default Home Page** from the drop-down menu. This will be displayed every time the user logs in. They can change this if they require.



Default Home Page menu

Note: The choice you make here will affect the availability and options in the remaining two fields.

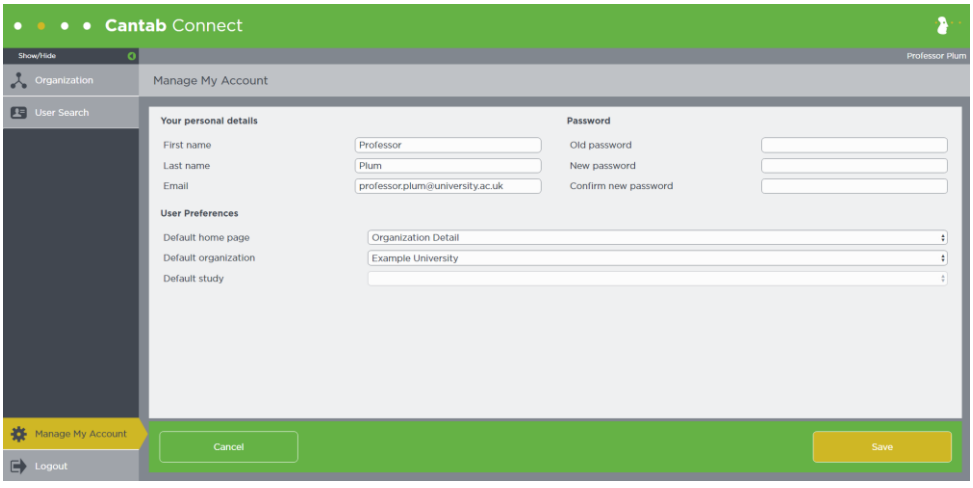
11. If enabled, select the **Default Organization** for this user from the drop-down menu.
12. If enabled, select the **Default Study** for this user from the drop-down menu. (The list will be populated according to the studies you assigned earlier).
13. Click **Save** at the bottom right of the form.

Viewing and changing your account details

Any user logged in to CANTAB Connect Research on a desktop computer can update their Account details.

To edit your own account details:

1. Click on the **Manage My Account** tab in the bottom left of the application window. This will display the Manage Account screen, which contains your personal details.



Manage My Account screen

2. Change any personal details as necessary (e.g. name, email).
3. Change your password: see Changing your own password when logged in.
4. Change your Default Home Page: select an option from the drop-down menu.

Changing the Default Home Page

Note that your choice then affects the availability of the remaining options.

5. If you have more than one Organization associated with your account, select the Default Organization that will be displayed when you log in.
6. If you chose Study Detail as your Default Home Page (and you have multiple studies associated with your account), choose a Default Study that will be displayed when you log in.
7. Click **Save**.

Managing passwords

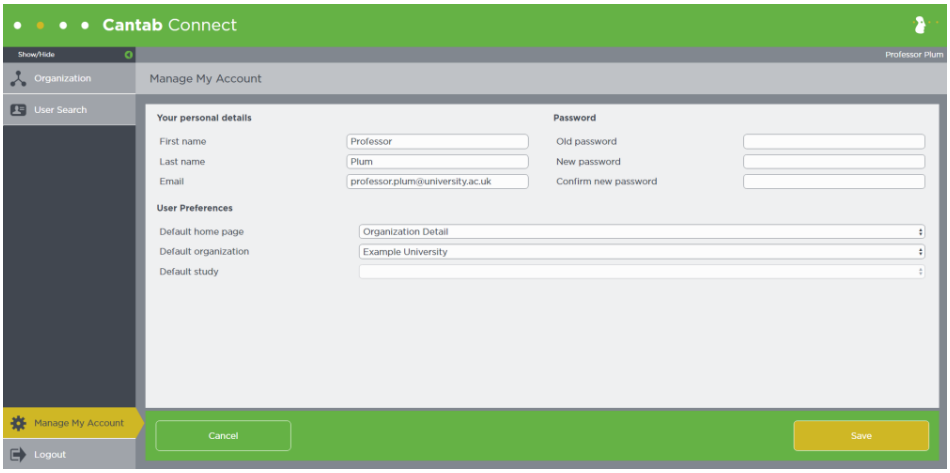
You can:

- Change your own password (when logged in)
- Change another user's password (if you have sufficient privileges)

Changing your own password when logged in

Any user can change their own password while they are already logged in to CANTAB Connect Research on a desktop computer. To do this:

1. Click on the **Manage My Account** tab in the bottom left of the application window. This will display the Manage Account screen, which contains your Personal Details.



Account management: Password

2. In the Password section, enter your old password.
3. Enter your chosen password in the **New Password** and **Confirm New Password** fields and click **Save**.

Next time you log in, you must supply the new password.

- If you forget your password, click 'Forgotten password?' on the log-in screen or email support@camcog.com
- If you enter an incorrect password three times, you will be locked out of the system; another user with the User Creator role can reset your password for you.

Changing another user's password

In order to be able to change the password on a different user account, you must have been assigned the role of **User Creator** for all studies to which that user has access.

To change another user's password:

1. Search for the user and display their personal details.

2. Click the 'Resend Link' button. This will automatically email the user with a link to reset their own password. Alternatively, enter a new password in the Password field.
3. Check the user's status.

   If the user had previously entered an incorrect password three times, they will currently be locked out of the system and their Status will automatically be changed to **Password Failed**. Click to display the Status drop-down menu and set their Status to **Active**.
4. Click **Save**.
8. Inform the user of their new (temporary) password, where applicable. Next time that user logs in, they will need to log in using their temporary password before being prompted to choose a new password.

Updating a user's status

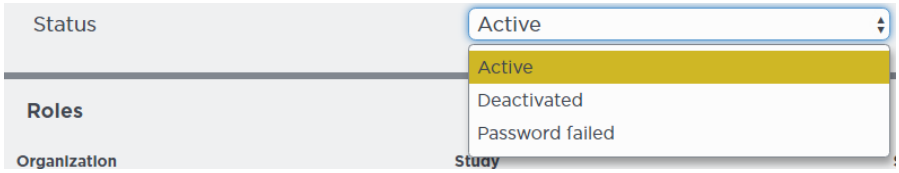
In order to be able to change the Status on a different user account, you must have been assigned the role of **User Creator** for all studies to which that user has access.

You can change a user's status between **Active** and **Inactive** or reactivate an account with **Password failed** status.

- **Active**: The user can log into their account as normal
- **Inactive**: The account details are stored on the system, but the user cannot currently log in and use the account
- **Password failed**: The user has entered their password incorrectly too many times

To change the status of a user account:

1. Search for the user account.
2. Double-click on the account entry to display the **Add/Edit User** screen.
3. Choose **Active** or **Inactive** from the drop-down menu.



User Status menu

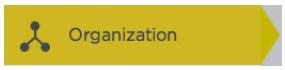
4. If necessary, enter a new **Password** for the user account (see Changing another user's password).
5. Click **Save**.

Note: You cannot explicitly set the status to **Password failed** – this entry is for information only.

Reporting

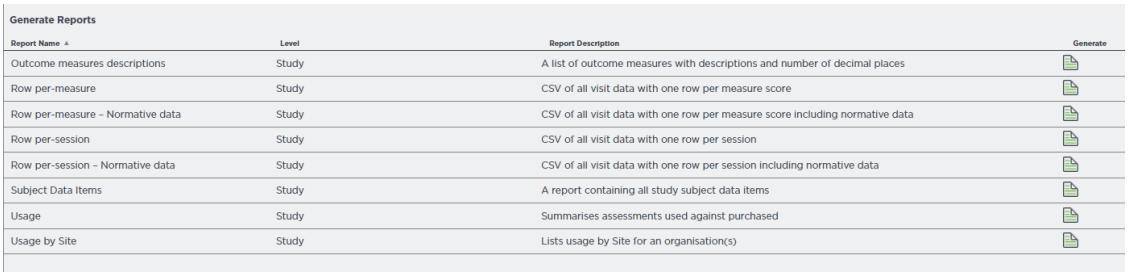
Once you have tested subjects, you can generate a report (in CSV format) containing the test data.

1. Click the **Organization** tab to display the Organization List.



2. Double-click on one of the listed Organizations to display the Organization Details page. This includes the Study List.
3. Double-click on one of the listed studies to display the Study Detail page.
4. Tap the Reporting tab to display the Reporting screen.

Reports tab



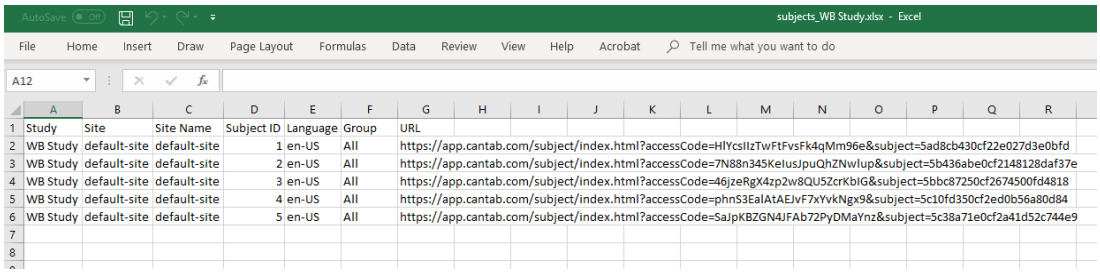
Generate Reports

Report Name	Level	Report Description	Generate
Outcome measures descriptions	Study	A list of outcome measures with descriptions and number of decimal places	
Row per-measure	Study	CSV of all visit data with one row per measure score	
Row per-measure - Normative data	Study	CSV of all visit data with one row per measure score including normative data	
Row per-session	Study	CSV of all visit data with one row per session	
Row per-session - Normative data	Study	CSV of all visit data with one row per session including normative data	
Subject Data Items	Study	A report containing all study subject data items	
Usage	Study	Summarises assessments used against purchased	
Usage by Site	Study	Lists usage by Site for an organisation(s)	

Reporting screen

5. Decide which report to generate:
    - **Row per Measure**: Displays a report with one row for every measure generated by a test
    - **Row per Measure – Normative data**: Displays a report with one row for every measure generated by a test, along with normative data comparisons
    - **Row per Session**: Displays a report with one row for every visit.
    - **Row per Session – Normative data**: Displays a report with one row for every visit, along with normative data comparisons
    - Four additional reports are available:
        - **Usage** report: Provides the total number of assessments used and the total number of assessments purchased on the license.
        - **Usage by Study** report: Provides the total number of assessments used per study on the license.

- **Outcome Measures Description** report: Provides a list of all outcome measures relevant to the test variants used in the study. It includes the measure name, measure description and number of decimal places.
- **Subject Data Items** report: Provides a list of all subject IDs, subject data items and each subject-specific URL testing link for each enrolled subject. This report can be downloaded and used to email subject-specific URL links to subjects via a mail merge, for example.
  Note: This report is only applicable to web-based testing studies.



subjects_WB Study.xlsx - Excel

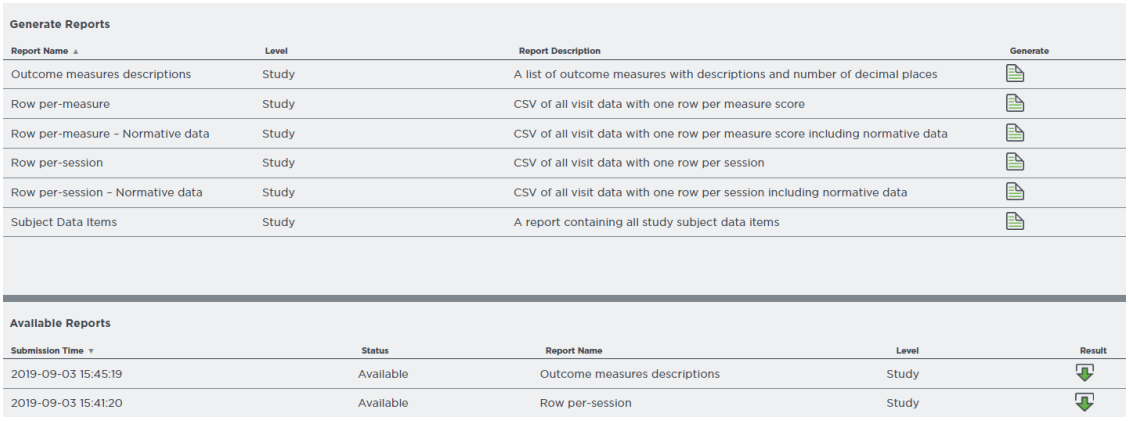
File Home Insert Draw Page Layout Formulas Data Review View Help Acrobat Tell me what you want to do

A12

	A	B	C	D	E	F	G
1	Study	Site	Site Name	Subject ID	Language	Group	URL
2	WB Study	default-site	default-site	1	en-US	All	https://app.cantab.com/subject/index.html?accessCode=HlYcsIIzTwFtFvsFk4qMm96e&subject=5ad8cb430cf22e027d3e0bfd
3	WB Study	default-site	default-site	2	en-US	All	https://app.cantab.com/subject/index.html?accessCode=7N88n345KeIusJpuQhZNwIup&subject=5b436abe0cf2148128daf37e
4	WB Study	default-site	default-site	3	en-US	All	https://app.cantab.com/subject/index.html?accessCode=46jzeRgX4zp2w8QU5ZcrKbIG&subject=5bbc87250cf2674500fd4818
5	WB Study	default-site	default-site	4	en-US	All	https://app.cantab.com/subject/index.html?accessCode=phnS3EalAtAEJvF7xYvkNgx9&subject=5c10fd350cf2ed0b56a80d84
6	WB Study	default-site	default-site	5	en-US	All	https://app.cantab.com/subject/index.html?accessCode=SaJpKBZGN4JFAb72PyDMaYnz&subject=5c38a71e0cf2a41d52c744e9
7							
8							

Subject Data Items report, showing unique study links for each subject

6. Tap  next to the report you want to generate.
   The report will be sent to the server for processing:
   - While the report is processing, an entry will appear in the Available Reports section of the screen, with the status PENDING.
   - When processing has completed, the status will change to AVAILABLE.



Generate Reports

Report Name	Level	Report Description	Generate
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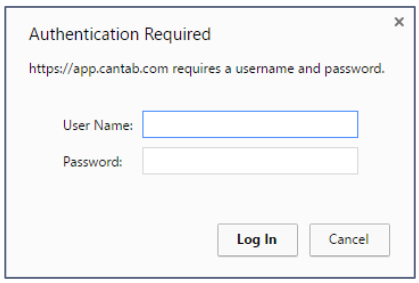
Row per-measure - Normative data	Study	CSV of all visit data with one row per measure score including normative data	
Row per-session	Study	CSV of all visit data with one row per session	
Row per-session - Normative data	Study	CSV of all visit data with one row per session including normative data	
Subject Data Items	Study	A report containing all study subject data items	

Available Reports

Submission Time	Status	Report Name	Level	Result
2019-09-03 15:45:19	Available	Outcome measures descriptions	Study	
2019-09-03 15:41:20	Available	Row per-session	Study	

Available reports

5. To view the report, click 
6. Enter your username and password to authenticate and click Log In (this security feature is to protect your data which are stored securely in a private part of the CANTAB Connect Research server).



Authentication Screen

7. The report data is downloaded.

Interpreting reports

This section explains how to interpret the various test statuses, and what to do if you have blank cells in your report.

Test status

- **ABORTED** – The test battery was deliberately exited mid-way through (either by pressing the home button or by tapping opposite corners of the screen). In this case, data from the test that was exited will not be output in the reports.
- **COMPLETED** – The test battery was completed in full. This status also applies to tests that were completed prematurely (i.e. the subject exceeded the maximum number of errors) but were not deliberately exited.
- **NOT_RUN** – The test was not run.
- **SYSTEM_ERROR** – This indicates data collection has been restricted. In most cases, this is likely due to the iPad being in portrait orientation, not landscape.

Blank cells

If you have blank cells in your reports, the first thing to check is that you do not have any data stored in Offline mode on your iPad. Ensure your iPad(s) are fully synced with Wi-Fi and you have a status of 'Online (Offline Ready)'. When you regenerate the report, if the cell remains blank then this indicates the outcome measure(s) could not be calculated. This could be because the test was aborted midway through and has yet to be resumed, or because the outcome measure is not applicable. To give an example of the latter option, if a test reaches a 12-pattern stage but the subject does not reach this level of difficulty, then any measures relating to this stage will not be applicable and will appear blank in the report.

All outcome measures that can be generated from a study will be visible in the reports, regardless of whether they apply to all subjects.

If a study contains the same test more than once but with different variants (i.e. a standard variant and a tone variant), then a separate set of outcome measures will be output for each variant. In this case, and assuming a subject runs the test using only one of the variants, then data will be output under one set of outcome measures, and the cells corresponding to the same test (but a different variant) will appear blank.

The same applies if you have multiple test batteries configured under the same study. In this case, all outcome measures will be visible in the reports, but some cells will appear blank if the test was not completed by a particular subject.

Subject application and response latencies

Cambridge Cognition has developed a web-based assessment platform (Subject Application) which can be used by researchers to remotely administer CANTAB tasks to subjects online. All CANTAB tasks go through rigorous scientific and technical validation testing before being made available for online testing. Our scientific validation report for the CANTAB tasks we have validated indicates that performance does not differ significantly between capture on an iPad at site and on a standard laptop/desktop computer at home [1]. However, we do not recommend comparisons of any latency outcome measures collected using web-based testing due to differences in hardware latencies which may mean that response times are not accurately captured.

Where different devices are used across the same study for web-based testing, there are likely to be differences in system response latency which cannot be controlled for. Therefore, the accuracy and validity of latency-based outcome measures is also likely to vary and be unreliable. For example, when completing tasks such as the RTI (Reaction Time Index) task, the subject needs to be able to hold down a button at the bottom of the

screen. They then need to respond to the onscreen stimuli by letting go of the button and touching a stimuli location where a target (yellow spot) appeared. These types of tasks measure the subjects' reaction time and movement time to provide the latency-based outcome measure scores. Thus, when completing these types of tasks on different desktop devices where some participants may use a trackpad and some where a mouse is used, an accurate measure of reaction time that can be compared between participants cannot be captured.

Tasks not validated for web-based testing and cannot be used for web-based testing:

- RTI (Reaction Time Index)
- MOT (Motor Screening Task)
- MTT (Multitasking Test)
- SST (Stop Signal Task)
- VRM (Verbal Recognition Memory)

Tasks where scientific and technical validation has been completed on non-latency-based measures for use in web-based testing. However, latency measures should not be used as they have not been scientifically validated:

- ERT (Emotion Recognition Task)
- MTS (Match to Sample Visual Search)
- OTS (One Touch Stockings of Cambridge)
- SOC (Stockings of Cambridge)
- RVP (Rapid Visual Information Processing)

[1] Vera Maljkovic, Melissa Anna Maria Pugh, Roy Yaari, Jie Shen, Jessie Juusola. At Home Cognitive Testing (CANTAB battery) in Healthy Controls and Cognitively Impaired Patients: A Feasibility Study. Alzheimer's Association International Conference (AAIC); Los Angeles, CA, USA; July 14 18, 2019.

Interpreting normative comparisons

This section outlines the process used to collect normative data and provides further clarification on the algorithm-based approach underpinning the normative data comparisons. Note that normative data is for guidance purposes only and does not substitute a control group.

Data collection

Data was collected using a web-based cognitive assessment application between September 2017 and March 2018. Participants were recruited using Prolific (https://www.prolific.ac/), an internationally available online platform for advertising web-based studies (Palan & Schitter, 2018). In order to take part, participants had to meet the following eligibility criteria:

- ≥ 18 years of age
- Fluent English speaker
- Had not experienced a significant head injury (resulting in a loss of consciousness)
- Had not been diagnosed with a mental health condition that is uncontrolled (by medication or intervention) and which has a significant impact on daily life
- Had never been diagnosed with mild cognitive impairment or dementia

After logging into Prolific, prospective participants clicked on a link to the study homepage, which provided a detailed explanation of the study. Participants were asked to provide basic demographic information including their age, sex and highest level of education. They then completed a cognitive assessment, lasting approximately thirty minutes, consisting of a

series of three CANTAB tasks. Participants were asked to perform all of the cognitive tests on their own, in a quiet room and to the best of their ability. They were instructed that they should not conduct these tests if they were feeling unusually stressed, tired, or unwell, or under the influence of alcohol or other substances. All subjects provided informed consent prior to their participation and were reimbursed for their time on completion of the study.

Explanation of algorithm behind normative comparison

To provide a comparison of study participants to our normative sample the first aim was to describe the performance of participants within our normative sample on each of our CANTAB tasks. Typically, there is a trend of performance with age that varies by gender and level of education; our first goal was to understand this variability.

Bayesian generalized linear models were used to estimate the change in performance of the normative sample on CANTAB tasks with age. Gender and education were included in these models as covariates to control for differences across gender and education categories but also to provide an estimate across these participant demographics.

Bayesian generalized linear models were chosen instead of providing means and standard deviations by gender and education categories, to allow robust predictions of performance that are less affected by differences in sample size across the different demographics sub-groups. In addition, these models allow us to model the outcome measures based on the known structure of each task.

Model predictions for new participants provide information on the performance of study participants relative to the normative sample. Percentiles derived from the model tell us, to 1% accuracy, what percentage of individuals within the normative sample also perform with the same score, for participants with the same demographics. Z-scores tell us where the new participant is within the standard normal distribution, in standard deviations from the mean.

Example normative comparison

A participant who is female, aged 40, education up to degree level with PALTEA score 15. This performance matches the performance of 30% of the normative sample of individuals with exactly the same demographics. The corresponding z-score is -0.52, telling us that the individual performs 0.52 standard deviations below the mean of the standard normal representation of our normative sample (with the same demographics).

Implementation

Three normative databases are available for performing normative comparisons. These normative databases have different combinations of demographic information that can be selected.

These are:

- age, gender and education
- age and gender
- age only

The best normative comparison can be made when having information on age, gender and education for each participant. The remaining options cover situations where education or gender may not have been collected.

Age

Whilst participants included in the study can be aged 18-100, the actual age range will vary by participants recruited in each block of data collection, so extrapolation of performance trends is required. Due to the demographic of people using Prolific we generally find that participants fall in the age range 18-75, so we extrapolate performance trends up to the age of 85. Thus, when the maximum age of the normative sample is less than 85, the trend

in performance with age will be used to extrapolate estimated normative performance from the maximum age to 85.

It is important to note that whilst it is possible to compare participants aged over 85 (85 - 100), performance of these participants will be compared to those aged 85.

Level of Education

Level of Education was collected as follows:

- *What is the highest level of educational qualification you have?*
- *Left formal education before age 16*
- *Left formal education at age 16*
- *Left formal education at age 18*
- *Undergraduate degree/Higher National Diploma*
- *Master's degree/Post-Graduate Diploma*
- *PhD*

If you wish to include level of education to your normative comparison, education information should have been collected using the same categorization.

Gender

For this comparison, the categories "Male" and "Female" are used.

Outcome Measures

This chapter contains the full list of outcome measures that are available in CANTAB Connect Research. Please note all outcome measures are calculated from assessed trials only.

Those highlighted in yellow are the recommended outcome measures for each task.

The table below gives a description of the contents of each column in the following Task sections.

Column Name	Description
Task	The 3-letter code name of the task the measure is calculated from
Measure Name	A short code for each outcome measure that is compatible with most statistical analysis packages, for example SPSS
Measure Description	A short summary description for the outcome measure
Description	A general description of the outcome measure and how it is calculated
Sense	An indication of whether higher scores indicate better ("+ve") or worse ("-ve") performance, or if the measure sense is complex ("cx")
Units	The units in which the measure is reported (for example percentage or milliseconds)
Variant Applicability	A list of task variants that the measure is applicable to
Min	The minimum possible score for the measure
Max	The maximum possible score for the measure

Attention Switching Task (AST)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
AST	ASTTC	AST Total Correct	The number of trials for which the outcome was a correct response (subject pressed the correct button within the response window), calculated across all assessed trials.	+ve	-	AST Standard	0	160
AST	ASTTIC	AST Total Incorrect	The number of trials for which the outcome was an incorrect response (subject pressed the incorrect button within the response window), calculated across all assessed trials.	-ve	-	AST Standard	0	160
AST	ASTSWBE	AST Switching Block Errors	The number of trials in assessed block(s) in which the rule is switching, and the trial outcome was an incorrect response.	-ve	-	AST Standard	0	80
AST	ASTNBE	AST Non-Switching Block Errors	The number of trials in assessed block(s) in which the rule is non-switching and the trial outcome was an incorrect response.	-ve	-	AST Standard	0	80
AST	ASTSBE	AST Side Block Errors	The number of trials in assessed block(s) in which the rule is to respond to the side of the screen and the trial outcome was an incorrect response.	-ve	-	AST Standard	0	40
AST	ASTDBE	AST Direction Block Errors	The number of trials in assessed block(s) in which the rule is to respond to the direction of the arrow and the trial outcome was an incorrect response.	-ve	-	AST Standard	0	40
AST	ASTCE	AST Congruent Errors	The number of assessed congruent trials for which the trial outcome was an incorrect response (subject pressed the wrong button).	-ve	-	AST Standard	0	80
AST	ASTICE	AST Incongruent Errors	The number of assessed incongruent trials for which the trial outcome was an incorrect response (subject pressed the wrong button).	-ve	-	AST Standard	0	80
AST	ASTSE	AST Side Errors	The number of assessed trials where the outcome was an incorrect response (subject pressed the wrong button), calculated for trials where the instruction was to respond to the side of the screen.	-ve	-	AST Standard	0	80
AST	ASTDE	AST Direction Errors	The number of assessed trials where the outcome was an incorrect response (subject pressed the wrong button), calculated for trials where the instruction was to respond to the direction of the arrow.	-ve	-	AST Standard	0	80

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
AST	ASTTOE	AST Omission Errors	The number of trials for which the trial outcome was an omission error (no response).	-ve	-	AST Standard	0	160
AST	ASTTCE	AST Commission Errors	The number of trials for which the trial outcome was a commission error (response when no stimulus present)	-ve	-	AST Standard	0	160
AST	ASTLM	AST Reaction Latency (Mean)	The mean latency of response (from stimulus appearance to button press), calculated across all correct, assessed trials.	-ve	ms	AST Standard	100	2000
AST	ASTLMD	AST Reaction Latency (Median)	The median latency of response (from stimulus appearance to button press), calculated across all correct, assessed trials.	-ve	ms	AST Standard	100	2000
AST	ASTLSD	AST Reaction Latency (SD)	The standard deviation of the latency of response (from stimulus appearance to button press), calculated across all correct, assessed trials.	-ve	ms	AST Standard	100	2000
AST	ASTLSWM	AST RL (Mean - Switching Blocks)	The mean latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is switching.	-ve	ms	AST Standard	100	2000
AST	ASTLSWMD	KEY: AST RL (Median – Switching Blocks)	The median latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is switching.	-ve	ms	AST Standard	100	2000
AST	ASTLSWSD	AST RL (SD - Switching Blocks)	The standard deviation of the latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is switching.	-ve	ms	AST Standard	100	2000
AST	ASTLNBM	AST RL (Mean - Non-Switching Blocks)	The mean latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is non-switching.	-ve	ms	AST Standard	100	2000
AST	ASTLNBMD	AST RL (Median - Non-Switching Blocks)	The median latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is non-switching.	-ve	ms	AST Standard	100	2000
AST	ASTLNBSD	AST RL (SD - Non-Switching Blocks)	The standard deviation of the latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is non-switching.	-ve	ms	AST Standard	100	2000

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
AST	ASTLSBM	AST RL (Mean - Side Blocks)	The mean latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is to respond to the side of the screen.	-ve	ms	AST Standard	100	2000
AST	ASTLSBMD	AST RL (Median - Side Blocks)	The median latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is to respond to the side of the screen.	-ve	ms	AST Standard	100	2000
AST	ASTLSBSD	AST RL (SD - Side Blocks)	The standard deviation of the latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is to respond to the side of the screen.	-ve	ms	AST Standard	100	2000
AST	ASTLDBM	AST RL (Mean - Direction Blocks)	The mean latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is to respond to the direction of the arrow.	-ve	ms	AST Standard	100	2000
AST	ASTLDBMD	AST RL (Median - Direction Blocks)	The median latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is to respond to the direction of the arrow.	-ve	ms	AST Standard	100	2000
AST	ASTLDBSD	AST RL (SD - Direction Blocks)	The standard deviation of the latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is to respond to the direction of the arrow.	-ve	ms	AST Standard	100	2000
AST	ASTLCM	AST RL (Mean - Congruent)	The mean latency of response (from stimulus appearance to button press) on congruent trials.	-ve	ms	AST Standard	100	2000
AST	ASTLCMD	KEY: AST RL (Median - Congruent)	The median latency of response (from stimulus appearance to button press) on congruent trials.	-ve	ms	AST Standard	100	2000
AST	ASTLCSD	AST RL (SD - Congruent)	The standard deviation of the latency of response (from stimulus appearance to button press) on congruent trials.	-ve	ms	AST Standard	100	2000
AST	ASTLICM	AST RL (Mean - Incongruent)	The mean latency of response (from stimulus appearance to button press) on incongruent trials.	-ve	ms	AST Standard	100	2000
AST	ASTLICMD	AST RL (Median - Incongruent)	The median latency of response (from stimulus appearance to button press) on incongruent trials.	-ve	ms	AST Standard	100	2000
AST	ASTLICSD	AST RL (SD - Incongruent)	The standard deviation of the latency of response (from stimulus appearance to button press) on incongruent trials.	-ve	ms	AST Standard	100	2000

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
AST	ASTLSDM	AST RL (Mean - Side)	The mean latency of response (from stimulus appearance to button press), calculated for trials where the instruction was to respond to the side of the screen	-ve	ms	AST Standard	100	2000
AST	ASTLSDMD	AST RL (Median – Side)	The median latency of response (from stimulus appearance to button press), calculated for trials where the instruction was to respond to the side of the screen	-ve	ms	AST Standard	100	2000
AST	ASTLSDSD	AST RL (SD - Side)	The standard deviation of the latency of response (from stimulus appearance to button press), calculated for trials where the instruction was to respond to the side of the screen	-ve	ms	AST Standard	100	2000
AST	ASTLDM	AST RL (Mean - Direction)	The mean latency of response (from stimulus appearance to button press), calculated for trials where the instruction was to respond to the direction of the stimulus	-ve	ms	AST Standard	100	2000
AST	ASTLDMD	AST RL (Median - Direction)	The median latency of response (from stimulus appearance to button press), calculated for trials where the instruction was to respond to the direction of the stimulus	-ve	ms	AST Standard	100	2000
AST	ASTLDSD	AST RL (SD - Direction)	The standard deviation of the latency of response (from stimulus appearance to button press), calculated for trials where the instruction was to respond to the direction of the stimulus	-ve	ms	AST Standard	100	2000
AST	ASTCCOST	AST Congruency Cost (Mean)	The difference between the mean latency of response (from stimulus appearance to button press) on the trials that were congruent versus the trials that were incongruent. Calculated by subtracting the mean congruent latency (in ms) from the mean incongruent latency. This measure is complex in sense. Close to zero indicates less variation in latencies across congruent and incongruent trials. A positive score indicates that the subject is faster on congruent trials and a negative score indicates that the subject is faster on incongruent trials.	cx - see description	ms	AST Standard	-1900	1900
AST	ASTCCMD	AST Congruency Cost (Median)	The difference between the median latency of response (from stimulus appearance to button press) on the trials that were congruent versus the trials that were incongruent. Calculated by subtracting the median congruent latency (in ms) from the median incongruent latency. This measure is complex in sense. Close to zero indicates less variation in latencies across congruent and incongruent trials. A positive score indicates that the subject is faster on congruent trials and a negative score indicates that the subject is faster on incongruent trials.	cx - see description	ms	AST Standard	-1900	1900

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
AST	ASTSWCM	AST Switching Cost (Mean)	The difference between the mean latency of response (from stimulus appearance to button press) during assessed blocks in which the rule is switching versus assessed blocks in which the rule remains constant. Calculated by subtracting the mean latency of response during non-switching block(s) from the mean latency of response during switching block(s). This measure is complex in sense. Close to zero indicates less variation in latencies across non-switch and switch trials. A positive score indicates that the subject responds more quickly in non-switching block(s).	cx - see description	ms	AST Standard	-1900	1900
AST	ASTSWCMD	AST Switching Cost (Median)	The difference between the median latency of response (from stimulus appearance to button press) during assessed blocks in which the rule is switching versus assessed blocks in which the rule remains constant. Calculated by subtracting the median latency of response during non-switching block(s) from the median latency of response during switching block(s). This measure is complex in sense. Close to zero indicates less variation in latencies across non-switch and switch trials. A positive score indicates that the subject responds more quickly in non-switching block(s).	cx - see description	ms	AST Standard	-1900	1900

CAMBRIDGE COGNITION

Cambridge Gambling Task (CGT)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTDMQMT	KEY: Decision Making Quality Total Merged	The proportion (0.0-1.0) of trials where the subject chose the majority box colour, calculated by dividing the number of trials where the subject chose the majority box colour by the total number of trials. Calculated over all assessed trials from both the ascending and descending conditions in which the number of boxes of each colour differed.	+ve	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	1
CGT	CGTDMQAT	CGT Decision Making Quality Total Ascending	The proportion (0.0-1.0) of trials in the ascending condition where the subject chose the majority box colour, calculated by dividing the number of ascending trials where the subject chose the majority box colour by the total number of ascending trials. Calculated over all assessed trials from the ascending condition in which the number of boxes of each colour differed.	+ve	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	1
CGT	CGTDMQDT	CGT Decision Making Quality Total Descending	The proportion (0.0-1.0) of trials in the descending condition where the subject chose the majority box colour, calculated by dividing the number of descending trials where the subject chose the majority box colour by the total number of descending trials. Calculated over all assessed trials from the descending condition in which the number of boxes of each colour differed.	+ve	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	1
CGT	CGTDMQA9	CGT Decision Making Quality (9:1) Ascending	The proportion (0.0-1.0) of all trials in the ascending condition where the subject chose the majority box colour, calculated over applicable trials where the subject chose the majority box colour over all applicable trials. Applicable trials are those from the ascending condition in which the number of boxes of each colour had the ratio 9:1.	+ve	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	1
CGT	CGTDMQA8	CGT Decision Making Quality (8:2) Ascending	The proportion (0.0-1.0) of all trials in the ascending condition where the subject chose the majority box colour, calculated over applicable trials where the subject chose the majority box colour over all applicable trials. Applicable trials are those from the ascending condition in which the number of boxes of each colour had the ratio 8:2.	+ve	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	1

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTDMQA7	CGT Decision Making Quality (7:3) Ascending	The proportion (0.0-1.0) of all trials in the ascending condition where the subject chose the majority box colour, calculated over applicable trials where the subject chose the majority box colour over all applicable trials. Applicable trials are those from the ascending condition in which the number of boxes of each colour had the ratio 7:3.	+ve	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	1
CGT	CGTDMQA6	CGT Decision Making Quality (6:4) Ascending	The proportion (0.0-1.0) of all trials in the ascending condition where the subject chose the majority box colour, calculated over applicable trials where the subject chose the majority box colour over all applicable trials. Applicable trials are those from the ascending condition in which the number of boxes of each colour had the ratio 6:4.	+ve	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	1
CGT	CGTDMQD9	CGT Decision Making Quality (9:1) Descending	The proportion (0.0-1.0) of all trials in the descending condition where the subject chose the majority box colour, calculated over applicable trials where the subject chose the majority box colour over all applicable trials. Applicable trials are those from the descending condition in which the number of boxes of each colour had the ratio 9:1.	+ve	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	1
CGT	CGTDMQD8	CGT Decision Making Quality (8:2) Descending	The proportion (0.0-1.0) of all trials in the descending condition where the subject chose the majority box colour, calculated over applicable trials where the subject chose the majority box colour over all applicable trials. Applicable trials are those from the descending condition in which the number of boxes of each colour had the ratio 8:2.	+ve	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	1
CGT	CGTDMQD7	CGT Decision Making Quality (7:3) Descending	The proportion (0.0-1.0) of all trials in the descending condition where the subject chose the majority box colour, calculated over applicable trials where the subject chose the majority box colour over all applicable trials. Applicable trials are those from the descending condition in which the number of boxes of each colour had the ratio 7:3.	+ve	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	1
CGT	CGTDMQD6	CGT Decision Making Quality (6:4) Descending	The proportion (0.0-1.0) of all trials in the descending condition where the subject chose the majority box colour, calculated over applicable trials where the subject chose the majority box colour over all applicable trials. Applicable trials are those from the descending condition in which the number of boxes of each colour had the ratio 6:4.	+ve	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	1

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTDMMT	CGT Mean Decision Time Total Merged	The mean time taken for a subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from both the ascending and descending conditions.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMAT	CGT Mean Decision Time Total Ascending	The mean time taken for a subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the ascending condition.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMDT	CGT Mean Decision Time Total Descending	The mean time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the descending condition.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMA9	CGT Mean Decision Time (9:1) Ascending	The mean time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the ascending condition in which the number of boxes of each colour had the ratio 9:1.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMA8	CGT Mean Decision Time (8:2) Ascending	The mean time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the ascending condition in which the number of boxes of each colour had the ratio 8:2.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMA7	CGT Mean Decision Time (7:3) Ascending	The mean time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the ascending condition in which the number of boxes of each colour had the ratio 7:3.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTDMA6	CGT Mean Decision Time (6:4) Ascending	The mean time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the ascending condition in which the number of boxes of each colour had the ratio 6:4.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMA5	CGT Mean Decision Time (5:5) Ascending	The mean time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the ascending condition in which the number of boxes of each colour had the ratio 5:5.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMD9	CGT Mean Decision Time (9:1) Descending	The mean time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the descending condition in which the number of boxes of each colour had the ratio 9:1.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMD8	CGT Mean Decision Time (8:2) Descending	The mean time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the descending condition in which the number of boxes of each colour had the ratio 8:2.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMD7	CGT Mean Decision Time (7:3) Descending	The mean time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the descending condition in which the number of boxes of each colour had the ratio 7:3.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMD6	CGT Mean Decision Time (6:4) Descending	The mean time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the descending condition in which the number of boxes of each colour had the ratio 6:4.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTDMD5	CGT Mean Decision Time (5:5) Descending	The mean time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the descending condition in which the number of boxes of each colour had the ratio 5:5.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMDMT	CGT Median Decision Time Total Merged	The median time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from both the ascending and descending condtion.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMDAT	CGT Median Decision Time Total Ascending	The median time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the ascending condition.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMDDT	CGT Median Decision Time Total Descending	The median time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over all assessed trials from the descending condition.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMDA9	CGT Median Decision Time (9:1) Ascending	The median time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over assessed trials from the ascending condition in which the number of boxes of each colour had the ratio 9:1.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMDA8	CGT Median Decision Time (8:2) Ascending	The median time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over assessed trials from the ascending condition in which the number of boxes of each colour had the ratio 8:2.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTDMDA7	CGT Median Decision Time (7:3) Ascending	The median time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over assessed trials from the ascending condition in which the number of boxes of each colour had the ratio 7:3.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMDA6	CGT Median Decision Time (6:4) Ascending	The median time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over assessed trials from the ascending condition in which the number of boxes of each colour had the ratio 6:4.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMDA5	CGT Median Decision Time (5:5) Ascending	The median time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over assessed trials from the ascending condition in which the number of boxes of each colour had the ratio 5:5.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMDD9	CGT Median Decision Time (9:1) Descending	The median time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over assessed trials from the descending condition in which the number of boxes of each colour had the ratio 9:1.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMDD8	CGT Median Decision Time (8:2) Descending	The median time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over assessed trials from the descending condition in which the number of boxes of each colour had the ratio 8:2.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMDD7	CGT Median Decision Time (7:3) Descending	The median time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over assessed trials from the descending condition in which the number of boxes of each colour had the ratio 7:3.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTDMDD6	CGT Median Decision Time (6:4) Descending	The median time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over assessed trials from the descending condition in which the number of boxes of each colour had the ratio 6:4.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTDMDD5	CGT Median Decision Time (5:5) Descending	The median time taken for the subject to select the colour on which to bet after presentation of the boxes. Calculated over assessed trials from the descending condition in which the number of boxes of each colour had the ratio 5:5.	-ve	ms	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0	∞
CGT	CGTRTKMT	CGT Risk Taking Total Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the number of boxes of each colour differed and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTRTKAT	CGT Risk Taking Total Ascending	The The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials in the ascending condition in which the number of boxes of each colour differed and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTRTKDT	CGT Risk Taking Total Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials in the descending condition in which the number of boxes of each colour differed and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTRTKA9	CGT Risk Taking (9:1) Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition in which the number of boxes each colour had the ratio 9:1 and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTRTKA8	CGT Risk Taking (8:2) Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition in which the number of boxes each colour had the ratio 8:2 and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTRTKA7	CGT Risk Taking (7:3) Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition in which the number of boxes each colour had the ratio 7:3 and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTRTKA6	CGT Risk Taking (6:4) Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition in which the number of boxes each colour had the ratio 6:4 and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTRTKD9	CGT Risk Taking (9:1) Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition in which the number of boxes each colour had the ratio 9:1 and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTRTKD8	CGT Risk Taking (8:2) Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition in which the number of boxes each colour had the ratio 8:2 and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTRTKD7	CGT Risk Taking (7:3) Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition in which the number of boxes each colour had the ratio 7:3 and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTRTKD6	CGT Risk Taking (6:4) Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition in which the number of boxes each colour had the ratio 6:4 and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTRTKM9	CGT Risk Taking (9:1) Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the number of boxes each colour had the ratio 9:1 and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTRTKM8	CGT Risk Taking (8:2) Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the number of boxes each colour had the ratio 8:2 and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTRTKM7	CGT Risk Taking (7:3) Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the number of boxes each colour had the ratio 7:3 and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTRTKM6	CGT Risk Taking (6:4) Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the number of boxes each colour had the ratio 6:4 and the subject chose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTOPBMT	CGT Overall Proportion Bet Total Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions, including those where the subject did not choose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBAT	CGT Overall Proportion Bet Total Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition, including those where the subject did not choose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBDT	CGT Overall Proportion Bet Total Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition, including those where the subject did not choose the majority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBA9	CGT Overall Proportion Bet (9:1) Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition in which the ratio between the colours was 9:1.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBA8	CGT Overall Proportion Bet (8:2) Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition in which the ratio between the colours was 8:2.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBA7	CGT Overall Proportion Bet (7:3) Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition in which the ratio between the colours was 7:3.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTOPBA6	CGT Overall Proportion Bet (6:4) Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition in which the ratio between the colours was 6:4.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBA5	CGT Overall Proportion Bet (5:5) Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition in which the ratio between the colours was 5:5.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBA4	CGT Overall Proportion Bet (4:6) Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition in which the ratio between the colours was 6:4, and the subject chose the minority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBA3	CGT Overall Proportion Bet (3:7) Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition in which the ratio between the colours was 7:3, and the subject chose the minority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBA2	CGT Overall Proportion Bet (2:8) Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition in which the ratio between the colours was 8:2, and the subject chose the minority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBA1	CGT Overall Proportion Bet (1:9) Ascending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the ascending condition in which the ratio between the colours was 9:1, and the subject chose the minority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTOPBD9	CGT Overall Proportion Bet (9:1) Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition in which the ratio between the colours was 9:1.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBD8	CGT Overall Proportion Bet (8:2) Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition in which the ratio between the colours was 8:2.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBD7	CGT Overall Proportion Bet (7:3) Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition in which the ratio between the colours was 7:3.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBD6	CGT Overall Proportion Bet (6:4) Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition in which the ratio between the colours was 6:4.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBD5	CGT Overall Proportion Bet (5:5) Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition in which the ratio between the colours was 5:5.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBD4	CGT Overall Proportion Bet (4:6) Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition in which the ratio between the colours was 4:6, and the subject chose the minority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTOPBD3	CGT Overall Proportion Bet (3:7) Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition in which the ratio between the colours was 3:7, and the subject chose the minority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBD2	CGT Overall Proportion Bet (2:8) Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition in which the ratio between the colours was 2:8, and the subject chose the minority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBD1	CGT Overall Proportion Bet (1:9) Descending	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from the descending condition in which the ratio between the colours was 1:9, and the subject chose the minority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBM9	CGT Overall Proportion Bet (9:1) Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the ratio between the colours was 9:1.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBM8	CGT Overall Proportion Bet (8:2) Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the ratio between the colours was 8:2.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBM7	CGT Overall Proportion Bet (7:3) Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the ratio between the colours was 7:3.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTOPBM6	CGT Overall Proportion Bet (6:4) Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the ratio between the colours was 6:4.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBM5	CGT Overall Proportion Bet (5:5) Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the ratio between the colours was 5:5.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBM4	CGT Overall Proportion Bet (4:6) Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the ratio between the colours was 4:6, and the subject chose the minority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBM3	CGT Overall Proportion Bet (3:7) Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the ratio between the colours was 3:7, and the subject chose the minority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTOPBM2	CGT Overall Proportion Bet (2:8) Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the ratio between the colours was 2:8, and the subject chose the minority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTOPBM1	CGT Overall Proportion Bet (1:9) Merged	The mean proportion (0.0-1.0) of current points gambled by the subject, calculated by dividing the number of points gambled by the subject in a trial by the number of points they held at the start of that trial. Calculated over all assessed trials from both the ascending and descending conditions in which the ratio between the colours was 1:9, and the subject chose the minority box colour.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0.05	0.95
CGT	CGTRAJTM	CGT KEY: Risk Adjustment Merged	Risk adjustment is a measure of sensitivity to risk, based on the ability to modify choices when given information about the probability of different outcomes and to track the optimal outcome on each trial. The measure is calculated from the mean proportion of points that the subject chose to bet with, taking into account the number of coloured boxes in the majority.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	-5.4	5.4
CGT	CGTRAJTA	CGT Risk Adjustment Ascending	Risk adjustment is a measure of sensitivity to risk, based on the ability to modify choices when given information about the probability of different outcomes and to track the optimal outcome on each trial. The measure is calculated from the mean proportion of points that the subject chose to bet with, taking into account the number of coloured boxes in the majority, derived from all trials in the ascending condition.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	-5.4	5.4
CGT	CGTRAJTD	CGT Risk Adjustment Descending	Risk adjustment is a measure of sensitivity to risk, based on the ability to modify choices when given information about the probability of different outcomes and to track the optimal outcome on each trial. The measure is calculated from the mean proportion of points that the subject chose to bet with, taking into account the number of coloured boxes in the majority, derived from all trials in the descending condition.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	-5.4	5.4
CGT	CGTDAVT	CGT KEY: Delay Aversion Total	Calculated by subtracting CGT Risk Taking for all trials from the ascending condition from CGT Risk Taking for all trials from the descending condition. A high score suggests high impulsivity. Allows for the dissociation of impulsivity from risk taking by determining whether a subject simply places a bet at the first opportunity.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	-0.9	0.9

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
CGT	CGTDAV9	CGT Delay Aversion 9:1	Calculated by subtracting CGT Risk Taking for all trials from the ascending condition with a 9:1 ratio from CGT Risk Taking for all trials from the descending condition with a 9:1 ratio. A high score suggests high impulsivity. Allows for the dissociation of impulsivity from risk taking by determining whether a subject simply places a bet at the first opportunity.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	-0.9	0.9
CGT	CGTDAV8	CGT Delay Aversion 8:2	Calculated by subtracting CGT Risk Taking for all trials from the ascending condition with a 8:2 ratio from CGT Risk Taking for all trials from the descending condition with a 8:2 ratio. A high score suggests high impulsivity. Allows for the dissociation of impulsivity from risk taking by determining whether a subject simply places a bet at the first opportunity.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	-0.9	0.9
CGT	CGTDAV7	CGT Delay Aversion 7:3	Calculated by subtracting CGT Risk Taking for all trials from the ascending condition with a 7:3 ratio from CGT Risk Taking for all trials from the descending condition with a 7:3 ratio. A high score suggests high impulsivity. Allows for the dissociation of impulsivity from risk taking by determining whether a subject simply places a bet at the first opportunity.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	-0.9	0.9
CGT	CGTDAV6	CGT Delay Aversion 6:4	Calculated by subtracting CGT Risk Taking for all trials from the ascending condition with a 6:4 ratio from CGT Risk Taking for all trials from the descending condition with a 6:4 ratio. A high score suggests high impulsivity. Allows for the dissociation of impulsivity from risk taking by determining whether a subject simply places a bet at the first opportunity.	cx	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	-0.9	0.9
CGT	CGTTCB	CGT Total Blocks Completed	The total number of assessed blocks completed by the subject. This excludes trials which the subject terminated early.	+ve	-	CGT Ascending / Descending First CGT Ascending / Descending First Shortened	0 0	4 2

Digit Span (DGS)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
DGS	DGSFDIRE	DGS Direction Forwards	The order (direction) the subject is required to repeat the sequence of digits when prompted by a voice cue.	N/A - The only output will be 'FORWARDS' or blank	-	Forwards 2 Attempts Recommended Standard Forwards 3 Attempts	-	-
DGS	DGSFMAXS	DGS Maximum Span Reached Forwards	The longest sequence problem successfully reached (but not necessarily passed) by the subject.	+ve	-	Forwards 2 Attempts Recommended Standard Forwards 3 Attempts	0	9
DGS	DGSFMAXP	DGS Maximum Span Passed Forwards	Recommended: The longest sequence problem successfully reached and passed by the subject.	+ve	-	Forwards 2 Attempts Recommended Standard Forwards 3 Attempts	0	9
DGS	DGSFATTS	DGS Number of Attempts Forwards	The total number of attempts made by a subject across all spans reached.	-ve	-	Forwards 2 Attempts	0	18
DGS	DGSFATTS	DGS Number of Attempts Forwards	The total number of attempts made by a subject across all spans reached.	-ve	-	Recommended Standard Forwards 3 Attempts	0	27
DGS	DGSBDIRE	DGS Direction Backwards	The order (direction) the subject is required to repeat the sequence of digits when prompted by a voice cue.	N/A - The only output will be 'BACKWARDS' or blank	-	Backwards 2 Attempts Recommended Standard Backwards 3 Attempts	-	-

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
DGS	DGSBMAXS	DGS Maximum Span Reached Backwards	The longest sequence problem successfully reached (but not necessarily passed) by the subject.	+ve	-	Backwards 2 Attempts Recommended Standard Backwards 3 Attempts	0	9
DGS	DGSBMAXP	DGS Maximum Span Passed Backwards	Recommended: The longest sequence problem successfully reached and passed by the subject.	+ve	-	Backwards 2 Attempts Recommended Standard Backwards 3 Attempts	0	9
DGS	DGSBATTS	DGS Number of Attempts Backwards	The total number of attempts made by a subject across all spans reached.	-ve	-	Backwards 2 Attempts	0	18
DGS	DGSBATTS	DGS Number of Attempts Backwards	The total number of attempts made by a subject across all spans reached.	-ve	-	Recommended Standard Backwards 3 Attempts	0	27

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Delayed Match to Sample (DMS)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
DMS	DMSTC	DMS Total Correct	The total number of times a subject chose the correct answer on their first box choice. Calculated across all assessed trials (simultaneous presentation and all delays).	+ve	-	Recommended Standard	0	20
DMS	DMSTCAD	DMS Total Correct (All Delays)	The total number of times a subject chose the correct answer on their first box choice for all trials where the response stimuli were presented after a delay. Calculated across all assessed trials containing a delay.	+ve	-	Recommended Standard	0	15
DMS	DMSTCS	DMS Total Correct (Simultaneous)	The total number of times a subject chose the correct answer on their first box choice for trials where the target stimulus and response stimuli appeared on screen simultaneously. Calculated across all assessed trials that included a simultaneous presentation (no delay) of target and response stimuli.	+ve	-	Recommended Standard	0	5
DMS	DMSTC0	DMS Total Correct (0 Second Delay)	The total number of times a subject chose the correct answer on their first box choice for trials where the response stimuli appeared on screen after a 0 second delay after the target stimulus was shown. Calculated across all assessed trials which contained a delay of zero seconds.	+ve	-	Recommended Standard	0	5
DMS	DMSTC4	DMS Total Correct (4 Second Delay)	The total number of times a subject chose the correct answer on their first box choice for trials where the response stimuli appeared on screen after a 4 second delay after the target stimulus was shown. Calculated across all assessed trials which contained a delay of four seconds.	+ve	-	Recommended Standard	0	5
DMS	DMSTC12	DMS Total Correct (12 Second Delay)	The total number of times a subject chose the correct answer on their first box choice for trials where the response stimuli appeared on screen after a 12 second delay after the target stimulus was shown. Calculated across all assessed trials which contained a delay of twelve seconds.	+ve	-	Recommended Standard	0	5
DMS	DMSPC	DMS Percent Correct	The percentage of assessment trials during which the subject chose the correct box on their first box choice. Calculated across all assessed trials (simultaneous presentation and all delays).	+ve	%	Recommended Standard	0	100
DMS	DMSPCAD	KEY: DMS Percent Correct (All Delays)	The percentage of assessment trials containing a delay during which the subject chose the correct box on their first box choice. Calculated across all assessed trials containing a delay.	+ve	%	Recommended Standard	0	100

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
DMS	DMSPCS	KEY: DMS Percent Correct (Simultaneous)	The percentage of assessment trials where the target and response stimuli were presented simultaneously during which the subject chose the correct box on their first box choice. Calculated across all assessed trials containing the simultaneous presentation of stimuli.	+ve	%	Recommended Standard	0	100
DMS	DMSPC0	KEY: DMS Percent Correct (0 Second Delay)	The percentage of assessment trials containing a zero second delay during which the subject chose the correct box on their first box choice. Calculated across all assessed trials containing a zero second delay.	+ve	%	Recommended Standard	0	100
DMS	DMSPC4	KEY: DMS Percent Correct (4 Second Delay)	The percentage of assessment trials containing a four second delay during which the subject chose the correct box on their first box choice. Calculated across all assessed trials containing a four second delay.	+ve	%	Recommended Standard	0	100
DMS	DMSPC12	KEY: DMS Percent Correct (12 Second Delay)	The percentage of assessment trials containing a twelve second delay during which the subject chose the correct box on their first box choice. Calculated across all assessed trials containing a twelve second delay.	+ve	%	Recommended Standard	0	100
DMS	DMSTE	DMS Total Errors	The total number of times a subject failed to choose the correct box on their first selection, thus making an error. Calculated across all assessed trials (simultaneous and all delays) regardless of which incorrect box (out of the 3 possible incorrect boxes) was chosen.	-ve	-	Recommended Standard	0	20
DMS	DMSTEC	DMS Error (Incorrect Color)	The number of times that the subject failed to select the correct box on their first selection, and instead chose the distractor stimulus that contained the same pattern/ physical attributes, but different colours. Calculated across all assessed trials (simultaneous and all delays).	-ve	-	Recommended Standard	0	20
DMS	DMSTEP	DMS Error (Incorrect Pattern)	The number of times that the subject failed to select the correct box on their first selection, and instead chose the distractor stimulus that contained the same colour elements, but different pattern/ physical attributes. Calculated across all assessed trials (simultaneous and all delays).	-ve	-	Recommended Standard	0	20
DMS	DMSTED	DMS Error (Distractor)	The number of times that the subject failed to select the correct box on their first selection, and instead chose the distractor stimulus that contained no common elements to the original target stimulus. Calculated across all assessed trials (simultaneous and all delays).	-ve	-	Recommended Standard	0	20

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
DMS	DMSTEAD	DMS Total Errors (All Delays)	The total number of times a subject failed to choose the correct box on their first selection for any trial containing a delay between the presentation of the target stimulus and response stimuli. Calculated across all assessed trials containing a delay component.	-ve	-	Recommended Standard	0	15
DMS	DMSTECAD	DMS Error (All Delays, Incorrect color)	The number of times that the subject failed to select the correct box on their first selection, and instead chose the distractor stimulus that contained the same color elements, but different physical attributes. Calculated across all assessed trials which contained a delay component.	-ve	-	Recommended Standard	0	15
DMS	DMSTEPAD	DMS Error (All Delays, Incorrect Pattern)	The number of times that the subject failed to select the correct box on their first selection, and instead chose the distractor stimulus that contained the same pattern/ physical attributes, but different color elements. Calculated across all assessed trials which contained a delay component.	-ve	-	Recommended Standard	0	15
DMS	DMSTEDAD	DMS Error (All Delays, Distractor)	The number of times that the subject failed to select the correct box on their first selection, and instead chose the distractor stimulus that contained no common elements to the original target stimulus. Calculated across all assessed trials which contained a delay component.	-ve	-	Recommended Standard	0	15
DMS	DMSML	DMS Mean Correct Latency	The mean latency between the presentation of the response stimuli options and the subject selecting the correct box on their first attempt. Calculated across all correct assessed trials (simultaneous and all delays).	-ve	ms	Recommended Standard	0	∞
DMS	DMSMDL	DMS Median Correct Latency	The median latency between the presentation of the response stimuli options and the subject selecting the correct box on their first attempt. Calculated across all correct assessed trials (simultaneous and all delays).	-ve	ms	Recommended Standard	0	∞
DMS	DMSLSD	DMS Correct Latency Standard Deviation (SD)	The standard deviation of response latencies for trials where subjects selected the correct box on their first attempt. Calculated across all correct assessed trials (simultaneous and all delays).	-ve	ms	Recommended Standard	0	∞
DMS	DMSMLAD	DMS Mean Correct Latency (All Delays)	The mean latency between the presentation of the response stimuli options and the subject selecting the correct box on their first attempt. Calculated across all assessed trials containing a delay.	-ve	ms	Recommended Standard	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
DMS	DMSMDLAD	DMS Median Correct Latency (All Delays)	The median latency between the presentation of the response stimuli options and the subject selecting the correct box on their first attempt. Calculated across all assessed trials containing a delay.	-ve	ms	Recommended Standard	0	∞
DMS	DMSLADSD	DMS Correct Latency Standard Deviation (SD) (All Delays)	The standard deviation of response latencies between the presentation of target stimulus and response stimuli, where subjects selected the correct box on their first attempt. Calculated across all assessed trials containing a delay.	-ve	ms	Recommended Standard	0	∞
DMS	DMSMLS	DMS Mean Correct Latency (Simultaneous)	The mean latency between the presentation of the response stimuli options and the subject selecting the correct box on their first attempt. Calculated across all assessed trials containing simultaneous presentation.	-ve	ms	Recommended Standard	0	∞
DMS	DMSMDLS	DMS Median Correct Latency (Simultaneous)	The median latency between the presentation of the response stimuli options and the subject selecting the correct box on their first attempt. Calculated across all assessed trials containing simultaneous presentation.	-ve	ms	Recommended Standard	0	∞
DMS	DMSLSSD	DMS Correct Latency Standard Deviation (SD) (Simultaneous)	The standard deviation of response latencies where subjects selected the correct box on their first attempt. Calculated across all assessed trials containing simultaneous presentations.	-ve	ms	Recommended Standard	0	∞
DMS	DMSML0	DMS Mean Correct Latency (0 Second Delay)	The mean latency between the presentation of the response stimuli options and the subject selecting the correct box on their first attempt. Calculated across all assessed trials containing a zero second delay.	-ve	ms	Recommended Standard	0	∞
DMS	DMSMDL0	DMS Median Correct Latency (0 Second Delay)	The median latency between the presentation of the response stimuli options and the subject selecting the correct box on their first attempt. Calculated across all assessed trials containing a zero second delay.	-ve	ms	Recommended Standard	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
DMS	DMSL0SD	DMS Correct Latency Standard Deviation (SD) (0 Second Delay)	The standard deviation of response latencies where subjects selected the correct box on their first attempt. Calculated across all assessed trials containing a zero second delay.	-ve	ms	Recommended Standard	0	∞
DMS	DMSML4	DMS Mean Correct Latency (4 Second Delay)	The mean latency between the presentation of the response stimuli options and the subject selecting the correct box on their first attempt. Calculated across all assessed trials containing a four second delay.	-ve	ms	Recommended Standard	0	∞
DMS	DMSMDL4	DMS Median Correct Latency (4 Second Delay)	The median latency between the presentation of the response stimuli options and the subject selecting the correct box on their first attempt. Calculated across all assessed trials containing a four second delay.	-ve	ms	Recommended Standard	0	∞
DMS	DMSL4SD	DMS Correct Latency Standard Deviation (SD) (4 Second Delay)	The standard deviation of response latencies where subjects selected the correct box on their first attempt. Calculated across all assessed trials containing a four second delay.	-ve	ms	Recommended Standard	0	∞
DMS	DMSML12	DMS Mean Correct Latency (12 Second Delay)	The mean latency between the presentation of the response stimuli options and the subject selecting the correct box on their first attempt. Calculated across all assessed trials containing a twelve second delay.	-ve	ms	Recommended Standard	0	∞
DMS	DMSMDL12	DMS Median Correct Latency (12 Second Delay)	The median latency between the presentation of the response stimuli options and the subject selecting the correct box on their first attempt. Calculated across all assessed trials containing a twelve second delay.	-ve	ms	Recommended Standard	0	∞
DMS	DMSL12SD	DMS Correct Latency Standard Deviation (SD) (12 Second Delay)	The standard deviation of response latencies where subjects selected the correct box on their first attempt. Calculated across all assessed trials containing a twelve second delay.	-ve	ms	Recommended Standard	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
DMS	DMSCC	DMS Mean Choices to Correct	The mean number of choices that the subject made on each trial, including the correct choice. Calculated across all trials where the subject eventually made the correct choice (simultaneous and all delays).	-ve	-	Recommended Standard	0	4
DMS	DMSPEGC	DMS Probability of Error Given Correct	This measure reports the probability of an error occurring when the previous trial was responded to correctly. Calculated across all assessed trials (simultaneous and all delays).	-ve	-	Recommended Standard	0	1
DMS	DMSPEGE	KEY: DMS Probability of Error Given Error	This measure reports the probability that a subject's initial choice will be incorrect given that their initial box choice on the immediately preceding trial was incorrect. Calculated across all assessed trials (simultaneous and all delays).	-ve	-	Recommended Standard	0	1

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Digit Symbol Substitution Task (DST)

Note: Whilst we do not have any 'KEY' outcome measures for the below task, the measures highlighted green are those that tend to be recommended as endpoints for the majority of studies.

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
DST	DSTTC	DST Total Correct	The total number of trials that the participant got correct during the assessed phase.	+ve	-	DST Draw 90s	0	∞
						DST Draw 90s No Tutorial	0	∞
DST	DSTTI	DST Total Incorrect	The total number of trials that the participant got incorrect during the assessed phase.	-ve	-	DST Draw 90s	0	∞
						DST Draw 90s No Tutorial	0	∞
DST	DSTCMLM	DST Correct Movement Latency Mean	The mean time taken by the participant to draw their response once their finger has touched the screen to begin drawing. Calculated across correct assessed problems only.	-ve	ms	DST Draw 90s	1	90000
						DST Draw 90s No Tutorial	1	90000
DST	DSTCMLSD	DST Correct Movement Latency Standard Deviation	The standard deviation of the time taken by the participant to draw their response once their finger has touched the screen to begin drawing. Calculated across correct assessed problems only.	-ve	ms	DST Draw 90s	1	90000
						DST Draw 90s No Tutorial	1	90000
DST	DSTIMLM	DST Incorrect Movement Latency Mean	The mean time taken by the participant to draw their response once their finger has touched the screen to begin drawing. Calculated across incorrect assessed problems only.	-ve	ms	DST Draw 90s	1	90000
						DST Draw 90s No Tutorial	1	90000
DST	DSTIMLSD	DST Incorrect Movement Latency Standard Deviation	The standard deviation of the time taken by the participant to draw their response once their finger has touched the screen to begin drawing. Calculated across incorrect assessed problems only.	-ve	ms	DST Draw 90s	1	90000
						DST Draw 90s No Tutorial	1	90000

DST	DSTCRLM	DST Correct Response Latency Mean	The mean of the reaction time between the presentation of the target digit and the participant touching the screen to begin drawing. This is a measure of the latency between target cue and participant motor initiation. Calculated across all correct assessed trials.	-ve	ms	DST Draw 90s	1	90000
						DST Draw 90s No Tutorial	1	90000
DST	DSTCRLSD	DST Correct Response Latency Standard Deviation	The standard deviation of the reaction time between the presentation of the target digit and the participant touching the screen to begin drawing. This is a measure of the latency between target cue and participant motor initiation. Calculated across all correct assessed trials.	-ve	ms	DST Draw 90s	1	90000
						DST Draw 90s No Tutorial	1	90000
DST	DSTIRLM	DST Incorrect Response Latency Mean	The mean of the reaction time between the presentation of the target digit and the participant touching the screen to begin drawing. This is a measure of the latency between target cue and participant motor initiation. Calculated across all incorrect assessed trials.	-ve	ms	DST Draw 90s	1	90000
						DST Draw 90s No Tutorial	1	90000
DST	DSTIRLSD	DST Incorrect Response Latency Standard Deviation	The standard deviation of the reaction time between the presentation of the target digit and the participant touching the screen to begin drawing. This is a measure of the latency between target cue and participant motor initiation. Calculated across all incorrect assessed trials.	-ve	ms	DST Draw 90s	1	90000
						DST Draw 90s No Tutorial	1	90000

Emotional Bias Task (EBT)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
EBT	EBTRTMDT	EBT Median Reaction Time Total	The median reaction time between the emotion response buttons being presented and a selection being made, calculated across all assessed trials.	-ve	ms	EBT Happy-Sad EBT Happy-Sad (Caucasian) EBT Happy-Sad (South Asian) EBT Happy-Disgust EBT Happy-Disgust (Caucasian) EBT Happy-Angry EBT Happy-Angry (Caucasian) EBT Happy-Angry (South Asian)	0	∞
EBT	EBTRTMNT	EBT Mean Reaction Time Total	The mean reaction time between the emotion response buttons being presented and a selection being made, calculated across all assessed trials.	-ve	ms	EBT Happy-Sad EBT Happy-Sad (Caucasian) EBT Happy-Sad (South Asian) EBT Happy-Disgust EBT Happy-Disgust (Caucasian) EBT Happy-Angry EBT Happy-Angry (Caucasian)	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
						EBT Happy-Angry (South Asian)		
EBT	EBTRTSDT	EBT Standard Deviation Reaction Time Total	The standard deviation of the reaction time between the emotion response buttons being presented and a selection being made, calculated across all assessed trials.	-ve	ms	EBT Happy-Sad EBT Happy-Sad (Caucasian) EBT Happy-Sad (South Asian) EBT Happy-Disgust EBT Happy-Disgust (Caucasian) EBT Happy-Angry EBT Happy-Angry (Caucasian) EBT Happy-Angry (South Asian)	0	∞
EBT	EBTRTMDH	EBT Median Reaction Time Happy	The median reaction time for selecting the option 'Happy' across all assessed trials.	-ve	ms	EBT Happy-Sad EBT Happy-Sad (Caucasian) EBT Happy-Sad (South Asian) EBT Happy-Disgust EBT Happy-Disgust (Caucasian) EBT Happy-Angry EBT Happy-Angry (Caucasian)	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
						EBT Happy-Angry (South Asian)		
EBT	EBTRTMNH	EBT Mean Reaction Time Happy	The mean reaction time for selecting the option 'Happy' across all assessed trials.	-ve	ms	EBT Happy-Sad EBT Happy-Sad (Caucasian) EBT Happy-Sad (South Asian) EBT Happy-Disgust EBT Happy-Disgust (Caucasian) EBT Happy-Angry EBT Happy-Angry (Caucasian) EBT Happy-Angry (South Asian)	0	∞
EBT	EBTRTSDH	EBT Standard Deviation Reaction Time Happy	The standard deviation of the reaction time for selecting the option 'Happy' across all assessed trials.	-ve	ms	EBT Happy-Sad EBT Happy-Sad (Caucasian) EBT Happy-Sad (South Asian) EBT Happy-Disgust EBT Happy-Disgust (Caucasian) EBT Happy-Angry EBT Happy-Angry (Caucasian)	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
						EBT Happy-Angry (South Asian)		
EBT	EBTRTMDS	EBT Median Reaction Time Sad	The median reaction time for selecting the option 'Sad' across all assessed trials.	-ve	-	EBT Happy-Sad EBT Happy-Sad (Caucasian) EBT Happy-Sad (South Asian)	0	∞
EBT	EBTRTMNS	EBT Mean Reaction Time Sad	The mean reaction time for selecting the option 'Sad' across all assessed trials.	-ve	-	EBT Happy-Sad EBT Happy-Sad (Caucasian) EBT Happy-Sad (South Asian)	0	∞
EBT	EBTRTSDS	EBT Standard Deviation Reaction Time Sad	The standard deviation of the reaction time for selecting the option 'Sad' across all assessed trials.	-ve	ms	EBT Happy-Sad EBT Happy-Sad (Caucasian) EBT Happy-Sad (South Asian)	0	∞
EBT	EBTRCH	EBT Response Count Happy	The number of times the option 'Happy' is selected across all assessed trials.	Higher scores indicate that the participant selected 'Happy' more often	ms	EBT Happy-Sad EBT Happy-Sad (Caucasian) EBT Happy-Sad (South Asian) EBT Happy-Disgust EBT Happy-Disgust (Caucasian) EBT Happy-Angry EBT Happy-Angry (Caucasian)	0	45

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
						EBT Happy-Angry (South Asian)		
EBT	EBTRCS	EBT Response Count Sad	The number of times the option 'Sad' is selected across all assessed trials.	Higher scores indicate that the participant selected 'Sad' more often	ms	EBT Happy-Sad EBT Happy-Sad (Caucasian) EBT Happy-Sad (South Asian)	0	45
EBT	EBTBP	KEY: EBT Bias Point	The proportion of assessed trials where the subject selected 'Happy', adjusted to a scale of 0 to 15. (Number of assessed trials selected as 'Happy'/Number of all assessed trials)*15	Higher scores indicate a bias towards choosing 'Happy'	-	EBT Happy-Sad EBT Happy-Sad (Caucasian) EBT Happy-Sad (South Asian) EBT Happy-Disgust EBT Happy-Disgust (Caucasian) EBT Happy-Angry EBT Happy-Angry (Caucasian) EBT Happy-Angry (South Asian)	0	15
EBT	EBTRTMDD	EBT Median Reaction Time Disgust	The median reaction time for selecting the option 'Disgust' across all assessed trials.	-ve	ms	EBT Happy-Disgust EBT Happy-Disgust (Caucasian)	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
EBT	EBTRTMND	EBT Mean Reaction Time Disgust	The mean reaction time for selecting the option 'Disgust' across all assessed trials.	-ve	ms	EBT Happy-Disgust EBT Happy-Disgust (Caucasian)	0	∞
EBT	EBTRTSDD	EBT Standard Deviation Reaction Time Disgust	The standard deviation of the reaction time for selecting the option 'Disgust' across all assessed trials.	-ve	ms	EBT Happy-Disgust EBT Happy-Disgust (Caucasian)	0	∞
EBT	EBTRCD	EBT Response Count Disgust	The number of times the option 'Disgust' is selected across all assessed trials.	Higher scores indicate that the participant selected 'Disgust' more often	ms	EBT Happy-Disgust EBT Happy-Disgust (Caucasian)	0	45
EBT	EBTRTMDA	EBT Median Reaction Time Angry	The median reaction time for selecting the option 'Angry' across all assessed trials.	-ve	ms	EBT Happy-Angry EBT Happy-Angry (Caucasian) EBT Happy-Angry (South Asian)	0	∞
EBT	EBTRTMNA	EBT Mean Reaction Time Angry	The mean reaction time for selecting the option 'Angry' across all assessed trials.	-ve	-	EBT Happy-Angry EBT Happy-Angry (Caucasian) EBT Happy-Angry (South Asian)	0	∞
EBT	EBTRTSDA	EBT Standard Deviation Reaction Time Angry	The standard deviation of the reaction time for selecting the option 'Angry' across all assessed trials.	-ve	-	EBT Happy-Angry EBT Happy-Angry (Caucasian)	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
						EBT Happy-Angry (South Asian)	0 0	∞ ∞
EBT	EBTRCA	EBT Response Count Angry	The number of times the option 'Angry' is selected across all assessed trials.	Higher scores indicate that the participant selected 'Angry' more often	-	EBT Happy-Angry EBT Happy-Angry (Caucasian) EBT Happy-Angry (South Asian)	0	45

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Emotion Recognition Task (ERT)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
ERT	ERTOMDRT	KEY: ERT Overall Median Reaction Time	The overall median latency for a subject to select an emotion after being presented with a face stimulus, regardless of whether the selection is correct. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞
ERT	ERTRT *identical to ERTOMDRT*	KEY: ERT Median Reaction Time	The median latency for a subject to select an emotion after being presented with a stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTORTSD	ERT Overall Standard Deviation of Median Reaction Time	The overall standard deviation across median latencies for a subject to select an emotion after being presented with a face stimulus, regardless of whether the selection is correct. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞
ERT	ERTRTSD *identical to ERTORTSD*	ERT Standard Deviation Median Reaction Time	The standard deviation of median latencies for a subject to select an emotion after being presented with a stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTMDRTH	ERT Median Reaction Time Happiness	The median latency for a subject to select the emotion word 'Happiness' after being presented with a face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞
ERT	ERTRTH *identical to ERTMDRTH*	ERT Median Reaction Time Happiness	The median latency for a subject to select the emotion 'Happiness' after being presented with a face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTMDRTS	ERT Median Reaction Time Sadness	The median latency for a subject to select the emotion word 'Sadness' after being presented with a face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
ERT	ERTRTS *identical to ERTMDRTS*	ERT Median Reaction Time Sadness	The median latency for a subject to select the emotion 'Sadness' after being presented with a face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTMDRTF	ERT Median Reaction Time Fear	The median latency for a subject to select the emotion word 'Fear' after being presented with a face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞
ERT	ERTRTF *identical to ERTMDRTF*	ERT Median Reaction Time Fear	The median latency for a subject to select the emotion 'Fear' after being presented with a face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTMDRTA	ERT Median Reaction Time Anger	The median latency for a subject to select the emotion word 'Anger' after being presented with a face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞
ERT	ERTRTA *identical to ERTMDRTA*	ERT Median Reaction Time Anger	The median latency for a subject to select the emotion 'Anger' after being presented with a face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTMDRTSU	ERT Median Reaction Time Surprise	The median latency for a subject to select the emotion word 'Surprise' after being presented with a face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞
ERT	ERTRTSU *identical to ERTMDRTSU*	ERT Median Reaction Time Surprise	The median latency for a subject to select the emotion 'Surprise' after being presented with a face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTMDRTD	ERT Median Reaction Time Disgust	The median latency for a subject to select the emotion word 'Disgust' after being presented with a face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞
ERT	ERTRTD *identical to ERTMDRTD*	ERT Median Reaction Time Disgust	The median latency for a subject to select the emotion 'Disgust' after being presented with a face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian)	0 0 0	∞ ∞ ∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
						ERT Long (Caucasian)		
ERT	ERTOMDCRT	ERT Median Correct Reaction Time	The overall median latency for a subject to select the correct emotion based on the emotion present in the face stimulus. Calculated across all assessed trials.mot	Lower is Better	ms	ERT Short ERT Long	0	∞
ERT	ERTCRT *identical to ERTOMDCRT*	ERT Median Correct Reaction Time	The overall median latency for a subject to select the correct emotion based on the emotion present in the face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTOCRTSD	ERT Overall Standard Deviation of Correct Response Latencies	The overall standard deviation across median latencies for a subject to select the correct emotion word based on the emotion present in the face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞
ERT	ERTCRTSD *identical to ERTOCRTSD*	ERT Standard Deviation Median Correct Reaction Time	The standard deviation of median latencies for a subject to select the correct emotion based on the emotion present in the face stimulus. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTMDCRTH	ERT Median Correct Reaction Time Happiness	The median latency for a subject to correctly select the emotion 'Happiness' after being presented with a face stimulus showing Happiness. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞
ERT	ERTCRTH *identical to ERTMDCRTH*	ERT Median Correct Reaction Time Happiness	The median latency for a subject to correctly select the emotion 'Happiness' after being presented with a face stimulus showing Happiness. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTMDCRTS	ERT Median Correct Reaction Time Sadness	The median latency for a subject to correctly select the emotion 'Sadness' after being presented with a face stimulus showing Sadness. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0 0	∞ ∞
ERT	ERTCRTS *identical to ERTMDCRTS*	ERT Median Correct	The median latency for a subject to correctly select the emotion 'Sadness' after being presented with a face stimulus showing Sadness. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian)	0 0 0	∞ ∞ ∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
		Reaction Time Sadness				ERT Short (South Asian) ERT Long (Caucasian)		
ERT	ERTMDCRTF	ERT Median Correct Reaction Time Fear	The median latency for a subject to correctly select the emotion 'Fear' after being presented with a face stimulus showing Fear. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞
ERT	ERTCRTF *identical to ERTMDCRTF*	ERT Median Correct Reaction Time Fear	The median latency for a subject to correctly select the emotion 'Fear' after being presented with a face stimulus showing Fear. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTMDCRTA	ERT Median Correct Reaction Time Anger	The median latency for a subject to correctly select the emotion 'Anger' after being presented with a face stimulus showing Anger. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞
ERT	ERTCRTA *identical to ERTMDCRTA*	ERT Median Correct Reaction Time Anger	The median latency for a subject to correctly select the emotion 'Anger' after being presented with a face stimulus showing Anger. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTMDCRTSU	ERT Median Correct Reaction Time Surprise	The median latency for a subject to correctly select the emotion 'Surprise' after being presented with a face stimulus showing Surprise. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞
ERT	ERTCRTSU *identical to ERTMDCRTSU*	ERT Median Correct Reaction Time Surprise	The median latency for a subject to correctly select the emotion 'Surprise' after being presented with a face stimulus showing Surprise. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTMDCRTD	ERT Median Correct Reaction Time Disgust	The median latency for a subject to correctly select the emotion 'Disgust' after being presented with a face stimulus showing Disgust. Calculated across all assessed trials.	Lower is Better	ms	ERT Short ERT Long	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
ERT	ERTCRTD *identical to ERTMDCRTD*	ERT Median Correct Reaction Time Disgust	The median latency for a subject to correctly select the emotion 'Disgust' after being presented with a face stimulus showing Disgust. Calculated across all assessed trials.	Lower is Better	ms	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0	∞
ERT	ERTTH	KEY: ERT Total Hits	The total number of correct responses (emotion selection) the subject made across all assessed trials.	Higher is Better	-	ERT Short ERT Long	0 0	48 90
ERT	ERTTH *identical to ERTTH*	KEY: ERT Total Hits	The total number of times the subject selected the correct emotion. Calculated across all assessed trials.	Higher is Better	-	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0 0 0	48 48 90
ERT	ERTTHH	ERT Total Hits Happiness	The total number of times the subject correctly selected the emotion 'Happiness' across all assessed trials.	Higher is Better	-	ERT Short ERT Long	0 0	8 15
ERT	ERTTHH *identical to ERTTHH*	ERT Total Hits Happiness	The total number of times the subject correctly selected the emotion 'Happiness'. Calculated across all assessed trials.	Higher is Better	-	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0 0 0	8 8 15
ERT	ERTTHS	ERT Total Hits Sadness	The total number of times the subject correctly selected the emotion 'Sadness' across all assessed trials.	Higher is Better	-	ERT Short ERT Long	0 0	8 15
ERT	ERTTHS *identical to ERTTHS*	ERT Total Hits Sadness	The total number of times the subject correctly selected the emotion 'Sadness'. Calculated across all assessed trials.	Higher is Better	-	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0 0 0	8 8 15
ERT	ERTTHF	ERT Total Hits Fear	The total number of times the subject correctly selected the emotion 'Fear' across all assessed trials.	Higher is Better	-	ERT Short ERT Long	0 0	8 15
ERT	ERTTHF *identical to ERTTHF*	ERT Total Hits Fear	The total number of times the subject correctly selected the emotion 'Fear'. Calculated across all assessed trials.	Higher is Better	-	ERT Short (Caucasian) ERT Short (South Asian)	0 0 0	8 8 15

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
						ERT Long (Caucasian)		
ERT	ERTTHA	ERT Total Hits Anger	The total number of times the subject correctly selected the emotion 'Anger' across all assessed trials.	Higher is Better	-	ERT Short ERT Long	0 0	8 15
ERT	ERTTHA *identical to ERTTHA*	ERT Total Hits Anger	The total number of times the subject correctly selected the emotion 'Anger'. Calculated across all assessed trials.	Higher is Better	-	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0 0 0	8 8 15
ERT	ERTTHSU	ERT Total Hits Surprise	The total number of times the subject correctly selected the emotion 'Surprise' across all assessed trials.	Higher is Better	-	ERT Short ERT Long	0 0	8 15
ERT	ERTTHSU *identical to ERTTHSU*	ERT Total Hits Surprise	The total number of times the subject correctly selected the emotion 'Surprise'. Calculated across all assessed trials.	Higher is Better	-	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0 0 0	8 8 15
ERT	ERTTHD	ERT Total Hits Disgust	The total number of times the subject correctly selected the emotion 'Disgust' across all assessed trials.	Higher is Better	-	ERT Short ERT Long	0 0	8 15
ERT	ERTTHD *identical to ERTTHD*	ERT Total Hits Disgust	The total number of times the subject correctly selected the emotion 'Disgust'. Calculated across all assessed trials.	Higher is Better	-	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0 0	8 15
ERT	ERTTFAH	ERT Total False Alarms Happiness	The total number of times the subject incorrectly selected the emotion 'Happiness' across all assessed trials.	Lower is Better	-	ERT Short ERT Long	0 0	40 75
ERT	ERTTFAH *identical to ERTTFAH*	ERT Total False Alarms Happiness	The total number of times the subject incorrectly selected the emotion 'Happiness'. Calculated across all assessed trials.	Lower is Better	-	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0 0 0	40 40 75

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
ERT	ERTTFAS	ERT Total False Alarms Sadness	The total number of times the subject incorrectly selected the emotion 'Sadness' across all assessed trials.	Lower is Better	-	ERT Short ERT Long	0 0	40 75
ERT	ERTTFAS *identical to ERTTFAS*	ERT Total False Alarms Sadness	The total number of times the subject incorrectly selected the emotion 'Sadness'. Calculated across all assessed trials.	Lower is Better	-	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0 0 0	40 40 75
ERT	ERTTFAF	ERT Total False Alarms Fear	The total number of times the subject incorrectly selected the emotion 'Fear' across all assessed trials.	Lower is Better	-	ERT Short ERT Long	0 0	40 75
ERT	ERTTFAF *identical to ERTTFAF*	ERT Total False Alarms Fear	The total number of times the subject incorrectly selected the emotion 'Fear'. Calculated across all assessed trials.	Lower is Better	-	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0 0 0	40 40 75
ERT	ERTTFAA	ERT Total False Alarms Anger	The total number of times the subject incorrectly selected the emotion 'Anger' across all assessed trials.	Lower is Better	-	ERT Short ERT Long	0 0	40 75
ERT	ERTTFAA *identical to ERTTFAA*	ERT Total False Alarms Anger	The total number of times the subject incorrectly selected the emotion 'Anger'. Calculated across all assessed trials.	Lower is Better	-	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0 0 0	40 40 75
ERT	ERTTFASU	ERT Total False Alarms Surprise	The total number of times the subject incorrectly selected the emotion 'Surprise' across all assessed trials.	Lower is Better	-	ERT Short ERT Long	0 0	40 75
ERT	ERTTFASU *identical to ERTTFASU*	ERT Total False Alarms Surprise	The total number of times the subject incorrectly selected the emotion 'Surprise'. Calculated across all assessed trials.	Lower is Better	-	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0 0 0	40 40 75
ERT	ERTTFAD	ERT Total False Alarms Disgust	The total number of times the subject incorrectly selected the emotion 'Disgust' across all assessed trials.	Lower is Better	-	ERT Short ERT Long	0 0	40 75

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
ERT	ERTTFAD *identical to ERTTFAD*	ERT Total False Alarms Disgust	The total number of times the subject incorrectly selected the emotion 'Disgust'. Calculated across all assessed trials.	Lower is Better	-	ERT Short (Caucasian) ERT Short (South Asian) ERT Long (Caucasian)	0 0 0	40 40 75
ERT	ERTUHRH	KEY: ERT Unbiased Hit Rate Happiness	The unbiased hit rate ensures that recognition accuracy of the Happiness emotion is not influenced by response guessing or response bias effects. It takes into consideration the joint probability of an individual making a correct response, based on the presentation of the correct stimulus out of the available possibilities. Calculated for assessed Happiness trials only.	Higher is Better	-	ERT Short ERT Long	0	1
ERT	ERTUHRS	KEY: ERT Unbiased Hit Rate Sadness	The unbiased hit rate ensures that recognition accuracy of the Sadness emotion is not influenced by response guessing or response bias effects. It takes into consideration the joint probability of an individual making a correct response, based on the presentation of the correct stimulus out of the available possibilities. Calculated for assessed Sadness trials only.	Higher is Better	-	ERT Short ERT Long	0	1
ERT	ERTUHRF	KEY: ERT Unbiased Hit Rate Fear	The unbiased hit rate ensures that recognition accuracy of the Fear emotion is not influenced by response guessing or response bias effects. It takes into consideration the joint probability of an individual making a correct response, based on the presentation of the correct stimulus out of the available possibilities. Calculated for assessed Fear trials only.	Higher is Better	-	ERT Short ERT Long	0	1
ERT	ERTUHRA	KEY: ERT Unbiased Hit Rate Anger	The unbiased hit rate ensures that recognition accuracy of the Anger emotion is not influenced by response guessing or response bias effects. It takes into consideration the joint probability of an individual making a correct response, based on the presentation of the correct stimulus out of the available possibilities. Calculated for assessed Anger trials only.	Higher is Better	-	ERT Short ERT Long	0	1
ERT	ERTUHRSU	KEY: ERT Unbiased Hit Rate Surprise	The unbiased hit rate ensures that recognition accuracy of the Surprise emotion is not influenced by response guessing or response bias effects. It takes into consideration the joint probability of an individual making a correct response, based on the presentation of the correct stimulus out of the available possibilities. Calculated for assessed Surprise trials only.	Higher is Better	-	ERT Short ERT Long	0	1

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
ERT	ERTUHRD	KEY: ERT Unbiased Hit Rate Disgust	The unbiased hit rate ensures that recognition accuracy of the Disgust emotion is not influenced by response guessing or response bias effects. It takes into consideration the joint probability of an individual making a correct response, based on the presentation of the correct stimulus out of the available possibilities. Calculated for assessed Disgust trials only.	Higher is Better	-	ERT Short ERT Long	0	1

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Intra-Extra Dimensional Set Shift (IED)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
IED	IEDEPRE	IED Pre-ED Errors	The number of times the subject chose the incorrect box for a stimulus on problems prior to the extra-dimensional shift. -ve. This measure records the number of errors made prior to the extra-dimensional shift of the task. Errors are defined as instances when the subject fails to select the stimulus that is compatible with the current rule.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	308
IED	IEDEEDS	KEY: IED EDS Errors	The number of times that the subject failed to select the stimulus compatible with the current rule on the stage where the extra-dimensional shift occurs. This is a measure of the subject's ability to shift attentional set.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	50
IED	IEDYERT	IED Total Errors	The total number of times that the subject chose a wrong stimulus – i.e. one incompatible with the current rule. -ve. This is a measure of the subject's efficiency in attempting the test.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	402
IED	IEDYERTA	KEY: IED Total Errors (Adjusted)	The total number of times that the subject chose a wrong stimulus – i.e. one incompatible with the current rule, adjustment for every stage that was not reached. -ve. Total Errors Adjusted = Total Errors (problems reached) + [(number of unreached problems) * (25)] This is a measure of the subject's efficiency in attempting the test. subjects failing at any stage of the test will have had less opportunity to make errors. The adjustment is carried out to compensate for this missing data and provide a more comparable error score to subjects completing all stages of the test.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	402

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
IED	IEDECS	IED Completed Stage Errors	The total number of errors made on stages that the subject successfully completed. This does not include the errors made on the stage (if any) on which the subject failed. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	396
IED	IEDES1	IED Errors (Stage 1) - Simple Discrimination	This is the total number of errors made in Stage 1, when only one perceptual dimension is present. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	50
IED	IEDES2	IED errors (Stage 2) - Simple Reversal	This is the total number of errors made in Stage 2. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	50
IED	IEDES3	IED Errors (Stage 3) - Compound Discrimination Non-Superimposed	This is the total number of errors made in Stage 3, when two perceptual dimensions are present (shape and line). -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	50
IED	IEDES4	IED Errors (Stage 4) - Compound Discrimination Superimposed	This is the total number of errors made in Stage 4, when two perceptual dimensions are present superimposed to provide a compound stimulus. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	50

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
IED	IEDES5	IED errors (Stage 5) - Compound Reversal	This is the total number of errors made in Stage 5. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	50
IED	IEDES6	IED Errors (Stage 6) - Intradimensional Shift	This is the total number of errors made in Stage 6: the number of errors taken to successfully complete an intra-dimensional shift (the shift of attention to a novel exemplar within a previously relevant perceptual dimension). -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	50
IED	IEDES7	IED Errors (Stage 7) - Intradimensional Reversal	This is the total number of errors made in Stage 7. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	50
IED	IEDES8	IED Errors (Stage 8) - Extradimensional Shift if Specified	This is the total number of errors made in Stage 8: the number of errors taken to successfully complete an extra-dimensional shift (the shift of attention to a novel exemplar of a previously unrewarded perceptual dimension). -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	50
IED	IEDES9	IED Errors (Stage 9) - Extradimensional Reversal if Specified	This is the total number of errors made in Stage 9. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	50

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
IED	IEDYCOST	IED Stages Completed	This is the total number of stages the subject completed successfully. There are nine stages to be completed. +ve.	+ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	9
IED	IEDTT	IED Total Trials	This is the number of trials completed on all attempted stages. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	54	450
IED	IEDTTA	IED Total Trials (Adjusted)	This is the number of trials completed on all attempted stages with an adjustment for any stages not reached. -ve. Total Trials Adjusted = Total Trials (problems reached) + [(number of unreached problems) * (50)] subjects failing at any stage of the test will have had less opportunity to make choices (correct and erroneous). The adjustment is carried out to compensate for this missing data and provide a more comparable error score to subjects completing all stages of the test.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	54	450
IED	IEDTTS1	IED Total Trials Stage 1	This is the number of trials completed on Stage 1. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	6	50
IED	IEDTTS2	IED Total Trials Stage 2	This is the number of trials completed on Stage 2. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	6	50

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
IED	IEDTTS3	IED Total Trials Stage 3	This is the number of trials completed on Stage 3. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	6	50
IED	IEDTTS4	IED Total Trials Stage 4	This is the number of trials completed on Stage 4. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	6	50
IED	IEDTTS5	IED Total Trials Stage 5	This is the number of trials completed on Stage 5. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	6	50
IED	IEDTTS6	IED Total Trials Stage 6	This is the number of trials completed on Stage 6. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	6	50
IED	IEDTTS7	IED Total Trials Stage 7	This is the number of trials completed on Stage 7. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	6	50

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
IED	IEDTTS8	IED Total Trials Stage 8	This is the number of trials completed on Stage 8. -ve.	-ve	-	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	6	50
IED	IEDTTS9	IED Total Trials Stage 9	This is the number of trials completed on Stage 9. -ve.	-ve		IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	6	50
IED	IEDYSTCO	IED Completed Stage Trials	This is the number of trials undertaken on all successfully completed stages. -ve.	-ve		IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	54	396
IED	IEDTL	IED Total Latency	The sum of the subject's response latencies, measured in milliseconds, calculated across all assessed trials.	-ve	ms	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0 0	∞ ∞
IED	IEDTLS1	IED Total Latency Stage 1	The sum of the subject's response latencies, measured in milliseconds, calculated across all assessed trials during Stage 1.	-ve	ms	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0 0	∞ ∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
IED	IEDTLS2	IED Total Latency Stage 2	The sum of the subject's response latencies, measured in milliseconds, calculated across all assessed trials during Stage 2.	-ve	ms	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	∞
IED	IEDTLS3	IED Total Latency Stage 3	The sum of the subject's response latencies, measured in milliseconds, calculated across all assessed trials during Stage 3.	-ve	ms	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	∞
IED	IEDTLS4	IED Total Latency Stage 4	The sum of the subject's response latencies, measured in milliseconds, calculated across all assessed trials during Stage 4.	-ve	ms	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	∞
IED	IEDTLS5	IED Total Latency Stage 5	The sum of the subject's response latencies, measured in milliseconds, calculated across all assessed trials during Stage 5.	-ve	ms	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	∞
IED	IEDTLS6	IED Total Latency Stage 6	The sum of the subject's response latencies, measured in milliseconds, calculated across all assessed trials during Stage 6.	-ve	ms	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
IED	IEDTLS7	IED Total Latency Stage 7	The sum of the subject's response latencies, measured in milliseconds, calculated across all assessed trials during Stage 7.	-ve	ms	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	∞
IED	IEDTLS8	IED Total Latency Stage 8	The sum of the subject's response latencies, measured in milliseconds, calculated across all assessed trials during Stage 8.	-ve	ms	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	∞
IED	IEDTLS9	IED Total Latency Stage 9	The sum of the subject's response latencies, measured in milliseconds, calculated across all assessed trials during Stage 9.	-ve	ms	IED Recommended Standard Lines First / Repeated IED Recommended Standard Shapes First / Repeated	0	∞

CAMBRIDGE COGNITION

Match to Sample Visual Search (MTS)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTS	MTSCTATC	MTS Correct Trials All Total Count	The total number of trials during which the subject selected the correct box. Calculated across all assessed trials.	+ve	-	MTS Recommended Standard / Tone	0	50
MTS	MTSCTAPC	KEY: MTS Correct Trials All Percentage	The percentage of trials during which the subject selected the correct box. Calculated across all assessed trials.	+ve	%	MTS Recommended Standard / Tone	0	100
MTS	MTSCTAPB	MTS Correct Trials All Probability	The proportion of trials during which the subject selected the correct box. Calculated across all assessed trials.	+ve	-	MTS Recommended Standard / Tone	0	1
MTS	MTSCT1TC	MTS Correct Trials 1 Pattern Total Count	The total number of trials during which the subject selected the correct box. Calculated across 1 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	10
MTS	MTSCTPC	MTS Correct Trials 1 Pattern Percentage	The percentage of trials during which the subject selected the correct box. Calculated across 1 pattern assessed trials only.	+ve	%	MTS Recommended Standard / Tone	0	100
MTS	MTSCT1PB	MTS Correct Trials 1 Pattern Probability	The proportion of trials during which the subject selected the correct box. Calculated across 1 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	1
MTS	MTSCT2TC	MTS Correct Trials 2 Patterns Total Count	The total number of trials during which the subject selected the correct box. Calculated across 2 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	10
MTS	MTSCT2PC	MTS Correct Trials 2 Patterns Percentage	The percentage of trials during which the subject selected the correct box. Calculated across 2 pattern assessed trials only.	+ve	%	MTS Recommended Standard / Tone	0	100
MTS	MTSCT2PB	MTS Correct Trials 2 Patterns Probability	The proportion of trials during which the subject selected the correct box. Calculated across 2 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	1
MTS	MTSCT4TC	MTS Correct Trials 4 Patterns Total Count	The total number of trials during which the subject selected the correct box. Calculated across 4 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	10
MTS	MTSCT4PC	MTS Correct Trials 4 Patterns Percentage	The percentage of trials during which the subject selected the correct box. Calculated across 4 pattern assessed trials only.	+ve	%	MTS Recommended Standard / Tone	0	100
MTS	MTSCT4PB	MTS Correct Trails 4 Patterns Probability	The proportion of trials during which the subject selected the correct box. Calculated across 4 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	1

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTS	MTSCT6TC	MTS Correct Trials 6 Patterns Total Count	The total number of trials during which the subject selected the correct box. Calculated across 6 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	10
MTS	MTSCT6PC	MTS Correct Trials 6 Patterns Percentage	The percentage of trials during which the subject selected the correct box. Calculated across 6 pattern assessed trials only.	+ve	%	MTS Recommended Standard / Tone	0	100
MTS	MTSCT6PB	MTS Correct Trials 6 Patterns Probability	The proportion of trials during which the subject selected the correct box. Calculated across 6 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	1
MTS	MTSCT8TC	MTS Correct Trials 8 Patterns Total Count	The total number of trials during which the subject selected the correct box. Calculated across 8 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	10
MTS	MTSCT8PC	MTS Correct Trials 8 Patterns Percentage	The percentage of trials during which the subject selected the correct box. Calculated across 8 pattern assessed trials only.	+ve	%	MTS Recommended Standard / Tone	0	100
MTS	MTSCT8PB	MTS Correct Trials 8 Patterns Probability	The proportion of trials during which the subject selected the correct box. Calculated across 8 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	1
MTS	MTSCFATC	MTS Correct Trials on First Attempt All Total Count	The total number of trials during which the subject selected the correct box on their first attempt. Calculated across all assessed trials.	+ve	-	MTS Recommended Standard / Tone	0	50
MTS	MTSCFAPC	KEY: MTS Correct Trials on First Attempt All Percentage	The percentage of trials during which the subject selected the correct box on their first attempt. Calculated across all assessed trials.	+ve	%	MTS Recommended Standard / Tone	0	100
MTS	MTSCFAPB	MTS Correct Trials on First Attempt All Probability	The proportion of trials during which the subject selected the correct box on their first attempt. Calculated across all assessed trials.	+ve	-	MTS Recommended Standard / Tone	0	1
MTS	MTSCF1TC	MTS Correct Trials on First Attempt 1 Pattern Total Count	The total number of trials during which the subject selected the correct box on their first attempt. Calculated across 1 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	10
MTS	MTSCF1PC	MTS Correct Trials on First Attempt 1 Pattern Percentage	The percentage of trials during which the subject selected the correct box on their first attempt. Calculated across 1 pattern assessed trials only.	+ve	%	MTS Recommended Standard / Tone	0	100
MTS	MTSCF1PB	MTS Correct Trials on First Attempt 1 Pattern Probability	The proportion of trials during which the subject selected the correct box on their first attempt. Calculated across 1 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	1

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTS	MTSCF2TC	MTS Correct Trials on First Attempt 2 Patterns Total Count	The total number of trials during which the subject selected the correct box on their first attempt. Calculated across 2 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	10
MTS	MTSCF2PC	MTS Correct Trials on First Attempt 2 Patterns Percentage	The percentage of trials during which the subject selected the correct box on their first attempt. Calculated across 2 pattern assessed trials only.	+ve	%	MTS Recommended Standard / Tone	0	100
MTS	MTSCF2PB	MTS Correct Trials on First Attempt 2 Patterns Probability	The proportion of trials during which the subject selected the correct box on their first attempt. Calculated across 2 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	1
MTS	MTSCF4TC	MTS Correct Trials on First Attempt 4 Patterns Total Count	The total number of trials during which the subject selected the correct box on their first attempt. Calculated across 4 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	10
MTS	MTSCF4PC	MTS Correct Trials on First Attempt 4 Patterns Percentage	The percentage of trials during which the subject selected the correct box on their first attempt. Calculated across 4 pattern assessed trials only.	+ve	%	MTS Recommended Standard / Tone	0	100
MTS	MTSCF4PB	MTS Correct Trials on First Attempt 4 Patterns Probability	The proportion of trials during which the subject selected the correct box on their first attempt. Calculated across 4 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	1
MTS	MTSCF6TC	MTS Correct Trials on First Attempt 6 Patterns Total Count	The total number of trials during which the subject selected the correct box on their first attempt. Calculated across 6 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	10
MTS	MTSCF6PC	MTS Correct Trials on First Attempt 6 Patterns Percentage	The percentage of trials during which the subject selected the correct box on their first attempt. Calculated across 6 pattern assessed trials only.	+ve	%	MTS Recommended Standard / Tone	0	100
MTS	MTSCF6PB	MTS Correct Trials on First Attempt 6 Patterns Probability	The proportion of trials during which the subject selected the correct box on their first attempt. Calculated across 6 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	1
MTS	MTSCF8TC	MTS Correct Trials on First Attempt 8 Patterns Total Count	The total number of trials during which the subject selected the correct box on their first attempt. Calculated across 8 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	10
MTS	MTSCF8PC	MTS Correct Trials on First Attempt 8 Patterns Percentage	The percentage of trials during which the subject selected the correct box on their first attempt. Calculated across 8 pattern assessed trials only.	+ve	%	MTS Recommended Standard / Tone	0	100
MTS	MTSCF8PB	MTS Correct Trials on First Attempt 8 Patterns Probability	The proportion of trials during which the subject selected the correct box on their first attempt. Calculated across 8 pattern assessed trials only.	+ve	-	MTS Recommended Standard / Tone	0	1

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTS	MTSRFAM	MTS Reaction Time on First Attempt All Mean	The mean time between presentation of the response stimulus options and the subject selecting a box. Calculated across all assessed trials.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF1M	MTS Reaction Time on First Attempt 1 Pattern Mean	The mean time between presentation of the response stimulus options and the subject selecting a box. Calculated across 1 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF2M	MTS Reaction Time on First Attempt 2 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting a box. Calculated across 2 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF4M	MTS Reaction Time on First Attempt 4 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting a box. Calculated across 4 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF6M	MTS Reaction Time on First Attempt 6 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting a box. Calculated across 6 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF8M	MTS Reaction Time on First Attempt 8 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting a box. Calculated across 8 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFAMD	KEY: MTS Reaction Time on First Attempt All Median	The median time between presentation of the response stimulus options and the subject selecting a box. Calculated across all assessed trials.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF1MD	MTS Reaction Time on First Attempt 1 Pattern Median	The median time between presentation of the response stimulus options and the subject selecting a box. Calculated across 1 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF2MD	MTS Reaction Time on First Attempt 2 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting a box. Calculated across 2 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF4MD	MTS Reaction Time on First Attempt 4 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting a box. Calculated across 4 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF6MD	MTS Reaction Time on First Attempt 6 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting a box. Calculated across 6 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF8MD	MTS Reaction Time on First Attempt 8 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting a box. Calculated across 8 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFASD	MTS Reaction Time on First Attempt All Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting a box. Calculated across all assessed trials.	-ve	ms	MTS Recommended Standard / Tone	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTS	MTSRF1SD	MTS Reaction Time on First Attempt 1 Pattern Standard Deviation	The standard deviation of the reaction time between presentation of the response stimulus options and the subject selecting a box. Calculated across 1 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF2SD	MTS Reaction Time on First Attempt 2 Patterns Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting a box. Calculated across 2 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF4SD	MTS Reaction Time on First Attempt 4 Patterns Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting a box. Calculated across 4 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF6SD	MTS Reaction Time on First Attempt 6 Patterns Standard Deviation	The standard deviation of the reaction time between presentation of the response stimulus options and the subject selecting a box. Calculated across 6 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRF8SD	MTS Reaction Time on First Attempt 8 Patterns Standard Deviation	The standard deviation of the reaction time between presentation of the response stimulus options and the subject selecting a box. Calculated across 8 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFCAM	MTS Reaction Time on First Attempt Correct All Mean	The mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across all assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFC1M	MTS Reaction Time on First Attempt Correct 1 Pattern Mean	The mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 1 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFC2M	MTS Reaction Time on First Attempt Correct 2 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 2 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFC4M	MTS Reaction Time on First Attempt Correct 4 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 4 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFC6M	MTS Reaction Time on First Attempt Correct 6 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 6 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTS	MTSRFC8M	MTS Reaction Time on First Attempt Correct 8 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 8 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFCAD	MTS Reaction Time on First Attempt Correct All Median	The median time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across all assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFC1D	MTS Reaction Time on First Attempt Correct 1 Pattern Median	The median time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 1 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFC2D	MTS Reaction Time on First Attempt Correct 2 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 2 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFC4D	MTS Reaction Time on First Attempt Correct 4 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 4 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFC6D	MTS Reaction Time on First Attempt Correct 6 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 6 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFC8D	MTS Reaction Time on First Attempt Correct 8 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 8 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFCAS	MTS Reaction Time on First Attempt Correct All Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across all assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFC1S	MTS Reaction Time on First Attempt Correct 1 Pattern Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 1 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTS	MTSRFC2S	MTS Reaction Time on First Attempt Correct 2 Patterns Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 2 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFC4S	MTS Reaction Time on First Attempt Correct 4 Patterns Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 4 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFC6S	MTS Reaction Time on First Attempt Correct 6 Patterns Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 6 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFC8S	MTS Reaction Time on First Attempt Correct 8 Patterns Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt. Calculated across 8 pattern assessed trials where the first attempt was correct.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFIAM	MTS Reaction Time on First Attempt Incorrect All Mean	The mean time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across all assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFI1M	MTS Reaction Time on First Attempt Incorrect 1 Pattern Mean	The mean time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 1 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFI2M	MTS Reaction Time on First Attempt Incorrect 2 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 2 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFI4M	MTS Reaction Time on First Attempt Incorrect 4 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 4 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFI6M	MTS Reaction Time on First Attempt Incorrect 6 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 6 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTS	MTSRFI8M	MTS Reaction Time on First Attempt Incorrect 8 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 8 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFIAD	MTS Reaction Time on First Attempt Incorrect All Median	The median time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across all assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFI1D	MTS Reaction Time on First Attempt Incorrect 1 Pattern Median	The median time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 1 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFI2D	MTS Reaction Time on First Attempt Incorrect 2 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 2 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFI4D	MTS Reaction Time on First Attempt Incorrect 4 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 4 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFI6D	MTS Reaction Time on First Attempt Incorrect 6 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 6 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFI8D	MTS Reaction Time on First Attempt Incorrect 8 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 8 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFIAS	MTS Reaction Time on First Attempt Incorrect All Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across all assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFI1S	MTS Reaction Time on First Attempt Incorrect 1 Pattern Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 1 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTS	MTSRFI2S	MTS Reaction Time on First Attempt Incorrect 2 Patterns Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 2 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFI4S	MTS Reaction Time on First Attempt Incorrect 4 Patterns Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 4 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFI6S	MTS Reaction Time on First Attempt Incorrect 6 Patterns Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 6 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRFI8S	MTS Reaction Time on First Attempt Incorrect 8 Patterns Standard Deviation	The standard deviation of the time between presentation of the response stimulus options and the subject selecting the incorrect box on their first attempt. Calculated across 8 pattern assessed trials where the first attempt was incorrect.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRCAM	MTS Reaction Time to Correct All Mean	The mean time between presentation of the response stimulus options and the subject selecting the correct box. Calculated across all assessed trials.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC1M	MTS Reaction Time to Correct 1 Pattern Mean	The mean time between presentation of the response stimulus options and the subject selecting the correct box. Calculated across 1 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC2M	MTS Reaction Time to Correct 2 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting the correct box. Calculated across 2 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC4M	MTS Reaction Time to Correct 4 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting the correct box. Calculated across 4 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC6M	MTS Reaction Time to Correct 6 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting the correct box. Calculated across 6 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC8M	MTS Reaction Time to Correct 8 Patterns Mean	The mean time between presentation of the response stimulus options and the subject selecting the correct box. Calculated across 8 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTS	MTSRCAMD	KEY: MTS Reaction Time to Correct All Median	The median time between presentation of the response stimulus options and the subject selecting the correct box. Calculated across all assessed trials.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC1MD	MTS Reaction Time to Correct 1 Pattern Median	The median time between presentation of the response stimulus options and the subject selecting the correct box. Calculated across 1 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC2MD	MTS Reaction Time to Correct 2 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting the correct box. Calculated across 2 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC4MD	MTS Reaction Time to Correct 4 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting the correct box. Calculated across 4 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC6MD	MTS Reaction Time to Correct 6 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting the correct box. Calculated across 6 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC8MD	MTS Reaction Time to Correct 8 Patterns Median	The median time between presentation of the response stimulus options and the subject selecting the correct box. Calculated across 8 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRCASD	MTS Reaction Time to Correct All Standard Deviation	The standard deviation of the time between presentation of the response stimulus and the subject selecting the correct box. Calculated across all assessed trials.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC1SD	MTS Reaction Time to Correct 1 Pattern Standard Deviation	The standard deviation of the time between presentation of the response stimulus and the subject selecting the correct box. Calculated across 1 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC2SD	MTS Reaction Time to Correct 2 Pattern Standard Deviation	The standard deviation of the time between presentation of the response stimulus and the subject selecting the correct box. Calculated across 2 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC4SD	MTS Reaction Time to Correct 4 Patterns Standard Deviation	The standard deviation of the time between presentation of the response stimulus and the subject selecting the correct box. Calculated across 4 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC6SD	MTS Reaction Time to Correct 6 Patterns Standard Deviation	The standard deviation of the time between presentation of the response stimulus and the subject selecting the correct box. Calculated across 6 pattern assessed trials only.	-ve	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSRC8SD	MTS Reaction Time to Correct 8 Patterns Standard Deviation	The standard deviation of the time between presentation of the response stimulus and the subject selecting the	-ve	ms	MTS Recommended Standard / Tone	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
			correct box. Calculated across 8 pattern assessed trials only.					
MTS	MTSPS21	MTS Proportional Slowing 2 Patterns to 1 Pattern	The difference in mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt on the 2 pattern assessment trials compared to the 1 pattern assessment trials. Calculated across 2 pattern and 1 pattern assessed trials where the first attempt was correct.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSPS42	MTS Proportional Slowing 4 Patterns to 2 Patterns	The difference in mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt on the 4 pattern assessment trials compared to the 2 pattern assessment trials. Calculated across 4 pattern and 2 pattern assessed trials where the first attempt was correct	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSPS41	MTS Proportional Slowing 4 Patterns to 1 Pattern	The difference in mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt on the 4 pattern assessment trials compared to the 1 pattern assessment trials. Calculated across 4 pattern and 1 pattern assessed trials where the first attempt was correct.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSPS64	MTS Proportional Slowing 6 Patterns to 4 Patterns	The difference in mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt on the 6 pattern assessment trials compared to the 4 pattern assessment trials. Calculated across 6 pattern and 4 pattern assessed trials where the first attempt was correct.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSPS62	MTS Proportional Slowing 6 Patterns to 2 Patterns	The difference in mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt on the 6 pattern assessment trials compared to the 2 pattern assessment trials. Calculated across 6 pattern and 2 pattern assessed trials where the first attempt was correct.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSPS61	MTS Proportional Slowing 6 Patterns to 1 Pattern	The difference in mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt on the 6 pattern assessment trials compared to the 1 pattern assessment trials. Calculated across 6 pattern and 1 pattern assessed trials where the first attempt was correct.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTS	MTSPS86	MTS Proportional Slowing 8 Patterns to 6 Patterns	The difference in mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt on the 8 pattern assessment trials compared to the 6 pattern assessment trials. Calculated across 8 pattern and 6 pattern assessed trials where the first attempt was correct.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSPS84	MTS Proportional Slowing 8 Patterns to 4 Patterns	The difference in mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt on the 8 pattern assessment trials compared to the 4 pattern assessment trials. Calculated across 8 pattern and 4 pattern assessed trials where the first attempt was correct.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSPS82	KEY: MTS Proportional Slowing 8 Patterns to 2 Patterns	The difference in mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt on the 8 pattern assessment trials compared to the 2 pattern assessment trials. Calculated across 8 pattern and 2 pattern assessed trials where the first attempt was correct.	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSPS81	MTS Proportional Slowing 8 Patterns to 1 Pattern	The difference in mean time between presentation of the response stimulus options and the subject selecting the correct box on their first attempt on the 8 pattern assessment trials compared to the 1 pattern assessment trials. Calculated across 8 pattern and 1 pattern assessed trials where the first attempt was correct	Complex (see description)	ms	MTS Recommended Standard / Tone	0	∞
MTS	MTSACAM	MTS Attempts to Correct All Mean	The mean number of attempts until correct. Calculated across all assessed trials.	-ve	-	MTS Recommended Standard / Tone	0	4
MTS	MTSAC1M	MTS Attempts to Correct 1 Pattern Mean	The mean number of attempts until correct. Calculated across 1 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	4
MTS	MTSAC2M	MTS Attempts to Correct 2 Pattern Mean	The mean number of attempts until correct. Calculated across 2 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	4
MTS	MTSAC4M	MTS Attempts to Correct 4 Pattern Mean	The mean number of attempts until correct. Calculated across 4 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	4
MTS	MTSAC6M	MTS Attempts to Correct 6 Pattern Mean	The mean number of attempts until correct. Calculated across 6 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	4

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTS	MTSAC8M	MTS Attempts to Correct 8 Pattern Mean	The mean number of attempts until correct. Calculated across 8 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	4
MTS	MTSACAMD	MTS Attempts to Correct All Median	The median number of attempts until correct. Calculated across all assessed trials.	-ve	-	MTS Recommended Standard / Tone	0	4
MTS	MTSAC1MD	MTS Attempts to Correct 1 Pattern Median	The median number of attempts until correct. Calculated across 1 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	4
MTS	MTSAC2MD	MTS Attempts to Correct 2 Pattern Median	The median number of attempts until correct. Calculated across 2 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	4
MTS	MTSAC4MD	MTS Attempts to Correct 4 Pattern Median	The median number of attempts until correct. Calculated across 4 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	4
MTS	MTSAC6MD	MTS Attempts to Correct 6 Pattern Median	The median number of attempts until correct. Calculated across 6 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	4
MTS	MTSAC8MD	MTS Attempts to Correct 8 Pattern Median	The median number of attempts until correct. Calculated across 8 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	4
MTS	MTSACASD	MTS Attempts to Correct All Standard Deviation	The standard deviation of the number of attempts until correct. Calculated across all assessed trials.	-ve	-	MTS Recommended Standard / Tone	0	1.5
MTS	MTSAC1SD	MTS Attempts to Correct 1 Pattern Standard Deviation	The standard deviation of the number of attempts until correct. Calculated across 1 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	1.5
MTS	MTSAC2SD	MTS Attempts to Correct 2 Pattern Standard Deviation	The standard deviation of the number of attempts until correct. Calculated across 2 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	1.5
MTS	MTSAC4S	MTS Attempts to Correct 4 Pattern Standard Deviation	The standard deviation of the number of attempts until correct. Calculated across 4 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	1.5
MTS	MTSAC6S	MTS Attempts to Correct 6	The standard deviation of the number of attempts until correct. Calculated across 6 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	1.5

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
		Pattern Standard Deviation						
MTS	MTSAC8S	MTS Attempts to Correct 8 Pattern Standard Deviation	The standard deviation of the number of attempts until correct. Calculated across 8 pattern assessed trials only.	-ve	-	MTS Recommended Standard / Tone	0	1.5

Motor Screening Task (MOT)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MOT	MOTML	KEY: MOT Mean Latency	The mean latency for a subject to correctly respond to the stimulus on screen during assessed trials, measured in milliseconds.	-ve	ms	MOT Voice / Tone	0	6000
MOT	MOTSDL	MOT Mean Latency Standard Deviation	The standard deviation of the latency for subjects to correctly respond to the stimulus on screen during assessed trials, measured in milliseconds.	-ve	ms	MOT Voice / Tone	0	~3162
MOT	MOTTC	MOT Total Correct	The total number of correct responses a subject made across all assessed trials.	+ve	-	MOT Voice / Tone	0	10
MOT	MOTTE	MOT Total Errors	The total number of incorrect responses (errors) a subject made across all assessed trials.	-ve	-	MOT Voice / Tone	0	10

CAMBRIDGE COGNITION

Multitasking Test (MTT)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTT	MTTTC	MTT Total Correct	The number of trials for which the outcome was a correct response (subject pressed the correct button within the response window). Calculated across all assessed trials.	+ve	-	MTT Standard/Tone	0	160
MTT	MTTTIC	KEY: MTT Total Incorrect	The number of trials for which the outcome was an incorrect response (subject pressed the incorrect button within the response window). Calculated across all assessed trials.	-ve	-	MTT Standard/Tone	0	160
MTT	MTTMTBE	MTT Multitasking Block Errors	The number of trials in assessed block(s) in which both rules are used, and the trial outcome was an incorrect response.	-ve	-	MTT Standard/Tone	0	80
MTT	MTTSTBE	MTT Single Task Block Errors	The number of trials in assessed block(s) in which only a single rule is used, and the trial outcome was an incorrect response.	-ve	-	MTT Standard/Tone	0	80
MTT	MTTSBE	MTT Side Block Errors	The number of trials in assessed block(s) in which the rule is to respond to the side of the screen and the trial outcome was an incorrect response.	-ve	-	MTT Standard/Tone	0	40
MTT	MTTDBE	MTT Direction Block Errors	The number of trials in assessed block(s) in which the rule is to respond to the direction of the arrow and the trial outcome was an incorrect response.	-ve	-	MTT Standard/Tone	0	40
MTT	MTTCE	MTT Congruent Errors	The number of assessed congruent trials for which the trial outcome was an incorrect response (subject pressed the wrong button).	-ve	-	MTT Standard/Tone	0	80
MTT	MTTICE	MTT Incongruent Errors	The number of assessed incongruent trials for which the trial outcome was an incorrect response (subject pressed the wrong button).	-ve	-	MTT Standard/Tone	0	80
MTT	MTTSE	MTT Side Errors	The number of assessed trials where the outcome was an incorrect response (subject pressed the wrong button). Calculated for trials where the instruction was to respond to the side of the screen.	-ve	-	MTT Standard/Tone	0	80
MTT	MTTDE	MTT Direction Errors	The number of assessed trials where the outcome was an incorrect response (subject pressed the wrong button). Calculated for trials where the instruction was to respond to the direction of the arrow.	-ve	-	MTT Standard/Tone	0	80

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTT	MTTTOE	MTT Omission Errors	The number of trials for which the trial outcome was an omission error (no response).	-ve	-	MTT Standard/Tone	0	160
MTT	MTTTCE	MTT Commission Errors	The number of trials for which the trial outcome was a commission error (response when no stimulus present)	-ve	-	MTT Standard/Tone	0	160
MTT	MTTLM	MTT Reaction Latency (mean)	The mean latency of response (from stimulus appearance to button press). Calculated across all correct, assessed trials.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLMD	KEY: MTT Reaction Latency (Median)	The median latency of response (from stimulus appearance to button press). Calculated across all correct, assessed trials.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLSD	MTT Reaction Latency (SD)	The standard deviation of the latency of response (from stimulus appearance to button press). Calculated across all correct, assessed trials.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLMTM	MTT RL (Mean - Multitasking Blocks)	The mean latency of response (from stimulus appearance to button press) in assessed block(s) in which both rules are used.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLMTMD	MTT RL (Median - Multitasking Blocks)	The median latency of response (from stimulus appearance to button press) in assessed block(s) in which both rules are used.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLMTSD	MTT RL (SD - Multitasking Blocks)	The standard deviation of the latency of response (from stimulus appearance to button press) in assessed block(s) in which both rules are used.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLSTM	MTT RL (Mean - Single Task Blocks)	The mean latency of response (from stimulus appearance to button press) in assessed block(s) in which only one rule is used.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLSTMD	MTT RL (Median - Single Task Blocks)	The median latency of response (from stimulus appearance to button press) in assessed block(s) in which only one rule is used.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLSTSD	MTT RL (SD - Single Task Blocks)	The standard deviation of the latency of response (from stimulus appearance to button press) in assessed block(s) in which only one rule is used.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLSBM	MTT RL (Mean - Side Blocks)	The mean latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is to respond to the side of the screen.	-ve	ms	MTT Standard/Tone	100	2000

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTT	MTTLSBMD	MTT RL (Median – Side Blocks)	The median latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is to respond to the side of the screen.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLSBSD	MTT RL (SD - Side Blocks)	The standard deviation of the latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is to respond to the side of the screen.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLDBM	MTT RL (Mean - Direction Blocks)	The mean latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is to respond to the direction of the arrow.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLDBMD	MTT RL (Median - Direction Blocks)	The median latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is to respond to the direction of the arrow.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLDBSD	MTT RL (SD - Direction Blocks)	The standard deviation of the latency of response (from stimulus appearance to button press) in assessed block(s) in which the rule is to respond to the direction of the arrow.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLCM	MTT RL (Mean - Congruent)	The mean latency of response (from stimulus appearance to button press) on congruent trials in all assessed blocks.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLCMD	MTT RL (Median - Congruent)	The median latency of response (from stimulus appearance to button press) on congruent trials in all assessed blocks.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLCSD	MTT RL (SD - Congruent)	The standard deviation of the latency of response (from stimulus appearance to button press) on congruent trials in all assessed blocks.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLNOM	MTT RL (Mean - Incongruent)	The mean latency of response (from stimulus appearance to button press) on incongruent trials in all assessed blocks.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLNOMD	MTT RL (Median - Incongruent)	The median latency of response (from stimulus appearance to button press) on incongruent trials in all assessed blocks.	-ve	ms	MTT Standard/Tone	100	2000
	MTTLNOSD	MTT RL (SD – Incongruent)	The standard deviation of the latency of response (from stimulus appearance to button press) on incongruent trials in all assessed blocks.	-ve	ms	MTT Standard/Tone	100	2000

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTT	MTTLSDM	MTT RL (Mean - Side)	The mean latency of response (from stimulus appearance to button press). Calculated for trials where the instruction was to respond to the side of the screen.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLSDMD	MTT RL (Median - Side)	The median latency of response (from stimulus appearance to button press). Calculated for trials where the instruction was to respond to the side of the screen.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLSDSD	MTT RL (SD - Side)	The standard deviation of the latency of response (from stimulus appearance to button press). Calculated for trials where the instruction was to respond to the side of the screen.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLDM	MTT RL (Mean - Direction)	The mean latency of response (from stimulus appearance to button press). Calculated for trials where the instruction was to respond to the direction of the stimulus.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLDMD	MTT RL (Median - Direction)	The median latency of response (from stimulus appearance to button press). Calculated for trials where the instruction was to respond to the direction of the stimulus.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTLDSD	MTT RL (SD - Direction)	The standard deviation of the latency of response (from stimulus appearance to button press). Calculated for trials where the instruction was to respond to the direction of the stimulus.	-ve	ms	MTT Standard/Tone	100	2000
MTT	MTTICOST	MTT Incongruency Cost (Mean)	The difference between the mean latency of response (from stimulus appearance to button press) on the trials that were congruent versus the trials that were incongruent. Calculated by subtracting the mean congruent latency (in ms) from the mean incongruent latency. A positive score indicates that the subject is faster on congruent trials and a negative score indicates that the subject is faster on incongruent trials. A higher incongruency cost indicates that the subjects take longer to process conflicting information.	cx – see description	ms	MTT Standard/Tone	-1900	1900

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
MTT	MTTICMD	KEY: MTT Incongruency Cost (Median)	The difference between the median latency of response (from stimulus appearance to button press) on the trials that were congruent versus the trials that were incongruent. Calculated by subtracting the median congruent latency (in ms) from the median incongruent latency. A positive score indicates that the subject is faster on congruent trials and a negative score indicates that the subject is faster on incongruent trials. A higher incongruency cost indicates that the subjects take longer to process conflicting information.	cx – see description	ms	MTT Standard/Tone	-1900	1900
MTT	MTTMTCM	MTT Multitasking Cost (Mean)	The difference between the mean latency of response (from stimulus appearance to button press) during assessed blocks in which both rules are used versus assessed blocks in which only a single rule is used. Calculated by subtracting the mean latency of response during single task block(s) from the mean latency of response during multitasking block(s). A positive score indicates that the subject responds more slowly during multitasking blocks and indicates a higher cost of managing multiple sources of information.	cx – see description	ms	MTT Standard/Tone	-1900	1900
MTT	MTTMTCMD	KEY: MTT Multitasking Cost (Median)	The difference between the median latency of response (from stimulus appearance to button press) during assessed blocks in which both rules are used versus assessed blocks in which only a single rule is used. Calculated by subtracting the median latency of response during single task block(s) from the median latency of response during multitasking block(s). A positive score indicates that the subject responds more slowly during multitasking blocks and indicates a higher cost of managing multiple sources of information.	cx – see description	ms	MTT Standard/Tone	-1900	1900

N-Back (NBX)

Note: Whilst we do not have any 'KEY' outcome measures for the below task, the measures highlighted green are those that tend to be recommended as endpoints for the majority of studies.

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
NBX	NBX1FS	NBX 1-Back N-Back Score	A participant-facing performance score between 0-100 calculated from aggregating the correct hits and false alarm occurrences. Calculated across all assessed trials.	+ve	-	NBX 1-Back Full	0	100
NBX	NBX1TS	NBX 1-Back N-Back Score	A participant-facing performance score between 0-100 calculated from aggregating the correct hits and false alarm occurrences. Calculated across all assessed trials.	+ve	-	NBX 1-Back Full Two Second Display	0	100
NBX	NBX2FS	NBX 2-Back N-Back Score	A participant-facing performance score between 0-100 calculated from aggregating the correct hits and false alarm occurrences. Calculated across all assessed trials.	+ve	-	NBX 2-Back Full	0	100
NBX	NBX2TS	NBX 2-Back N-Back Score	A participant-facing performance score between 0-100 calculated from aggregating the correct hits and false alarm occurrences. Calculated across all assessed trials.	+ve	-	NBX 2-Back Full Two Second Display	0	100
NBX	NBX1FPH	NBX 1-Back Percentage Hits	The percentage of go trials in which the participant made a successful (timely) response to the target stimulus. Calculated across all assessed trials.	+ve	%	NBX 1-Back Full	0	100
NBX	NBX1TPH	NBX 1-Back Percentage Hits	The percentage of go trials in which the participant made a successful (timely) response to the target stimulus. Calculated across all assessed trials.	+ve	%	NBX 1-Back Full Two Second Display	0	100
NBX	NBX2FPH	NBX 2-Back Percentage Hits	The percentage of go trials in which the participant made a successful (timely) response to the target stimulus. Calculated across all assessed trials.	+ve	%	NBX 2-Back Full	0	100

NBX	NBX2TPH	NBX 2-Back Percentage Hits	The percentage of go trials in which the participant made a successful (timely) response to the target stimulus. Calculated across all assessed trials.	+ve	%	NBX 2-Back Full Two Second Display	0	100
NBX	NBX1FPFA	NBX 1-Back Percentage False Alarms	The percentage of stop trials in which the participant failed to withhold their timely response to the stimulus. Calculated across all assessed trials.	-ve	%	NBX 1-Back Full	0	100
NBX	NBX1TPFA	NBX 1-Back Percentage False Alarms	The percentage of stop trials in which the participant failed to withhold their timely response to the stimulus. Calculated across all assessed trials.	-ve	%	NBX 1-Back Full Two Second Display	0	100
NBX	NBX2FPFA	NBX 2-Back Percentage False Alarms	The percentage of stop trials in which the participant failed to withhold their timely response to the stimulus. Calculated across all assessed trials.	-ve	%	NBX 2-Back Full	0	100
NBX	NBX2TPFA	NBX 2-Back Percentage False Alarms	The percentage of stop trials in which the participant failed to withhold their timely response to the stimulus. Calculated across all assessed trials.	-ve	%	NBX 2-Back Full Two Second Display	0	100
NBX	NBX1FNH	NBX 1-Back Number of Hits	The number of go trials in which the participant made a successful (timely) response to the stimulus. Calculated across all assessed trials.	+ve	-	NBX 1-Back Full	0	21
NBX	NBX1TNH	NBX 1-Back Number of Hits	The number of go trials in which the participant made a successful (timely) response to the stimulus. Calculated across all assessed trials.	+ve	-	NBX 1-Back Full Two Second Display	0	21
NBX	NBX2FNH	NBX 2-Back Number of Hits	The number of go trials in which the participant made a successful (timely) response to the stimulus. Calculated across all assessed trials.	+ve	-	NBX 2-Back Full	0	21
NBX	NBX2TNH	NBX 2-Back Number of Hits	The number of go trials in which the participant made a successful (timely) response to the stimulus. Calculated across all assessed trials.	+ve	-	NBX 2-Back Full Two Second Display	0	21
NBX	NBX1FNFA	NBX 1-Back Number of False Alarms	The number of stop trials in which the participant failed to withhold their response to the stimulus. Calculated across all assessed trials.	-ve	-	NBX 1-Back Full	0	69
NBX	NBX1TNFA	NBX 1-Back Number of False Alarms	The number of stop trials in which the participant failed to withhold their response to the stimulus. Calculated across all assessed trials.	-ve	-	NBX 1-Back Full Two Second Display	0	69

NBX	NBX2FNFA	NBX 2-Back Number of False Alarms	The number of stop trials in which the participant failed to withhold their response to the stimulus. Calculated across all assessed trials.	-ve	-	NBX 2-Back Full	0	69
NBX	NBX2TNFA	NBX 2-Back Number of False Alarms	The number of stop trials in which the participant failed to withhold their response to the stimulus. Calculated across all assessed trials.	-ve	-	NBX 2-Back Full Two Second Display	0	69
NBX	NBX1FNM	NBX 1-Back Number of Misses	The number of go trials in which the participant failed to make a successful (timely) response to the stimulus. Calculated across all assessed trials.	-ve	-	NBX 1-Back Full	0	21
NBX	NBX1TNM	NBX 1-Back Number of Misses	The number of go trials in which the participant failed to make a successful (timely) response to the stimulus. Calculated across all assessed trials.	-ve	-	NBX 1-Back Full Two Second Display	0	21
NBX	NBX2FNM	NBX 2-Back Number of Misses	The number of go trials in which the participant failed to make a successful (timely) response to the stimulus. Calculated across all assessed trials.	-ve	-	NBX 2-Back Full	0	21
NBX	NBX2TNM	NBX 2-Back Number of Misses	The number of go trials in which the participant failed to make a successful (timely) response to the stimulus. Calculated across all assessed trials.	-ve	-	NBX 2-Back Full Two Second Display	0	21
NBX	NBX1FNCR	NBX 1-Back Number of Correct Rejections	The number of stop trials in which the participant correctly withheld their response to the stimulus. Calculated across all assessed trials.	+ve	-	NBX 1-Back Full	0	69
NBX	NBX1TNCR	NBX 1-Back Number of Correct Rejections	The number of stop trials in which the participant correctly withheld their response to the stimulus. Calculated across all assessed trials.	+ve	-	NBX 1-Back Full Two Second Display	0	69
NBX	NBX2FNCR	NBX 2-Back Number of Correct Rejections	The number of stop trials in which the participant correctly withheld their response to the stimulus. Calculated across all assessed trials.	+ve	-	NBX 2-Back Full	0	69
NBX	NBX2TNCR	NBX 2-Back Number of Correct Rejections	The number of stop trials in which the participant correctly withheld their response to the stimulus. Calculated across all assessed trials.	+ve	-	NBX 2-Back Full Two Second Display	0	69
NBX	NBX1FD	NBX 1-Back D Prime	D Prime is parametric measure of sensitivity for participant's discrimination between go and stop trials, including adjustment for extreme values. Calculated across all assessed trials.	+ve	-	NBX 1-Back Full	-4.2	4.15

NBX	NBX1TD	NBX 1-Back D Prime	D Prime is parametric measure of sensitivity for participant's discrimination between go and stop trials, including adjustment for extreme values. Calculated across all assessed trials.	+ve	-	NBX 1-Back Full Two Second Display	-4.2	4.15
NBX	NBX2FD	NBX 2-Back D Prime	D Prime is parametric measure of sensitivity for participant's discrimination between go and stop trials, including adjustment for extreme values. Calculated across all assessed trials.	+ve	-	NBX 2-Back Full	-4.2	4.15
NBX	NBX2TD	NBX 2-Back D Prime	D Prime is parametric measure of sensitivity for participant's discrimination between go and stop trials, including adjustment for extreme values. Calculated across all assessed trials.	+ve	-	NBX 2-Back Full Two Second Display	-4.2	4.15
NBX	NBX1FA	NBX 1-Back A Prime	A Prime is a non-parametric measure of sensitivity for participant's discrimination between go and stop trials. Calculated across all assessed trials.	+ve	-	NBX 1-Back Full	0	1
NBX	NBX1TA	NBX 1-Back A Prime	A Prime is a non-parametric measure of sensitivity for participant's discrimination between go and stop trials. Calculated across all assessed trials.	+ve	-	NBX 1-Back Full Two Second Display	0	1
NBX	NBX2FA	NBX 2-Back A Prime	A Prime is a non-parametric measure of sensitivity for participant's discrimination between go and stop trials. Calculated across all assessed trials.	+ve	-	NBX 2-Back Full	0	1
NBX	NBX2TA	NBX 2-Back A Prime	A Prime is a non-parametric measure of sensitivity for participant's discrimination between go and stop trials. Calculated across all assessed trials.	+ve	-	NBX 2-Back Full Two Second Display	0	1

CAMBRIDGE COGNITION

One Touch Stockings of Cambridge (OTS)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
OTS	OTSPSFC	KEY: OTS Problems Solved on First Choice	The total number of assessed trials where the subject chose the correct answer on their first attempt. Calculated across all assessed trials.	+ve	-	OTS Standard OTS Alternative OTS Short	0 0 0	15 20 10
OTS	OTSPSFC1	OTS Problems Solved 1st Choice (1 Move)	The total number of assessed trials where the subject chose the correct answer on their first attempt. Calculated across all assessed trials where the correct answer for the problem was 1 move.	+ve	-	OTS Standard OTS Alternative OTS Short	0 0 0	2 4 2
OTS	OTSPSFC2	OTS Problems Solved 1st Choice (2 Moves)	The total number of assessed trials where the subject chose the correct answer on their first attempt. Calculated across all assessed trials where the correct answer for the problem was 2 moves.	+ve	-	OTS Standard OTS Alternative OTS Short	0 0 0	2 4 2
OTS	OTSPSFC3	OTS Problems Solved 1st Choice (3 Moves)	The total number of assessed trials where the subject chose the correct answer on their first attempt. Calculated across all assessed trials where the correct answer for the problem was 3 moves.	+ve	-	OTS Standard OTS Alternative OTS Short	0 0 0	2 4 2
OTS	OTSPSFC4	OTS Problems Solved 1st Choice (4 Moves)	The total number of assessed trials where the subject chose the correct answer on their first attempt. Calculated across all assessed trials where the correct answer for the problem was 4 moves.	+ve	-	OTS Standard OTS Alternative OTS Short	0 0 0	3 4 2
OTS	OTSPSFC5	OTS Problems Solved 1st Choice (5 Moves)	The total number of assessed trials where the subject chose the correct answer on their first attempt. Calculated across all assessed trials where the correct answer for the problem was 5 moves.	+ve	-	OTS Standard OTS Alternative OTS Short	0 0 0	3 4 2
OTS	OTSPSFC6	OTS Problems Solved 1st Choice (6 Moves)	The total number of assessed trials where the subject chose the correct answer on their first attempt. Calculated across all assessed trials where the correct answer for the problem was 6 moves.	+ve	-	OTS Standard	0	3
OTS	OTSMCC	OTS Mean Choices to Correct	The mean number of box selections it took a subject before they chose the correct box. Calculated across all correct assessed trials.	-ve	-	OTS Standard OTS Alternative OTS Short	1 1 1	7 6 6
OTS	OTSMCC1	OTS Mean Choices to Correct (1 Move)	The mean number of box selections it took a subject before they chose the correct box. Calculated across all assessed trials where the correct answer for the problem was 1 move.	-ve	-	OTS Standard OTS Alternative OTS Short	1 1 1	7 6 6

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
OTS	OTSMCC2	OTS Mean Choices to Correct (2 Moves)	The mean number of box selections it took a subject before they chose the correct box. Calculated across all assessed trials where the correct answer for the problem was 2 moves.	-ve	-	OTS Standard OTS Alternative OTS Short	1 1 1	7 6 6
OTS	OTSMCC3	OTS Mean Choices to Correct (3 Moves)	The mean number of box selections it took a subject before they chose the correct box. Calculated across all assessed trials where the correct answer for the problem was 3 moves.	-ve	-	OTS Standard OTS Alternative OTS Short	1 1 1	7 6 6
OTS	OTSMCC4	OTS Mean Choices to Correct (4 Moves)	The mean number of box selections it took a subject before they chose the correct box. Calculated across all assessed trials where the correct answer for the problem was 4 moves.	-ve	-	OTS Standard OTS Alternative OTS Short	1 1 1	7 6 6
OTS	OTSMCC5	OTS Mean Choices to Correct (5 Moves)	The mean number of box selections it took a subject before they chose the correct box. Calculated across all assessed trials where the correct answer for the problem was 5 moves.	-ve	-	OTS Standard OTS Alternative OTS Short	1 1 1	7 6 6
OTS	OTSMCC6	OTS Mean Choices to Correct (6 Moves)	The mean number of box selections it took a subject before they chose the correct box. Calculated across all assessed trials where the correct answer for the problem was 6 moves.	-ve	-	OTS Standard	1	7
OTS	OTSMLFC	OTS Mean Latency to First Choice	The mean latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMDLFC	KEY: OTS Median Latency to First Choice	The median latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSLFCSD	OTS Latency to 1st Choice Standard Deviation (SD)	The standard deviation of the time between the appearance of the stocking balls and the first choice made by the subject. Calculated across all assessed trials.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMLF1	OTS Mean Latency to 1st Choice (1 Move)	The mean latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials where the correct answer for the problem was 1 move.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMDLF1	OTS Median Latency to 1st Choice (1 Move)	The median latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials where the correct answer for the problem was 1 move.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
OTS	OTSLF1SD	OTS Latency to 1st Choice Standard Deviation (SD) (1 Move)	The standard deviation of the time between the appearance of the stocking balls and the first choice made by the subject. Calculated across all assessed trials where the correct answer for the problem was 1 move.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMLF2	OTS Mean Latency to 1st Choice (2 Moves)	The mean latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials where the correct answer for the problem was 2 moves.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMDLF2	OTS Median Latency to 1st Choice (2 Moves)	The median latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials where the correct answer for the problem was 2 moves.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSLF2SD	OTS Latency to 1st Choice Standard Deviation (SD) (2 Moves)	The standard deviation of the time between the appearance of the stocking balls and the first choice made by the subject. Calculated across all assessed trials where the correct answer for the problem was 2 moves.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMLF3	OTS Mean Latency to 1st Choice (3 Moves)	The mean latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials where the correct answer for the problem was 3 moves.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMDLF3	OTS Median Latency to 1st Choice (3 Moves)	The median latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials where the correct answer for the problem was 3 moves.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSLF3SD	OTS Latency to 1st Choice Standard Deviation (SD) (3 Moves)	The standard deviation of the time between the appearance of the stocking balls and the first choice made by the subject. Calculated across all assessed trials where the correct answer for the problem was 3 moves.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMLF4	OTS Mean Latency to 1st Choice (4 Moves)	The mean latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials where the correct answer for the problem was 4 moves.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMDLF4	OTS Median Latency to 1st Choice (4 Moves)	The median latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials where the correct answer for the problem was 4 moves.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
OTS	OTSLF4SD	OTS Latency to 1st Choice Standard Deviation (SD) (4 Moves)	The standard deviation of the time between the appearance of the stocking balls and the first choice made by the subject. Calculated across all assessed trials where the correct answer for the problem was 4 moves.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMLF5	OTS Mean Latency to 1st Choice (5 Moves)	The mean latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials where the correct answer for the problem was 5 moves.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMDLF5	OTS Median Latency to 1st Choice (5 Moves)	The median latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials where the correct answer for the problem was 5 moves.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSLF5SD	OTS Latency to 1st Choice Standard Deviation (SD) (5 Moves)	The standard deviation of the time between the appearance of the stocking balls and the first choice made by the subject. Calculated across all assessed trials where the correct answer for the problem was 5 moves.	cx	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMLF6	OTS Mean Latency to 1st Choice (6 Moves)	The mean latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials where the correct answer for the problem was 6 moves.	cx	ms	OTS Standard	0	∞
OTS	OTSMDLF6	OTS Median Latency to 1st Choice (6 Moves)	The median latency, measured from the appearance of the stocking balls until the first box choice was made by the subject. Calculated across all assessed trials where the correct answer for the problem was 6 moves.	cx	ms	OTS Standard	0	∞
OTS	OTSLF6SD	OTS Latency to 1st Choice Standard Deviation (SD) (6 Moves)	The standard deviation of the time between the appearance of the stocking balls and the first choice made by the subject. Calculated across all assessed trials where the correct answer for the problem was 6 moves.	cx	ms	OTS Standard	0	∞
OTS	OTSMLC	OTS Mean Latency to Correct	The mean latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all assessed trials.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMDLC	OTS Median Latency to Correct	The median latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all assessed trials.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
OTS	OTSLCSD	OTS Latency to Correct Standard Deviation (SD)	The standard deviation of the response latencies, calculated from the appearance of the stocking balls until the correct box choice was made. Calculated across all assessed trials.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMLC1	OTS Mean Latency to Correct (1 Move)	The mean latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all trials where 1 move was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMDLC1	OTS Median Latency to Correct (1 Move)	The median latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all trials where 1 move was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSLC1SD	OTS Latency to Correct Standard Deviation (SD) (1 Move)	The standard deviation of the response latencies, calculated from the appearance of the stocking balls until the correct box choice was made. Calculated across all trials where 1 move was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMLC2	OTS Mean Latency to Correct (2 Moves)	The mean latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all trials where 2 moves was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMDLC2	OTS Median Latency to Correct (2 Moves)	The median latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all trials where 2 moves was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSLC2SD	OTS Latency to Correct Standard Deviation (SD) (2 Moves)	The standard deviation of the response latencies, calculated from the appearance of the stocking balls until the correct box choice was made. Calculated across all trials where 2 moves was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMLC3	OTS Mean Latency to Correct (3 Moves)	The mean latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all trials where 3 moves was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMDLC3	OTS Median Latency to Correct (3 Moves)	The median latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all trials where 3 moves was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
OTS	OTSLC3SD	OTS Latency to Correct Standard Deviation (SD) (3 Moves)	The standard deviation of the response latencies, calculated from the appearance of the stocking balls until the correct box choice was made. Calculated across all trials where 3 moves was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMLC4	OTS Mean Latency to Correct (4 Moves)	The mean latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all trials where 4 moves was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMDLC4	OTS Median Latency to Correct (4 Moves)	The median latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all trials where 4 moves was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSLC4SD	OTS Latency to Correct Standard Deviation (SD) (4 Moves)	The standard deviation of the response latencies, calculated from the appearance of the stocking balls until the correct box choice was made. Calculated across all trials where 4 moves was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMLC5	OTS Mean Latency to Correct (5 Moves)	The mean latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all trials where 5 moves was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMDLC5	OTS Median Latency to Correct (5 Moves)	The median latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all trials where 5 moves was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSLC5SD	OTS Latency to Correct Standard Deviation (SD) (5 Moves)	The standard deviation of the response latencies, calculated from the appearance of the stocking balls until the correct box choice was made. Calculated across all trials where 5 moves was the correct answer.	-ve	ms	OTS Standard OTS Alternative OTS Short	0	∞
OTS	OTSMLC6	OTS Mean Latency to Correct (6 Moves)	The mean latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all trials where 6 moves was the correct answer.	-ve	ms	OTS Standard	0	∞
OTS	OTSMDLC6	OTS Median Latency to Correct (6 Moves)	The median latency, measured from the appearance of the stocking balls until the correct box choice was made by the subject. Calculated across all trials where 6 moves was the correct answer.	-ve	ms	OTS Standard	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
OTS	OTSLC6SD	OTS Latency to Correct Standard Deviation (SD) (6 Moves)	The standard deviation of the response latencies, calculated from the appearance of the stocking balls until the correct box choice was made. Calculated across trials where 6 moves was the correct answer.	-ve	ms	OTS Standard	0	∞
OTS	OTSPEGC	OTS Probability of Error Given Correct	The probability of an error occurring when the previous trial was responded to correctly.	-ve		OTS Standard OTS Alternative OTS Short	0	1
OTS	OTSPEGE	OTS Probability of Error Given Error	The probability of an error occurring when the previous trial was responded to incorrectly.	-ve		OTS Standard OTS Alternative OTS Short	0	1

Paired Associates Learning (PAL)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
PAL	PALTEA	KEY: PAL Total Errors (Adjusted)	The number of times the subject chose the incorrect box for a stimulus on assessment problems (PALTE), plus an adjustment for the estimated number of errors they would have made on any problems, attempts and recalls they did not reach. This measure allows you to compare performance on errors made across all subjects regardless of those who terminated early versus those completing the final stage of the task.	-ve	-	PAL High Functioning PAL Recommended Standard	0 0	36 70
PAL	PALTEA28 *Identical to PALTEA	KEY: PAL Total Errors (Adjusted)	The number of times the subject chose the incorrect box for a stimulus on assessment problems (PALTE), plus an adjustment for the estimated number of errors they would have made on any problems, attempts and recalls they did not reach. This measure allows you to compare performance on errors made across all subjects regardless of those who terminated early versus those completing the final stage of the task. In this task variant PALTEA does not include 12 box level to provide a direct comparison to Recommended Standard.	-ve	-	PAL Recommended Standard Tone PAL Recommended Standard Extended/Tone	0 0	70 70
PAL	PALTEA2	PAL Total Errors 2 Shapes (Adjusted)	The number of times the subject chose the incorrect box for a stimulus on assessment problems, where the number of shapes required to remember was equal to 2 (PALTE2), plus an adjustment for the estimated number of errors they would have made on any other 2 pattern problems, attempts and recalls they did not reach.	-ve	-	PAL Recommended Standard/Tone PAL Recommended Standard Extended/Tone	0 0	8 8

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
PAL	PALTEA4	PAL Total Errors 4 Shapes (Adjusted)	The number of times the subject chose the incorrect box for a stimulus on assessment problems, where the number of shapes was equal to 4 (PALTE4), plus an adjustment for the estimated number of errors they would have made on any other 4 pattern problems, attempts and recalls they did not reach.	-ve	-	PAL Recommended Standard/Tone PAL Recommended Standard Extended/Tone	0 0	16 16
PAL	PALTEA6	PAL Total Errors 6 Shapes (Adjusted)	The number of times the subject chose the incorrect box for a stimulus on assessment problems, where the number of shapes was equal to 6 (PALTE6), plus an adjustment for the estimated number of errors they would have made on any other 6 pattern problems, attempts and recalls they did not reach.	-ve	-	PAL Recommended Standard/Tone PAL Recommended Standard Extended/Tone	0 0	24 24
PAL	PALTEA8	PAL Total Errors 8 Shapes (Adjusted)	The number of times the subject chose the incorrect box for a stimulus on assessment problems, where the number of shapes was equal to 8 (PALTE8), plus an adjustment for the estimated number of errors they would have made on any other 8 pattern problems, attempts and recalls they did not reach.	-ve	-	PAL Recommended Standard/Tone PAL Recommended Standard Extended/Tone	0 0	32 32
PAL	PALTEA12	PAL Total Errors 12 Shapes (Adjusted)	The number of times the subject chose the incorrect box for a stimulus on assessment problems, where the number of shapes was equal to 12, plus an adjustment for the estimated number of errors they would have made on any other 12 pattern problems, attempts and recalls they did not reach.	-ve	-	PAL Recommended Standard Extended/Tone	0	48
PAL	PALTE	PAL Total Errors	The total number of times a subject selected an incorrect box when attempting to recall a pattern location. Calculated across all assessed trials.	-ve (depends, in part, on the stage of the task reached)	-	PAL Recommended Standard/Tone	0	68

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
PAL	PALTE28 *Identical to PALTE	PAL Total Errors	The total number of times a subject selected an incorrect box when attempting to recall a pattern location. Calculated across all assessed trials. Does not include 12 box level to provide a direct comparison to Recommended Standard.	-ve (depends, in part, on the stage of the task reached)	-	PAL Recommended Standard Extended/Tone	0	68
PAL	PALTE2	PAL Total Errors 2 Patterns	The total number of times a subject selected an incorrect box when attempting to recall a pattern location on trials containing a total of 2 patterns. Calculated across all 2-pattern assessed trials.	-ve	-	PAL Recommended Standard/Tone PAL Recommended Standard Extended/Tone	0 0	8 8
PAL	PALTE4	PAL Total Errors 4 Patterns	The total number of times a subject selected an incorrect box when attempting to recall a pattern location on trials containing a total of 4 patterns. Calculated across all 4-pattern assessed trials.	-ve (depends, in part, on the stage of the task reached)	-	PAL Recommended Standard/Tone PAL Recommended Standard Extended/Tone	0 0	16 16
PAL	PALTE6	PAL Total Errors 6 Patterns	The total number of times a subject selected an incorrect box when attempting to recall a pattern location on trials containing a total of 6 patterns. Calculated across all 6-pattern assessed trials.	-ve (depends, in part, on the stage of the task reached)	-	PAL Recommended Standard/Tone PAL Recommended Standard Extended/Tone	0 0	24 24

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
PAL	PALTE8	PAL Total Errors 8 Patterns	The total number of times a subject selected an incorrect box when attempting to recall a pattern location on trials containing a total of 8 patterns. Calculated across all 8-pattern assessed trials.	-ve (depends, in part, on the stage of the task reached)	-	PAL Recommended Standard/Tone PAL Recommended Standard Extended/Tone	0 0	32 32
PAL	PALTE12	PAL Total Errors 12 Patterns	The total number of times a subject selected an incorrect box when attempting to recall a pattern location on trials containing a total of 12 patterns. Calculated across all 12-pattern assessed trials.	-ve (depends, in part, on the stage of the task reached)	-	PAL Recommended Standard Extended/Tone	0	48
PAL	PALTA	PAL Total Attempts	The total number of attempts made (but not necessarily completed) by the subject during assessment problems.	cx – see description	-	PAL Recommended Standard/Tone PAL High Functioning	4 1	16 3
PAL	PALTA28 *Identical to PALTA	PAL Total Attempts	The total number of attempts made (but not necessarily completed) by the subject during assessment problems. Does not include 12 box level to provide a direct comparison to Recommended Standard.	cx – see description	-	PAL Recommended Standard Extended/Tone	4	16
PAL	PALTA2	PAL Total Attempts 2 Patterns	The total number of attempts made (but not necessarily completed) by the subject during assessment problems containing a total of 2 shapes to recall.	-ve	-	PAL Recommended Standard/Tone PAL Recommended Standard Extended/Tone	1 1	4 4

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
PAL	PALTA4	PAL Total Attempts 4 Patterns	The total number of attempts made (but not necessarily completed) by the subject during assessment problems containing a total of 4 shapes to recall.	-ve (when greater than zero)	-	PAL Recommended Standard/Tone PAL Recommended Standard Extended/Tone	0 0	4 4
PAL	PALTA6	PAL Total Attempts 6 Patterns	The total number of attempts made (but not necessarily completed) by the subject during assessment problems containing a total of 6 shapes to recall.	-ve (when greater than zero)	-	PAL Recommended Standard/Tone PAL Recommended Standard Extended/Tone	0 0	4 4
PAL	PALTA8	PAL Total Attempts 8 Patterns	The total number of attempts made (but not necessarily completed) by the subject during assessment problems containing a total of 8 shapes to recall.	-ve (when greater than zero)	-	PAL Recommended Standard/Tone PAL Recommended Standard Extended/Tone	0 0	4 4
PAL	PALTA12	PAL Total Attempts 12 Patterns	The total number of attempts made (but not necessarily completed) by the subject during assessment problems containing a total of 12 shapes to recall.	-ve (when greater than zero)	-	PAL Recommended Standard Extended/Tone	0	4
PAL	PALMETS	PAL Mean Errors to Success	The mean number of attempts made by a subject needed for them to successfully complete the stage.	-ve (depends, in part, on the stage of the task reached)	-	PAL Recommended Standard/Tone	0	15

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
PAL	PALMETS28 *Identical to PALMETS	PAL Mean Errors to Success	The mean number of attempts made by a subject needed for them to successfully complete the stage. Does not include 12 box level to provide a direct comparison to Recommended Standard.	-ve (depends, in part, on the stage of the task reached)	-	PAL Recommended Standard Extended/Tone	0	15
PAL	PALFAMS	KEY: PAL First Attempt Memory Score	The number of times a subject chose the correct box on their first attempt when recalling the pattern locations. Calculated across all assessed trials.	+ve	-	PAL Recommended Standard/Tone PAL High Functioning	0 0	20 12
PAL	PALFAMS28 *Identical to PALFAMS	KEY: PAL First Attempt Memory Score	The number of times a subject chose the correct box on their first attempt when recalling the pattern locations. Calculated across assessed trials, omitting 12 box level to provide a direct comparison to Recommended Standard.	+ve	-	PAL Recommended Standard Extended/Tone	0	20
PAL	PALNPR PALNPR28 PALNPR212	PAL Number of Patterns Reached	The number of patterns presented to the subject on the last problem they reached.	+ve	-	PAL Recommended Standard/Tone PAL Recommended Standard Extended/Tone	2 2	8 12

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Pattern Recognition Memory (PRM)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
PRM	PRMPCI	KEY: PRM Percent Correct Immediate	The number of correct patterns selected by the subject in the immediate forced-choice condition, expressed as a percentage.	+ve	%	PRM Recommended Standard PRM Recommended Standard 18 / Extended	0	100
PRM	PRMMCLI	PRM Mean Correct Latency Immediate	The mean latency for a subject to correctly select the appropriate pattern during the immediate forced-choice condition, measured in milliseconds.	-ve	ms	PRM Recommended Standard PRM Recommended Standard 18 / Extended	0	∞
PRM	PRMMDCLI	PRM Median Correct Latency Immediate	The median latency for a subject to correctly select the appropriate pattern during the immediate forced-choice condition, measured in milliseconds.	-ve	ms	PRM Recommended Standard PRM Recommended Standard 18 / Extended	0	∞
PRM	PRMCLSDI	PRM Correct Latency (SD) Immediate	The standard deviation of the latency for a subject to correctly select the appropriate pattern during the immediate forced-choice condition, measured in milliseconds.	-ve	ms	PRM Recommended Standard PRM Recommended Standard 18 / Extended	0	∞
PRM	PRMPCD	KEY: PRM Percent Correct Delayed	The number of correct patterns selected by the subject in the delayed forced-choice condition, expressed as a percentage.	+ve	%	PRM Recommended Standard PRM Recommended Standard 18 / Extended	0	100

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
PRM	PRMMCLD	PRM Mean Correct Latency Delayed	The mean latency for a subject to correctly select the appropriate pattern during the delayed forced-choice condition, measured in milliseconds.	-ve	ms	PRM Recommended Standard PRM Recommended Standard 18 / Extended	0	∞
PRM	PRMMDCLD	PRM Median Correct Latency Delayed	The median latency for a subject to correctly select the appropriate pattern during the delayed forced-choice condition, measured in milliseconds.	-ve	ms	PRM Recommended Standard PRM Recommended Standard 18 / Extended	0	∞
PRM	PRMCLSDD	PRM Correct Latency (SD) Delayed	The standard deviation of the latency for a subject to correctly select the appropriate pattern during the delayed forced-choice condition, measured in miliseconds.	-ve	ms	PRM Recommended Standard PRM Recommended Standard 18 / Extended	0	∞
PRM	PRMTSDSP	PRM Time Since Delayed Stimuli Presentation	The length of time between the end of the stimuli presentation for the delayed phase and the start of the delayed forced-choice condition.	N/A	HH:MM:SS	PRM Recommended Standard PRM Recommended Standard 18 / Extended	00:20:00	∞

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Psychomotor Vigilance Task (PVT)

Note: Whilst we do not have any 'KEY' outcome measures for the below task, the measures highlighted green are those that tend to be recommended as endpoints for the majority of studies.

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
PVT	PVTLTH	PVT Total Hits	The number of trials for which the outcome was a correct response (subject pressed the correct button within the response window). Calculated across all assessed trials.	+ve	-	PVT Long Demo Enabled	0	100
						PVT Long Demo Disabled	0	100
						PVT Long Demo Enabled 2.0	0	100
						PVT Long Demo Disabled 2.0	0	100
PVT	PVTLTFP	PVT Total False Positives	The number of trials for which the outcome was a false positive (subject pressed the button during the ISI). Calculated across all assessed trials.	-ve	-	PVT Long Demo Enabled	0	35
						PVT Long Demo Disabled	0	35
						PVT Long Demo Enabled 2.0	0	35
						PVT Long Demo Disabled 2.0	0	35
PVT	PVTLTTO	PVT Total Timeouts	The number of trials where the participant did not respond before the timeout. Calculated across all assessed trials.	-ve	-	PVT Long Demo Enabled	0	100
						PVT Long Demo Disabled	0	100

						PVT Long Demo Enabled 2.0	0	100
						PVT Long Demo Disabled 2.0	0	100
PVT	PVTLMRT	PVT Reaction Latency (Mean)	The mean latency of response in milliseconds (from stimulus appearance to button press). Calculated across all correct, assessed trials.	-ve	ms	PVT Long Demo Enabled	1	999
						PVT Long Demo Disabled	1	999
						PVT Long Demo Enabled 2.0	1	999
						PVT Long Demo Disabled 2.0	1	999
PVT	PVTLCV	PVT Reaction Latency (Coefficient of Variation)	The variation in latency of response (from stimulus appearance to button press), divided by the mean in latency of response. Calculated across all correct, assessed trials. Coefficient of variation is expressed as a percentage, i.e. it is calculated as: (sample standard deviation / mean) * 100.	-ve	%	PVT Long Demo Enabled	0	100
						PVT Long Demo Disabled	0	100
						PVT Long Demo Enabled 2.0	0	100
						PVT Long Demo Disabled 2.0	0	100
PVT	PVTLMPL	PVT Mean Press Length	The mean length of time in milliseconds that the subject touched the screen when responding to the stimulus. Calculated across all correct, assessed trials.	-ve	ms	PVT Long Demo Enabled	1	999
						PVT Long Demo Disabled	1	999
						PVT Long Demo Enabled 2.0	1	999
						PVT Long Demo Disabled 2.0	1	999

PVT	PVTLMDRT	RVT Reaction Latency (Median)	The median latency of response in milliseconds (from stimulus appearance to button press). Calculated across all correct, assessed trials.	-ve	ms	PVT Long Demo Enabled 2.0	1	999
						PVT Long Demo Disabled 2.0	1	999
PVT	PVTLMRRT	PVT Reciprocal Reaction Latency (Mean)	The mean latency of response in milliseconds (from stimulus appearance to button press), in units of '1/seconds'. Calculated across all correct, assessed trials.	-ve	1/seconds	PVT Long Demo Enabled 2.0		
						PVT Long Demo Disabled 2.0		
PVT	PVTLRRTS	PVT Slowest 10% Reciprocal Reaction Latency (Mean)	The mean of the slowest 10% latency of response in milliseconds (from stimulus appearance to button press), in units of '1/seconds'. Calculated across all correct, assessed trials.	-ve	1/seconds	PVT Long Demo Enabled 2.0		
						PVT Long Demo Disabled 2.0		
PVT	PVTLRRTF	PVT Fastest 10% Reciprocal Reaction Latency (Mean)	The mean of the fastest 10% latency of response in milliseconds (from stimulus appearance to button press), in units of '1/seconds'. Calculated across all correct, assessed trials.	-ve	1/seconds	PVT Long Demo Enabled 2.0		
						PVT Long Demo Disabled 2.0		
PVT	PVTLTL	PVT Total Lapses	The number of trials for which the outcome was a correct response, but the response time was greater than 500 ms (subject pressed the correct button within the response window, but more than 500ms following stimuli presentation). Calculated across all assessed trials.	cx	-	PVT Long Demo Enabled 2.0	0	100
						PVT Long Demo Disabled 2.0	0	100

Reaction Time Task (RTI)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
RTI	RTISMRT	RTI Simple Mean Reaction Time	The mean time taken for a subject to release the response button after the presentation of a target stimulus. Calculated across correct, assessed trials in which the stimulus could appear in one location only. Measured in milliseconds.	-ve	ms	RTI Simple and Five-Choice/Tone	100	5100
RTI	RTISMDRT	KEY: RTI Simple Median Reaction Time	The median time taken for a subject to release the response button after the presentation of a target stimulus. Calculated across correct, assessed trials in which the stimulus could appear in one location only. Measured in milliseconds.	-ve	ms	RTI Simple and Five-Choice/Tone	100	5100
RTI	RTISRTSD	RTI Standard Deviation (SD) Simple Reaction Time	The standard deviation of the time taken for a subject to release the response button after the presentation of a target stimulus. Calculated across correct, assessed trials in which the stimulus could appear in one location only. Measured in milliseconds.	-ve	ms	RTI Simple and Five-Choice/Tone	0	~2542
RTI	RTISMMT	RTI Simple Mean Movement Time	The mean time taken for a subject to select the target stimulus after releasing the response button. Calculated across all correct, assessed trials in which the stimulus could appear in one location only. Measured in milliseconds.	-ve	ms	RTI Simple and Five-Choice/Tone	100	5100
RTI	RTISMDMT	KEY: RTI Simple Median Movement Time	The median time taken for a subject to select the target stimulus after releasing the response button. Calculated across all correct, assessed trials in which the stimulus could appear in one location only. Measured in milliseconds.	-ve	ms	RTI Simple and Five-Choice/Tone	100	5100
RTI	RTISMTSD	RTI Standard Deviation (SD) Simple Movement Time	The standard deviation of the time taken for a subject to select the target stimulus after releasing the response button. Calculated across all correct, assessed trials in which the stimulus could appear in one location only. Measured in milliseconds.	-ve	ms	RTI Simple and Five-Choice/Tone	0	~2542

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
RTI	RTISES	RTI Simple Error Score (All)	The total number of trials where the subject made any form of response error. This measure is calculated through summing the inaccurate, omission and premature errors, alongside two other possible errors not individually output. These two additional errors are the use of multiple fingers and dragging a finger outside of a response box. Calculated across all assessment trials in which the stimulus could appear in one location only. Please note that this outcome measure combines multiple, separate cognitive functions (i.e. an omission error is not psychologically the same as a premature error) and is therefore not a recommended measure for standard practice.	-ve	-	RTI Simple and Five-Choice/Tone	0	30
RTI	RTISESI	RTI Simple Error Score (Inaccurate)	The total number of trials where the subject made an inaccurate response. Calculated across all assessment trials in which the stimulus could appear in one location only.	-ve	-	RTI Simple and Five-Choice/Tone	0	30
RTI	RTISESNR	RTI Simple Error Score (No Response)	The total number of trials where the subject made no response after the presentation of the target stimulus. Calculated across all assessment trials in which the stimulus could appear in one location only.	-ve	-	RTI Simple and Five-Choice/Tone	0	30
RTI	RTISESPR	RTI Simple Error Score (Premature)	The total number of trials where the subject made a response before the presentation of the target stimulus. Calculated across all assessment trials in which the stimulus could appear in one location only.	-ve	-	RTI Simple and Five-Choice/Tone	0	30
RTI	RTIFMRT	RTI Mean Five-Choice Reaction Time	The mean duration it took for a subject to release the response button after the presentation of a target stimulus. Calculated across correct, assessed trials in which the stimulus could appear in any one of five locations. Measured in milliseconds.	-ve	ms	RTI Simple and Five-Choice/Tone RTI Five-Choice	100	5100
RTI	RTIFMDRT	KEY: RTI Median Five-Choice Reaction Time	The median duration it took for a subject to release the response button after the presentation of a target stimulus. Calculated across correct, assessed trials in which the stimulus could appear in any one of five locations. Measured in milliseconds.	-ve	ms	RTI Simple and Five-Choice/Tone RTI Five-Choice	100	5100
RTI	RTIFRTSD	RTI Standard Deviation (SD) Five-Choice Reaction Time	The standard deviation of the time taken for a subject to release the response button after the presentation of a target stimulus. Calculated across correct, assessed trials in which the stimulus could appear in any one of five locations. Measured in milliseconds.	-ve	ms	RTI Simple and Five-Choice/Tone RTI Five-Choice	0	~2542

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
RTI	RTIFMMT	RTI Mean Five-Choice Movement Time	The mean time taken for a subject to select the target stimulus after releasing the response button. Calculated across all correct, assessed trials in which the stimulus could appear in any one of five locations. Measured in milliseconds.	-ve	ms	RTI Simple and Five-Choice/Tone RTI Five-Choice	100	5100
RTI	RTIFMDMT	KEY: RTI Median Five-Choice Movement Time	The median time taken for a subject to select the target stimulus after releasing the response button. Calculated across all correct, assessed trials in which the stimulus could appear in any one of five locations. Measured in milliseconds.	-ve	ms	RTI Simple and Five-Choice/Tone RTI Five-Choice	100	5100
RTI	RTIFMTSD	RTI Standard Deviation (SD) Five-Choice Movement Time	The standard deviation of the time taken for a subject to select the target stimulus after releasing the response button. Calculated across all correct, assessed trials in which the stimulus could appear in any one of five locations. Measured in milliseconds.	-ve	ms	RTI Simple and Five-Choice/Tone RTI Five-Choice	0	~2542
RTI	RTIFTES	RTI Total Error Score (Five-Choice)	The total number of trials where the subject made any form of response error. This measure is calculated through summing the inaccurate, incorrect location, omission and premature errors, alongside two other possible errors not individually output. These two additional errors are the use of multiple fingers and dragging a finger outside of a response box. Calculated across all assessment trials in which the stimulus could appear in any one of five locations. Please note that this outcome measure combines multiple, separate cognitive functions (i.e. an omission error is not psychologically the same as a premature error) and is therefore not a recommended measure for standard practice.	-ve	-	RTI Five-Choice	0	30
RTI	RTIFTES	RTI Total Error Score (Five-Choice) *Same name as above but different description	The total number of trials where the subject made any form of response error. Response errors include inaccurate responses, premature responses, no response, incorrect location responses (five-choice only), using multiple fingers and finger-dragging. Calculated across all assessment trials in which the stimulus could appear in any one of five locations.	-ve	-	RTI Simple and Five-Choice/Tone	0	30
RTI	RTIFESI	RTI Five-Choice Error Score (inaccurate)	The total number of trials where the subject made an inaccurate response. Calculated across all assessment trials in which the stimulus could appear in any one of five locations.	-ve	-	RTI Simple and Five-Choice/Tone RTI Five-Choice	0	30

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
RTI	RTIFESIL	RTI Five-Choice Error Score (Incorrect Location)	The total number of trials where the subject selected an incorrect response stimulus versus the stimulus which actually flashed yellow on screen. Calculated across all assessment trials in which the stimulus could appear in any one of five locations.	-ve	-	RTI Simple and Five-Choice/Tone RTI Five-Choice	0	30
RTI	RTIFESNR	RTI Five-Choice Error Score (No Response)	The total number of trials where the subject made no response after the presentation of the target stimulus. Calculated across all assessment trials in which the stimulus could appear in any one of five locations.	-ve	-	RTI Simple and Five-Choice/Tone RTI Five-Choice	0	30
RTI	RTIFESPR	RTI Five-Choice Error Score (Premature)	The total number of trials where the subject made a response before the presentation of the target stimulus. Calculated across all assessment trials in which the stimulus could appear in any one of five locations.	-ve	-	RTI Simple and Five-Choice/Tone RTI Five-Choice	0	30

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Rapid Visual Information Processing (RVP)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
RVP	RVPA	KEY: RVP A'	A' (A prime) is the signal detection measure of a subject's sensitivity to the target sequence (string of three numbers), regardless of response tendency (the expected range is 0.00 to 1.00; bad to good). In essence, this metric is a measure of how good the subject is at detecting target sequences.	+ve	-	RVP 3 Targets/Tone RVP 1 Target/Tone	0	1
RVP	RVPPH	RVP Probability of Hit	The number of target sequences during assessment blocks that were correctly responded to within the time allowed, divided by the number of target sequences during assessment blocks. (Correct hits ÷ total number of sequences)	+ve	-	RVP 3 Targets/Tone RVP 1 Target/Tone	0	1
RVP	RVPPFA	KEY: RVP Probability of False Alarm	The number of sequence presentations that were false alarms divided by the number of sequence presentations that were false alarms plus the number of sequence presentations that were correct rejections (False Alarms ÷ (False Alarms + Correct Rejections))	-ve	-	RVP 3 Targets/Tone RVP 1 Target/Tone	0	1
RVP	RVPTH	RVP Total Hits	The total number of target sequences that were correctly responded to (Correct Hits) within the allowed time during assessment sequence blocks.	+ve	-	RVP 3 Targets/Tone RVP 1 Target/Tone	0	54
RVP	RVPTFA	RVP Total False Alarms	The total number of stimulus presentations during assessment blocks that were false alarms.	-ve	-	RVP 3 Targets/Tone RVP 1 Target/Tone	0	546
RVP	RVPTM	RVP Total Misses	The total number of target sequences that were not responded to within the allowed time during assessment sequence blocks.	-ve	-	RVP 3 Targets/Tone RVP 1 Target/Tone	0	54

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
RVP	RVPML	RVP Mean Response Latency	The mean response latency of a correct response to a target sequence. Calculated across all assessed blocks	-ve	ms	RVP 3 Targets/Tone RVP 1 Target/Tone	100	1900
RVP	RVPMDL	KEY: RVP Median Response Latency	The median response latency on trials where the subject responded correctly. Calculated across all assessed trials.	-ve	ms	RVP 3 Targets/Tone RVP 1 Target/Tone	100	1900
RVP	RVPLSD	RVP Response Latency (SD)	The standard deviation of response latency on trials where the subject responded correctly. Calculated across all assessed trials.	-ve	ms	RVP 3 Targets/Tone RVP 1 Target/Tone	0	~908

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Stockings of Cambridge (SOC)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max

SOC	SOCPR	SOC Problem Reached	The number of problems in which the solution was successfully found within the maximum moves limit, regardless of whether the maximum moves limit was reached on any problem.	+ve	-	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	20

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SOC	SOCNMR	SOC Number of Moves Reached	The minimum number of moves needed to complete the last problem the subject reached.	+ve	-	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	2	5

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SOC	SOCPSMMT	KEY: SOC Problems Solved in Minimum Moves Total (All Moves)	The number of assessed problems that the subject successfully completed in the minimum possible number of moves. Calculated over all assessed trials.	+ve	-	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	12

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SOC	SOCPSMM 2	SOC Problems Solved in Minimum Moves (2 Moves)	The number of assessed problems that the subject successfully completed in the minimum possible number of moves. Calculated over all "2 Moves" assessed trials.	+ve	-	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	2
SOC	SOCPSMM 3	SOC Problems Solved in Minimum Moves (3 Moves)	The number of assessed problems that the subject successfully completed in the minimum possible number of moves. Calculated over all "3 Moves" assessed trials.	+ve	-	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	2
SOC	SOCPSMM 4	SOC Problems Solved in Minimum Moves (4 Moves)	The number of assessed problems that the subject successfully completed in the minimum possible number of moves. Calculated over all "4 Moves" assessed trials.	+ve	-	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	4

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SOC	SOCPSMM5	SOC Problems Solved in Minimum Moves (5 Moves)	The number of assessed problems that the subject successfully completed in the minimum possible number of moves. Calculated over all "5 Moves" assessed trials.	+ve	-	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	4
SOC	SOCMNM2	SOC Mean Moves (2 Moves)	The mean number of moves that the subject required to complete problems. This measure is calculated over 2 Moves assessed problems only.	-ve	-	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	2	5
SOC	SOCMNM3	SOC Mean Moves (3 Moves)	The mean number of moves that the subject required to complete problems. This measure is calculated over 3 Moves assessed problems only.	-ve	-	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	3	7
SOC	SOCMNM4	SOC Mean Moves (4 Moves)	The mean number of moves that the subject required to complete problems. This measure is calculated over 4 Moves assessed problems only.	-ve	-	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	4	9

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SOC	SOCMNM5	KEY: SOC Mean Moves (5 Moves)	The mean number of moves that the subject required to complete problems. This measure is calculated over 5 Moves assessed problems only.	-ve	-	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	5	12
SOC	SOCITMD2	SOC Initial Thinking Time Median (2 Moves)	The median difference in the time taken to select the first ball for the same problem in the solve condition compared to the follow condition, calculated across all assessed problems with 2 moves. Subjects are encouraged to plan their moves before actually starting to solve the problems. Therefore, this measure provides an indication of the time taken to plan the problem's solution, discounting movement time. For any given problem, the initial thinking time score may be 0 if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞
SOC	SOCITMD3	SOC Initial Thinking Time Median (3 Moves)	The median difference in the time taken to select the first ball for the same problem in the solve condition compared to the follow condition, calculated across all assessed problems with 3 moves. Subjects are encouraged to plan their moves before actually starting to solve the problems. Therefore, this measure provides an indication of the time taken to plan the problem's solution, discounting movement time. For any given problem, the initial thinking time score may be 0 if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞
SOC	SOCITMD4	SOC Initial Thinking Time Median (4 Moves)	The median difference in the time taken to select the first ball for the same problem in the solve condition compared to the follow condition, calculated across all assessed problems with 4 moves. Subjects are encouraged to plan their moves before actually starting to solve the problems. Therefore, this measure provides an indication of the time taken to plan the problem's solution, discounting movement time. For any given problem, the initial thinking time score may be 0 if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SOC	SOCITMD5	KEY: SOC Initial Thinking Time Median (5 Moves)	The median difference in the time taken to select the first ball for the same problem in the solve condition compared to the follow condition, calculated across all assessed problems with 5 moves. Subjects are encouraged to plan their moves before actually starting to solve the problems. Therefore, this measure provides an indication of the time taken to plan the problem's solution, discounting movement time. For any given problem, the initial thinking time score may be 0 if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞
SOC	SOCITMN2	SOC Initial Thinking Time Mean (2 Moves)	The mean difference in the time taken to select the first ball for the same problem in the solve condition compared to the follow condition, calculated across all assessed problems with 2 moves. Subjects are encouraged to plan their moves before actually starting to solve the problems. Therefore, this measure provides an indication of the time taken to plan the problem's solution, discounting movement time. For any given problem, the initial thinking time score may be 0 if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞
SOC	SOCITMN3	SOC Initial Thinking Time Mean (3 Moves)	The mean difference in the time taken to select the first ball for the same problem in the solve condition compared to the follow condition, calculated across all assessed problems with 3 moves. Subjects are encouraged to plan their moves before actually starting to solve the problems. Therefore, this measure provides an indication of the time taken to plan the problem's solution, discounting movement time. For any given problem, the initial thinking time score may be 0 if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞
SOC	SOCITMN4	SOC Initial Thinking Time Mean (4 Moves)	The mean difference in the time taken to select the first ball for the same problem in the solve condition compared to the follow condition, calculated across all assessed problems with 4 moves. Subjects are encouraged to plan their moves before actually starting to solve the problems. Therefore, this measure provides an indication of the time taken to plan the problem's solution, discounting movement time. For any given problem, the initial thinking time score may be 0 if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SOC	SOCITMN5	SOC Initial Thinking Time Mean (5 Moves)	The mean difference in the time taken to select the first ball for the same problem in the solve condition compared to the follow condition, calculated across all assessed problems with 5 moves. Subjects are encouraged to plan their moves before actually starting to solve the problems. Therefore, this measure provides an indication of the time taken to plan the problem's solution, discounting movement time. For any given problem, the initial thinking time score may be 0 if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞
SOC	SOCSTMD 2	SOC Subsequent Thinking Time Median (2 Moves)	The median difference in the time between selecting the first ball and completing the problem in the solve condition minus the corresponding time in the follow condition, divided by the number of moves made in the solve phase. Calculated across all assessed problems with 2 moves. This measure provides an indication of any time taken by the subject to plan or re-plan the problem solution after they have made their first move taking into account their movement time, and the number of moves made. For any given problem, the subsequent thinking time score may be 0 for if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞
SOC	SOCSTMD 3	SOC Subsequent Thinking Time Median (3 Moves)	The median difference in the time between selecting the first ball and completing the problem in the solve condition minus the corresponding time in the follow condition, divided by the number of moves made in the solve phase. Calculated across all assessed problems with 3 moves. This measure provides an indication of any time taken by the subject to plan or re-plan the problem solution after they have made their first move taking into account their movement time, and the number of moves made. For any given problem, the subsequent thinking time score may be 0 for if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SOC	SOCSTMD 4	SOC Subsequent Thinking Time Median (4 Moves)	The median difference in the time between selecting the first ball and completing the problem in the solve condition minus the corresponding time in the follow condition, divided by the number of moves made in the solve phase. Calculated across all assessed problems with 4 moves. This measure provides an indication of any time taken by the subject to plan or re-plan the problem solution after they have made their first move taking into account their movement time, and the number of moves made. For any given problem, the subsequent thinking time score may be 0 for if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞
SOC	SOCSTMD 5	KEY: SOC Subsequent Thinking Time Median (5 Moves)	The median difference in the time between selecting the first ball and completing the problem in the solve condition minus the corresponding time in the follow condition, divided by the number of moves made in the solve phase. Calculated across all assessed problems with 5 moves. This measure provides an indication of any time taken by the subject to plan or re-plan the problem solution after they have made their first move taking into account their movement time, and the number of moves made. For any given problem, the subsequent thinking time score may be 0 for if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞
SOC	SOCSTMN 2	SOC Subsequent Thinking Time Mean (2 Moves)	The mean difference in the time between selecting the first ball and completing the problem in the solve condition minus the corresponding time in the follow condition, divided by the number of moves made in the solve phase. Calculated across all assessed problems with 2 moves. This measure provides an indication of any time taken by the subject to plan or re-plan the problem solution after they have made their first move taking into account their movement time, and the number of moves made. For any given problem, the subsequent thinking time score may be 0 for if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SOC	SOCSTMN 3	SOC Subsequent Thinking Time Mean (3 Moves)	The mean difference in the time between selecting the first ball and completing the problem in the solve condition minus the corresponding time in the follow condition, divided by the number of moves made in the solve phase. Calculated across all assessed problems with 3 moves. This measure provides an indication of any time taken by the subject to plan or re-plan the problem solution after they have made their first move taking into account their movement time, and the number of moves made. For any given problem, the subsequent thinking time score may be 0 for if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞
SOC	SOCSTMN 4	SOC Subsequent Thinking Time Mean (4 Moves)	The mean difference in the time between selecting the first ball and completing the problem in the solve condition minus the corresponding time in the follow condition, divided by the number of moves made in the solve phase. Calculated across all assessed problems with 4 moves. This measure provides an indication of any time taken by the subject to plan or re-plan the problem solution after they have made their first move taking into account their movement time, and the number of moves made. For any given problem, the subsequent thinking time score may be 0 for if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞
SOC	SOCSTMN 5	SOC Subsequent Thinking Time Mean (5 Moves)	The mean difference in the time between selecting the first ball and completing the problem in the solve condition minus the corresponding time in the follow condition, divided by the number of moves made in the solve phase. Calculated across all assessed problems with 5 moves. This measure provides an indication of any time taken by the subject to plan or re-plan the problem solution after they have made their first move taking into account their movement time, and the number of moves made. For any given problem, the subsequent thinking time score may be 0 for if the subject is slower in the follow condition.	-ve	ms	SOC Recommended Standard/Tone SOC Recommended Standard Repeated/Tone	0	∞

Spatial Span (SSP)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SSP	SSPFSL	KEY: SSP Forward Span Length	The longest sequence of boxes successfully recalled by the subject. Applicable to Forward variants only.	+ve	-	SSP Standard Forward 2.0	2	9
SSP	SSPFSR	SSP Forward Span Reached	The longest sequence problem successfully reached (but not passed) by the subject. Applicable to Forward variants only.	+ve	-	SSP Standard Forward 2.0	2	9
SSP	SSPFTE	SSP Forward Total Errors	The total number of times a subject incorrectly touched a box which was not the next one in the sequence. Applicable to Forward variants only.	-ve	-	SSP Standard Forward 2.0	0	97
SSP	SSPFTUE	SSP Forward Total Usage Errors	The total number of times a subject incorrectly selected a box which was not present in the target sequence. Applicable to Forward variants only.	-ve	-	SSP Standard Forward 2.0	0	56
SSP	SSPFMNE	SSP Forward Mean Number of Attempts	The mean number of attempts required for a subject to pass the span length. Applicable to Forward variants only.	-ve	-	SSP Standard Forward 2.0	1	3
SSP	SSPRSL	KEY: SSP Reverse Span Length	The longest sequence of boxes successfully recalled by the subject. Applicable to Reverse variants only.	+ve	-	SSP Standard Reverse 2.0	2	9

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SSP	SSPRSR	SSP Reverse Span Reached	The longest sequence problem successfully reached (but not passed) by the subject. Applicable to Reverse variants only.	+ve	-	SSP Standard Reverse 2.0	2	9
SSP	SSPRTE	SSP Reverse Total Errors	The total number of times a subject incorrectly touched a box which was not the next one in the sequence. Applicable to Reverse variants only.	-ve	-	SSP Standard Reverse 2.0	0	97
SSP	SSPRTUE	SSP Reverse Total Usage Errors	The total number of times a subject incorrectly selected a box which was not present in the target sequence. Applicable to Reverse variants only.	-ve	-	SSP Standard Reverse 2.0	0	56
SSP	SSPRMNE	SSP Reverse Mean Number of Attempts	The mean number of attempts required for a subject to pass the span length. Applicable to Reverse variants only.	-ve	-	SSP Standard Reverse 2.0	1	3

Stop Signal Task (SST)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SST	SSTSSRT	KEY: SST Stop Signal Reaction Time	The estimate of time where an individual can successfully inhibit their responses 50% of the time. This covert measurement is sampled from the length of time between the go stimulus and the stop stimulus at which the subject is able to successfully inhibit their response on 50% of the trials. We can infer that this is the time before which all actions become ballistic and the subject is no longer able to cancel their action selection.	-ve	ms	SST Basic SST Basic 2.0	0	1000
SST	SSTDEG	SST Direction Errors: Go Trials	The total number of trials where the subject pressed the wrong button to the direction of the arrow stimulus on a Go trial.	-ve	-	SST Basic SST Basic 2.0	0	318
SST	SSTDES	SST Direction Errors: Stop Trials	The total number of trials where the subject pressed the wrong button to the direction of the arrow stimulus on a Stop trial.	-ve	-	SST Basic SST Basic 2.0	0	106

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SST	SSTMRTG	SST Median RT: All Go Trials	The median reaction time, taken across all Go trials, for the subject to respond, either correctly or incorrectly, within the permitted response window.	-ve	ms	SST Basic SST Basic 2.0	0	800
SST	SSTMRTGG	SST Median RT: Go Following Go	The median reaction time taken across all the Go trials directly following another Go trial.	-ve	ms	SST Basic SST Basic 2.0	0	800
SST	SSTMRTGSS	SST Median RT: Go Successful Stop	The median reaction time taken across all the Go trials which follow a successful Stop trial.	-ve	ms	SST Basic	0	800
SST	SSTMRTGS *identical to SSTMRTGSS*	SST Median RT: Go Following Stop	The median reaction time taken across all the Go trials which follow a successful Stop trial.	-ve	ms	SST Basic 2.0	0	800
SST	SSTMRTGFS	SST Median RT: Go Failed Stop	The median reaction time taken over all the Go trials which followed a failed Stop trial.	-ve	ms	SST Basic	0	800
SST	SSTMRTGF *identical to SSTMRTGFS*	SST Median RT: Go Following Failed Stop	The median reaction time taken over all the Go trials which followed a failed Stop trial.	-ve	ms	SST Basic 2.0	0	800
SST	SSTMT	SST Missed Trials	The total number of trials where the subjects failed to respond within the permitted response window. Calculated across all assessed Go trials.	-ve	-	SST Basic SST Basic 2.0	0	424
SST	SSTFSG	SST Failed Stop RT < Go RT	An indicator of whether Failed Stop Reaction Time is shorter than Go Reaction Time, reported as Yes = 1, No = 0. Calculated by comparing the mean reaction time from all assessed Failed Stop trials to the mean reaction time from all assessed Go trials.	Complex (See Description)	-	SST Basic SST Basic 2.0	0	1
SST	SSTMFSRTI	SST Mean Failed-Stop RT Increases	An indicator of whether Failed Stop Reaction Time increases as the Stop Signal Delay (SSD) increases, reported as Yes = 1, No = 0. Calculated ordering all assessed Failed Stop reaction times, and comparing the mean of the 10 trials with the shortest SSD to the mean of the 10 trials with the longest SSD.	Complex (See Description)	-	SST Basic	0	1
SST	SSTMFRTI *identical to SSTMFSRTI*	SST Mean Failed Stop RT Increases	An indicator of whether Failed Stop Reaction Time increases as the Stop Signal Delay (SSD) increases, reported as Yes = 1, No = 0. Calculated ordering all assessed Failed Stop reaction times, and comparing the mean of the 10 trials with the shortest SSD to the mean of the 10 trials with the longest SSD.	Complex (See Description)	-	SST Basic 2.0	0	1

Spatial Working Memory (SWM)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SWM	SWMBE	KEY: SWM Between Errors	The number of times the subject incorrectly revisits a box in which a token has previously been found. Calculated across all assessed four, six and eight token trials.	-ve (depends, in part, on the stage of the task reached)	-	SWM Recommended Standard SWM Recommended Standard 2.0 SWM High Functioning	0 0 0	63 153 ∞
SWM	SWMBE468 **Identical to SWMBE*	KEY: SWM Between Errors	The number of times the subject incorrectly revisits a box in which a token has previously been found. Calculated across all assessed four, six and eight token trials.	-ve (depends, in part, on the stage of the task reached)	-	SWM Recommended Standard 2.0 Extended/Tone	0	139
SWM	SWMWE	SWM Within Errors	The number of times a subject revisits a box already shown to be empty during the same search. Calculated across all assessed four, six and eight token trials.	-ve (depends, in part, on the stage of the task reached)	-	SWM Recommended Standard SWM Recommended Standard 2.0 SWM High Functioning	0 0 0	67 157 ∞
SWM	SWMWE468 **Identical to SWMWE*	SWM Within Errors	The number of times a subject revisits a box already shown to be empty during the same search. Calculated across all assessed four, six and eight token trials.	-ve (depends, in part, on the stage of the task reached)	-	SWM Recommended Standard 2.0 Extended/Tone	0	157

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SWM	SWMDE	SWM Double Errors	The number of times a subject commits an error that is both a within error and a between error. Calculated across all assessed four, six and eight token trials.	-ve (depends, in part, on the stage of the task reached)	-	SWM Recommended Standard SWM Recommended Standard 2.0 SWM High Functioning	0 0 0	57 147 ∞
SWM	SWMDE468 **Identical to SWMDE*	SWM Double Errors	The number of times a subject commits an error that is both a within error and a between error. Calculated across all assessed four, six and eight token trials.	-ve (depends, in part, on the stage of the task reached)	-	SWM Recommended Standard 2.0 Extended/Tone	0	147
SWM	SWMTE	SWM Total Errors	The total number of times a box is selected that is certain not to contain a token and therefore should not have been visited by the subject, i.e. between errors + within errors - double errors. Calculated across all assessed four, six and eight token trials.	-ve (depends, in part, on the stage of the task reached)	-	SWM Recommended Standard SWM Recommended Standard 2.0 SWM High Functioning	0 0 0	67 157 ∞
SWM	SWMTE468 **Identical to SWMTE*	SWM Total Errors	The total number of times a box is selected that is certain not to contain a token and therefore should not have been visited by the subject, i.e. between errors + within errors - double errors. Calculated across all assessed four, six and eight token trials.	-ve (depends, in part, on the stage of the task reached)	-	SWM Recommended Standard 2.0 Extended/Tone	0	157

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SWM	SWMS	KEY: SWM Strategy (6-8 Boxes)	The number of times a subject begins a new search pattern from the same box they started with previously. If they always begin a search from the same starting point, we infer that the subject is employing a planned strategy for finding the tokens. Therefore, a low score indicates high strategy use (1 = they always begin the search from the same box), a high score indicates that they are beginning their searches from many different boxes. Calculated across assessed trials with 6 tokens or more.	-ve	-	SWM Recommended Standard SWM Recommended Standard 2.0 SWM Recommended Standard 2.0 Extended/Tone	2	14
SWM	SWMS	SWM Strategy (12 Box Only (Note: this measure has the same name as above)	This measure computes the strategy score for the 12-box stage of the task only. The strategy score is calculated based on the number of times a subject begins a new search pattern from the same box they started with previously. If they always begin a search from the same starting point, we infer that the subject is employing a planned strategy for finding the tokens. Therefore, a lower score indicates high strategy use (1 = they always begin the search from the same box), a high score indicates that they are beginning their searches from many different boxes.	-ve	-	SWM High Functioning	1	12
SWM	SWMS6	SWM Strategy (6 Box Only)	This measure computes the strategy score for the 6-box stage of the task only. The strategy score is calculated based on the number of times a subject begins a new search pattern from the same box they started with previously. If they always begin a search from the same starting point, we infer that the subject is employing a planned strategy for finding the tokens. Therefore, a low score indicates high strategy use (1 = they always begin the search from the same box), a high score indicates that they are beginning their searches from many different boxes.	-ve	-	SWM Recommended Standard 2.0 SWM Recommended Standard 2.0 Extended/Tone	1	6

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SWM	SWMSX	SWM Strategy (6-12 Boxes)	The number of times a subject begins a new search pattern from the same box they started with previously. If they always begin a search from the same starting point, we infer that the subject is employing a planned strategy for finding the tokens. Therefore, a low score indicates high strategy use (1 = they always begin the search from the same box), a high score indicates that they are beginning their searches from many different boxes. Calculated across assessed trials with 6 tokens or more.	-ve	-	SWM Recommended Standard 2.0 Extended/Tone	3	26
SWM	SWMBE4	KEY: SWM Between Errors 4 Boxes	The number of times a subject revisits a box in which a token has previously been found. Calculated across all trials with 4 tokens only.	-ve	-	SWM Recommended Standard Op Sc SWM Recommended Standard 2.0 SWM Recommended Standard 2.0 Extended/Tone	0 0 0	15 32 32
SWM	SWMWE4	SWM Within Errors 4 Boxes	The number of times a subject revisits a box already found to be empty during the same search. Calculated across all trials with 4 tokens only.	-ve	-	SWM Recommended Standard SWM Recommended Standard 2.0 SWM Recommended Standard 2.0 Extended/Tone	0 0 0	18 38 38

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SWM	SWMDE4	SWM Double Errors 4 Boxes	The number of times a subject commits an error that is both a within error and a between error. Calculated across all trials with 4 tokens only.	-ve	-	SWM Recommended Standard	0	13
						SWM Recommended Standard 2.0	0	33
						SWM Recommended Standard 2.0 Extended/Tone	0	33
SWM	SWMTE4	SWM Total Errors 4 Boxes	The number of times a box is selected that is certain not to contain a token and therefore should not have been visited by the subject, i.e. between errors + within errors - double errors. Calculated across all trials with 4 tokens only.	-ve	-	SWM Recommended Standard	0	18
						SWM Recommended Standard 2.0	0	38
						SWM Recommended Standard 2.0 Extended/Tone	0	38
SWM	SWMBE6	KEY: SWM Between Errors 6 Boxes	The number of times the subject revisits a box in which a token has previously been found. Calculated across all trials with 6 tokens only.	-ve	-	SWM Recommended Standard	0	25
						SWM Recommended Standard 2.0	0	47
						SWM Recommended Standard 2.0 Extended/Tone	0	47

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SWM	SWMWE6	SWM Within Errors 6 Boxes	The number of times a subject revisits a box already found to be empty during the same search. Calculated across all trials with 6 tokens only.	-ve	-	SWM Recommended Standard	0	28
						SWM Recommended Standard 2.0	0	58
						SWM Recommended Standard 2.0 Extended/Tone	0	58
SWM	SWMDE6	SWM Double Errors 6 Boxes	The number of times a subject commits an error that is both a within error and a between error. Calculated across all trials with 6 tokens only.	-ve	-	SWM Recommended Standard	0	23
						SWM Recommended Standard 2.0	0	53
						SWM Recommended Standard 2.0 Extended/Tone	0	53
SWM	SWMTE6	SWM Total Errors 6 Boxes	The number of times a box is selected that is certain not to contain a token and therefore should not have been visited by the subject, i.e. between errors + within errors - double errors. Calculated across all trials with 6 tokens only.	-ve	-	SWM Recommended Standard	0	28
						SWM Recommended Standard 2.0	0	58
						SWM Recommended Standard 2.0 Extended/Tone	0	58

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SWM	SWMBE8	KEY: SWM Between Errors 8 Boxes	The number of times the subject revisits a box in which a token has previously been found. Calculated across all trials with 8 tokens only.	-ve	-	SWM Recommended Standard	0	34
						SWM Recommended Standard 2.0	0	60
						SWM Recommended Standard 2.0 Extended/Tone	0	60
SWM	SWMWE8	SWM Within Errors 8 Boxes	The number of times a subject revisits a box already found to be empty during the same search. Calculated across all trials with 8 tokens only.	-ve	-	SWM Recommended Standard	0	38
						SWM Recommended Standard 2.0	0	78
						SWM Recommended Standard 2.0 Extended/Tone	0	78
SWM	SWMDE8	SWM Double Errors 8 Boxes	The number of times a subject commits an error that is both a within error and a between error. Calculated across all trials with 8 tokens only.	-ve	-	SWM Recommended Standard	0	32
						SWM Recommended Standard 2.0	0	72
						SWM Recommended Standard 2.0 Extended/Tone	0	72

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SWM	SWMTE8	SWM Total Errors 8 Boxes	The number of times a box is selected that is certain not to contain a token and therefore should not have been visited by the subject, i.e. between errors + within errors - double errors. Calculated across all trials with 8 tokens only.	-ve	-	SWM Recommended Standard SWM Recommended Standard 2.0 SWM Recommended Standard 2.0 Extended/Tone	0 0 0	38 78 78
SWM	SWMBE12	SWM Between Errors 12 Boxes	The number of times a subject revisits a box in which a token has previously been found. Calculated across all trials with 12 tokens only.	-ve	-	SWM Recommended Standard 2.0 Extended/Tone	0	81
SWM	SWMWE12	SWM Within Errors 12 Boxes	The number of times a subject revisits a box already found to be empty during the same search. Calculated across all trials with 12 tokens only.	-ve	-	SWM Recommended Standard 2.0 Extended/Tone	0	118
SWM	SWMTE12	SWM Total Errors 12 Boxes	The number of times a box is selected that is certain not to contain a token and therefore should not have been visited by the subject, i.e. between errors + within errors - double errors. Calculated across all trials with 12 tokens only.	-ve	-	SWM Recommended Standard 2.0 Extended/Tone	0	118
SWM	SWMDE12	SWM Double Errors 12 Boxes	The number of times a subject commits an error that is both a within error and a between error. Calculated across all trials with 12 tokens only.	-ve	-	SWM Recommended Standard 2.0 Extended/Tone	0	112

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
SWM	SWMPR	SWM Problem Reached	This measure reports the problem number that the subject reached but did not necessarily complete.	+ve	-	SWM Recommended Standard	3	5
						SWM Recommended Standard 2.0	3	5
						SWM Recommended Standard 2.0 Extended	2	6
						SWM Recommended Standard 2.0 Extended Tone	3	7

Verbal Paired Associates (VPA)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
VPA	VPANATTS	VPA Number of Attempts	The total number of attempts made by a subject across all trials.	-ve	-	Recommended Standard with Tutorial 2.0 Recommended Standard No Tutorial 2.0	0	3
VPA	VPAERAT1	VPA Errors at 1st Recall Attempt	Recommended: The number of errors made by a subject on their first attempt when recalling the word pairs.	-ve	-	Recommended Standard with Tutorial 2.0 Recommended Standard No Tutorial 2.0	0	8
VPA	VPAERAT2	VPA Errors at 2nd Recall Attempt	The number of errors made by a subject on their second attempt when recalling the word pairs.	-ve	-	Recommended Standard with Tutorial 2.0 Recommended Standard No Tutorial 2.0	0	8
VPA	VPAERAT3	VPA Errors at 3rd Recall Attempt	The number of errors made by a subject on their third attempt when recalling the word pairs.	-ve	-	Recommended Standard with Tutorial 2.0 Recommended Standard No Tutorial 2.0	0	8

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
VPA	VPAERTOT	VPA Total Errors	Recommended: The total number of errors made when recalling the word pairs across all attempts made by the subject.	-ve	-	Recommended Standard with Tutorial 2.0 Recommended Standard No Tutorial 2.0	0	24
VPA	VPAMWDS1	VPA Model Weighted Difficulty Score For 1st Attempt	The sum of difficulty values of the trials presented and scored as correct during the subject's first attempt.	+ve	-	Recommended Standard with Tutorial 2.0 Recommended Standard No Tutorial 2.0	0	VPAMWDMS/3
VPA	VPAMWDS2	VPA Model Weighted Difficulty Score For 2nd Attempt	The sum of difficulty values of the trials presented and scored as correct during the subject's second attempt.	+ve	-	Recommended Standard with Tutorial 2.0 Recommended Standard No Tutorial 2.0	0	VPAMWDMS/3
VPA	VPAMWDS3	VPA Model Weighted Difficulty Score For 3rd Attempt	The sum of difficulty values of the trials presented and scored as correct during the subject's third attempt.	+ve	-	Recommended Standard with Tutorial 2.0 Recommended Standard No Tutorial 2.0	0	VPAMWDMS/3
VPA	VPAMWDST	VPA Model Weighted Difficulty Score Total	The sum of difficulty values of the trials presented and scored as correct, over all attempts made by the subject, plus the maximum possible score for any attempts that were not required because the set had already been successfully learnt. This measure allows comparison of performance across all subjects regardless of the number of attempts the subject required to recall the words pairs.	+ve	-	Recommended Standard with Tutorial 2.0 Recommended Standard No Tutorial 2.0	0	VPAMWDMS

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
VPA	VPAMPWDS	VPA Maximum Possible Model Weighted Difficulty Score	The maximum Model Weighted Difficulty Score Total (VPAMWDST) that could be achieved (not including any Delayed Recall phase), i.e., if a subject made no errors. This measure does not report subject performance but gives additional information that can be used in further analysis of model-weighted difficulty scores. N.b. This is a word-list-specific measure and will vary slightly between visits.	+ve	-	Recommended Standard with Tutorial 2.0 Recommended Standard No Tutorial 2.0	0	-
VPA	VPAERSDR	VPA Delayed Recall Total Errors	Recommended: The total number of errors made by a subject when recalling word pairs during the delayed recall phase.	-ve	-	Recommended Standard (Delayed) 2.0	0	8
VPA	VPAMWDSD	VPA Model Weighted Difficulty Score Delayed	The sum of difficulty values of the trials presented and scored as correct during the delayed recall phase.	+ve	-	Recommended Standard (Delayed) 2.0	0	VPAMWDMS/3

Verbal Recognition Memory (VRM)

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
VRM	VRMFRDS	KEY: VRM Free Recall: Distinct Stimuli.	The total number of distinct words that are correctly recalled from the presentation phase by the subject during the immediate free recall stage.	+ve	-	VRM Recommended Standard / Prolonged Display VRM Prolonged Display Short	0 0	18 12
VRM	VRMFRNW	VRM Free Recall: Novel Words	The total number of novel words that were given by the subject during the immediate free recall stage which were not shown during the presentation phase.	-ve	-	VRM Recommended Standard / Prolonged Display VRM Prolonged Display Short	0	99
VRM	VRMFRP	VRM Free Recall: Perseverations	The number of times a subject repeats a word that was shown during the presentation phase in the immediate free recall stage.	-ve	-	VRM Recommended Standard / Prolonged Display VRM Prolonged Display Short	0	99
VRM	VRMIRTC	KEY: VRM Immediate Recognition: Total Correct	The total number of target words that the subject correctly recognizes, plus the total number of distractor words that the subject correctly rejects. (VRMIRCRS + VRMIRCRD)	+ve	-	VRM Recommended Standard / Prolonged Display VRM Prolonged Display Short	0 0	36 24

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
VRM	VRMIRCRS	VRM Immediate: Correct to Stimuli	The total number of words that the subject correctly recognizes in the immediate recognition phase.	+ve	-	VRM Recommended Standard / Prolonged Display VRM Prolonged Display Short	0 0	18 12
VRM	VRMIRCRD	VRM Immediate: Correct to Distractors	The total number of times the subject correctly responds "no" to a distractor word in the immediate recognition phase.	+ve	-	VRM Recommended Standard / Prolonged Display VRM Prolonged Display Short	0 0	18 12
VRM	VRMIRIRD	VRM Immediate: Incorrect to Distractors	The total number of times the subject incorrectly responds "yes" to a distractor word in the immediate recognition phase.	-ve	-	VRM Recommended Standard / Prolonged Display VRM Prolonged Display Short	0 0	18 12
VRM	VRMDRTC	KEY: VRM Delayed Recognition: Total Correct	The total number of target words that the subject correctly recognizes in the delayed recognition phase, plus the total number of distractor words that the subject correctly rejects. (VRMDRCRS + VRMDRCRD)	+ve	-	VRM Recommended Standard / Prolonged Display VRM Prolonged Display Short	0 0	36 24
VRM	VRMDRCRS	VRM Delayed: Correct to Stimuli	The total number of words that the subject correctly recognizes in the delayed recognition phase.	+ve	-	VRM Recommended Standard / Prolonged Display VRM Prolonged Display Short	0 0	18 12

Task	Measure Name	Measure Description	Description	Sense	Units	Variant Applicability	Min	Max
VRM	VRMDRCRD	VRM Delayed: Correct to Distractors	The total number of times the subject correctly responds "no" to a distractor word in the delayed recognition phase.	+ve	-	VRM Recommended Standard / Prolonged Display VRM Prolonged Display Short	0 0	18 12
VRM	VRMDRIRD	VRM Delayed: Incorrect to Distractors	The total number of times the subject incorrectly responds "yes" to a distractor word in the delayed recognition phase.	-ve	-	VRM Recommended Standard / Prolonged Display VRM Prolonged Display Short	0 0	18 12
VRM	VRMTSIR	VRM Time Since Immediate Recognition	The length of time between the end of the immediate recognition phase and the start of the delayed recognition phase of the task	N/A	HH:MM:SS	VRM Recommended Standard / Prolonged Display VRM Prolonged Display Short	00:20:00	∞

CANTAB Connect Research Test Variants

Usually, test instructions are delivered via an automated voiceover. However, this may not be appropriate for some subjects (e.g. pediatric populations, or populations where there may be significant impairment). In this case, it is recommended that 'tone variants' are used instead. These tone variants have the same structure as their equivalent voice variants but instead of the instructions being delivered via an automated voiceover, the instructions are read aloud by a researcher using a standardized script. These variants are segmented by blank screens which allow the researcher to progress to the next phase of the test (by pressing a play button) whenever the instructions have been successfully delivered.

Tests validated for web-based testing

Web-based testing is currently available for the following CANTAB tests:

- Cambridge Gambling Task (CGT)
- Delayed Match to Sample (DMS)
- Emotional Bias Task (EBT)
- Emotion Recognition Task (ERT)
- Intra-Extra Dimensional Set Shift (IED)
- Match to Sample Visual Search (MTS)
- One Touch Stockings of Cambridge (OTS)
- Paired Associates Learning (PAL)
- Pattern Recognition Memory (PRM)
- Rapid Visual Information Processing (RVP)
- Stockings of Cambridge (SOC)
- Spatial Span (SSP)
- Spatial Working Memory (SWM)

Test Variants

Test	Variant	Duration	Test Structure	When to Use	Normative Data Availability
Cambridge Gambling Task (CGT)	Ascending First (Voice & Tone)	18 minutes	8 practice trials (4 decision-only and 4 ascending bet practice trials) 36 assessed ascending bet trials 4 descending bet practice trials 36 assessed descending bet practice trials	We recommend this variant is used for cross-sectional studies testing at a single time point. This variant has an identical structure to CANTAB Research Suite.	18 - 85+ years
	Descending First (Voice & Tone)	18 minutes	8 practice trials (4 decision-only and 4 descending bet practice trials) 36 assessed descending bet trials 4 ascending bet practice trials 36 assessed ascending bet practice trials	We recommend this variant is used for cross-sectional studies testing at a single time point. This variant has an identical structure to CANTAB Research Suite.	Not currently available
	Ascending First Shortened (Voice & Tone)	12 minutes	8 practice trials (4 decision-only and 4 ascending bet practice trials) 18 assessed ascending bet trials 4 descending bet practice trials 18 assessed descending bet practice trials	We recommend this variant is used for longitudinal studies testing at multiple time points.	18 - 85+ years
	Descending First Shortened (Voice & Tone)	12 minutes	8 practice trials (4 decision-only and 4 descending bet practice trials) 18 assessed descending bet trials 4 ascending bet practice trials 18 assessed ascending bet practice trials	We recommend this variant is used for longitudinal studies testing at multiple time points.	Not currently available
Delayed Matching to Sample (DMS)	Recommended Standard	7 minutes	4 practice trials (simultaneous, 0, 4, 12 second delays) 20 assessed trials (5 per delay type)	We recommend that this variant is used for all studies.	18 - 85+ years

Test	Variant	Duration	Test Structure	When to Use	Normative Data Availability
Digit Span (DGS)	Forwards 2 Attempts	3 minutes	8 assessed trials (2-9 number sequences; 2 attempts)	This variant can be used in combination with Backwards 2 Attempts, or on its own.	Not currently available
	Recommended Standard Forwards 3 Attempts	3 minutes	8 assessed trials (2-9 number sequences; 3 attempts)	This variant can be used in combination with Recommended Standard Backwards 3 Attempts, or on its own.	Not currently available
	Backwards 2 Attempts	3 minutes	8 assessed trials (2-9 number sequences; 2 attempts)	This variant can be used in combination with Forwards 2 Attempts, or on its own.	Not currently available
	Recommended Standard Backwards 3 Attempts	3 minutes	8 assessed trials (2-9 number sequences; 3 attempts)	This variant can be used in combination with Recommended Standard Forwards 3 Attempts, or on its own.	Not currently available
Digit Symbol Substitution Task (DST)	Draw 90s	90 seconds	Practice phase in which 5 trials must be successfully completed to progress 90 second assessed phase (unlimited trials)	We recommend this variant is used for most studies.	18 - 85+ years
	Draw 90s No Tutorial	90 seconds	90 second assessed phase (unlimited trials)	This variant does not include a practice/ tutorial phase, therefore we recommend that this variant is only used in follow-up visits when the interval between timepoints is short.	18 - 85+ years
Emotional Bias Task (EBT)	Happy-Sad (Caucasian & South Asian)	4 minutes	2 practice trials 45 assessed trials	We recommend this variant for studies interested in investigating whether subjects have a bias toward happy or sad faces	18 – 85+ years (Caucasian variant only)

Test	Variant	Duration	Test Structure	When to Use	Normative Data Availability
	Happy-Angry (Caucasian & South Asian)	4 minutes	2 practice trials 45 assessed trials	We recommend this variant for studies interested in investigating whether subjects have a bias toward happy or angry faces	18-85+ years (Caucasian variant only)
	Happy-Disgust (Caucasian)	4 minutes	2 practice trials 45 assessed trials	We recommend this variant for studies interested in investigating whether subjects have a bias toward happy or disgusted faces	18 - 85+ years
Emotion Recognition Task (ERT)	Long (Caucasian)	9 minutes	5 practice trials 90 assessed trials Male/Female faces 6 emotions (happiness, sadness, fear, anger, surprise, disgust) 15 intensities	We recommend this variant is used for most studies.	Not currently available
	Short (Caucasian & South Asian)	6 minutes	5 practice trials 48 assessed trials Male/Female faces 6 emotions (happiness, sadness, fear, anger, surprise, disgust) 8 intensities	We recommend this variant where the testing duration needs to be short.	Not currently available
Intra-Extra Dimensional Set Shift (IED)	Recommended Standard Shapes First (Voice & Tone)	7 minutes	9 assessed stages ≥6 trials per stage (simple discrimination of shapes, simple reversal of shapes, compound discrimination 1, compound discrimination 2, compound reversal, ID shift, ID reversal, ED shift, ED reversal)	We recommend this variant is used for cross-sectional studies testing at a single time point. This variant has an identical structure and stimuli to CANTAB Research Suite Clinical Mode.	Not currently available

Test	Variant	Duration	Test Structure	When to Use	Normative Data Availability
	Recommended Standard Lines First (Voice & Tone)	7 minutes	9 assessed stages ≥6 trials per stage (simple discrimination of lines, simple reversal of lines, compound discrimination 1, compound discrimination 2, compound reversal, ID shift, ID reversal, ED shift, ED reversal)	We recommend this variant is used for cross-sectional studies testing at a single time point. This variant has an identical structure and stimuli to CANTAB Research Suite Clinical Mode.	18 – 85+ years
	Recommended Standard Shapes First Repeated	7 minutes	9 assessed stages ≥6 trials per stage (simple discrimination of shapes, simple reversal of shapes, compound discrimination 1, compound discrimination 2, compound reversal, ID shift, ID reversal, ED shift, ED reversal)	We do not recommend IED for repeated testing, as subjects tend to exhibit significant learning effects. Historically, however, IED has been used for repeat testing in some studies. As such, we recommend this variant is used for longitudinal studies testing at multiple time points.	Not currently available
	Recommended Standard Lines First Repeated	7 minutes	9 assessed stages ≥6 trials per stage (simple discrimination of lines, simple reversal of lines, compound discrimination 1, compound discrimination 2, compound reversal, ID shift, ID reversal, ED shift, ED reversal)	We do not recommend IED for repeated testing, as subjects tend to exhibit significant learning effects. Historically, however, IED has been used for repeat testing in some studies. As such, we recommend this variant is used for longitudinal studies testing at multiple time points.	18 – 85+ years
Match to Sample Visual Search (MTS)	Recommended Standard (Voice & Tone)	7 minutes	3 practice trials (1, 2, 4 pattern) 50 assessed trials (10 per difficulty level) Difficulty levels: 1, 2, 4, 6 and 8 pattern	We recommend that this variant is used for all studies.	Not currently available
Motor Screening Task (MOT)	Voice & Tone	2 minutes	3 practice trials 10 assessed trials	We recommend that this variant is used for all studies.	18-85+ years

Test	Variant	Duration	Test Structure	When to Use	Normative Data Availability
Multitasking Test (MTT)	Standard (Voice & Tone)	8 minutes	8 Direction trials, practice (arrows centered) 8 Direction trials, practice (arrows at sides of screen) 40 Direction trials, assessed 8 Side trials, practice 40 Side trials, assessed 16 Mixed direction & side trials, practice 80 Mixed direction & side trials, assessed	We recommend that this variant is used for all studies.	Not currently available
N-Back (NBX)	1-Back Full		Practice phase 90 assessed trials (stimuli are displayed for 800 ms)	This is the recommended variant. May be used on its own or combined with 2-Back Full.	Not currently available
	1-Back Full Two Second Display		Practice phase 90 assessed trials (stimuli are displayed for 2000 ms)	We recommend this variant when testing very impaired populations. May be used on its own or combined with 2-Back Full Two Second Display.	Not currently available
	2-Back Full		Practice phase 90 assessed trials (stimuli are displayed for 800 ms)	This is the recommended variant. May be used on its own or combined with 1-Back Full.	Not currently available
	2-Back Full Two Second Display		Practice phase 90 assessed trials (stimuli are displayed for 2000 ms)	We recommend this variant when testing very impaired populations. May be used on its own or combined with 1-Back Full Two Second Display.	Not currently available
One Touch Stockings of Cambridge (OTS)	Standard	10 minutes	3 mandatory practice trials (2, 3, 4 moves) 15 assessed trials (1 to 6 moves)	We recommend this variant for most populations, who require the hardest level of difficulty in order to prevent ceiling effects.	18 - 85+ years

Test	Variant	Duration	Test Structure	When to Use	Normative Data Availability
	Alternative	8 minutes	3 mandatory practice trials (2, 3, 4 moves) 20 assessed trials (1 to 5 moves)	We recommend this variant for use in impaired populations who might not be able to complete the hardest level of the tests.	Not currently available
	Short	7 minutes	3 mandatory practice trials (2, 3, 4 moves) 10 assessed trials (1 to 5 moves)	We recommend this variant where the testing duration needs to be short.	18 - 85+ years
Paired Associates Learning (PAL)	Recommended Standard (Voice & Tone)	8 minutes	2 pattern practice 2, 4, 6, 8 patterns assessed (4 attempts)	This is the variant we recommend for use in patient populations, older adults or anybody we expect to exhibit cognitive impairments.	18 - 85+ years
	Recommended Standard Extended (Voice & Tone)	12 minutes	2 pattern practice 2, 4, 6, 8, 12 patterns assessed (4 attempts)	This variant can be used in populations with a wide variance in ability. This variant can be used in impaired populations, but also healthy controls, due to the more difficult stages mitigating ceiling effects.	18 - 85+ years
Pattern Recognition Memory (PRM)	Recommended Standard	5 minutes	12 patterns immediate recognition 12 patterns delayed recognition (20 minutes)	We recommend using this variant with patient populations and/or children.	18 - 85+ years
	Recommended Standard 18 Extended	5 minutes	18 patterns immediate recognition 18 patterns delayed recognition (20 minutes)	We recommend this variant when testing healthy populations or symptom-free older populations.	18 - 85+ years
Psychomotor Vigilance Task (PVT)	Long Demo Enabled 2.0	10 minutes	10 practice trials 100 assessed trials	We recommend this variant is used for most studies.	Not currently available

Test	Variant	Duration	Test Structure	When to Use	Normative Data Availability
	Long Demo Disabled 2.0	10 minutes	100 assessed trials	This variant does not include a practice/ tutorial phase, therefore we recommend that this variant is only used in follow-up visits when the interval between timepoints is short.	Not currently available
Reaction Time (RTI)	Five Choice	4 minutes	10 trials, practice (repeated if 3 errors made) 30 trials, assessed	We recommend that this variant is used for all studies.	18 - 85+ years
	Simple and Five Choice (Voice & Tone)	6 minutes	10 simple trials, practice (repeated if 3 errors made) 30 simple trials, assessed 10 five-choice trials, practice (repeated if 3 errors made) 30 five-choice trials, assessed	This variant combines elements of both a simple reaction time test (one response stimulus) and the five choice variants (five response stimuli). This variant is useful in patient populations who may be very impaired.	Not currently available
Rapid Visual Information Processing (RVP)	1 Target (Voice & Tone)	9 minutes	2-minute practice (with 3-5-7) 6 minutes assessed 1 target sequence: 3-5-7	We recommend this variant when testing very impaired patients, or pediatric populations. Subjects are required to detect only one target sequence.	Not currently available
	3 Targets (Voice & Tone)	9 minutes	2-minute practice (with 3-5-7) 6 minutes assessed 3 target sequences: 3-5-7; 2-4-6-; 4-6-8	The recommended variant for testing. The assessed phase is 9 minutes long, and subjects are required to detect three target sequences.	18 - 85+ years

Test	Variant	Duration	Test Structure	When to Use	Normative Data Availability
Stockings of Cambridge (SOC)	Recommended Standard (Voice & Tone)	10 minutes	Group 1: Solve phase: 6 practice trials, 6 assessed trials Follow phase: 2 practice trials, 6 assessed trials Group 2: Solve phase: 2 practice trials, 6 assessed trials Follow phase: 2 practice trials, 6 assessed trials	We recommend this variant is used for cross-sectional studies testing at a single time point. This variant has an identical structure to CANTAB Research Suite.	18 - 85+ years
	Recommended Standard Repeated (Voice & Tone)	10 minutes	Group 1: Solve phase: 6 practice trials, 6 assessed trials Follow phase: 2 practice trials, 6 assessed trials Group 2: Solve phase: 2 practice trials, 6 assessed trials Follow phase: 2 practice trials, 6 assessed trials	We recommend this variant is used for longitudinal studies testing at multiple time points.	Not currently available
Spatial Span (SSP)	Standard Forward 2.0 (Voice & Tone)	4 minutes	2 x 2 box sequence practice trials (3 attempts) 8 assessed trials (2-9 box sequences, 3 attempts)	Subjects are required to recall the order that some boxes change color. This variant can be used in combination with *Standard Reverse 2.0*, or on its own.	18 – 85+ years
	Standard Reverse 2.0	4 minutes	2 x 2 box sequence practice trials (3 attempts) 8 assessed trials (2-9 box sequences, 3 attempts)	Subjects are required to recall *in reverse* (last box first) the order that some boxes change color. This variant can be used in combination with *Standard Forward 2.0*, or on its own.	18 – 85+ years

Test	Variant	Duration	Test Structure	When to Use	Normative Data Availability
Stop Signal Task (SST)	Basic 2.0	14 minutes	4 Practice Trials 4 epochs each containing 5 blocks of trials (assessed). Go/Stop trial ratio 3:1	We recommend that this variant is used for all studies.	Not currently available
Spatial Working Memory (SWM)	Recommended standard 2.0	4 minutes	2 x 3 token practice trials 4, 6, 8 tokens assessed trials	We recommend that this variant is used for all studies.	18 - 85+ years
	Recommended Standard 2.0 Extended (Voice & Tone)	6 minutes	3 token practice 3, 4, 6, 8 12 tokens assessed	This variant can be used in populations with a wide variance in ability. This variant can be used in impaired populations, but also healthy controls, due to the more difficult stages mitigating ceiling effects.	18 - 85+ years
Verbal Paired Associates (VPA)	Recommended Standard with Tutorial 2.0	4 minutes	5 word-pairs practice (3 attempts) 8 word-pairs assessed (3 attempts)	We recommend that this variant is used at the first timepoint for all studies. This variant contains a tutorial phase in which the subject must practice remembering words.	Not currently available
	Recommended Standard No Tutorial 2.0	4 minutes	8 word-pairs assessed (3 attempts)	We recommend that this variant is used at follow-up timepoints for all studies. This variant instructs the subject on how to complete the task, but does not contain a practice phase.	Not currently available

Test	Variant	Duration	Test Structure	When to Use	Normative Data Availability
	Recommended Standard (Delayed) 2.0	4 minutes	8 word-pairs delayed recall assessed (1 attempt)	We recommend that this variant is used for all studies. This variant MUST be used in conjunction with VPA Recommended Standard with Tutorial/ No Tutorial as is does not contain a learning phase. We recommend that this variant is administered at least 5 minutes after completion of VPA Recommended Standard with Tutorial/ No Tutorial.	Not currently available
Verbal Recognition Memory (VRM)	Recommended Standard	6 minutes	18-word presentation phase Free recall phase Immediate recognition phase Delayed recognition phase (after 20 minutes)	We recommend that this variant is used in healthy populations. Stimuli are presented for 1000ms.	18-85+ years
	Prolonged Display	20 minutes	18-word presentation phase Free recall phase Immediate recognition phase Delayed recognition phased (after 20 minutes)	We recommend that this variant is used in impaired populations. This variant offers a longer stimulus presentation time of 3000ms.	Not currently available
	Prolonged Display Short Version	20 minutes	12-word presentation phase Free recall phase Immediate recognition phase Delayed recognition phased (after 20 minutes)	We recommend this variant in severely impaired populations. This variant offers a longer stimulus presentation time of 3000ms and a reduced number of stimuli.	Not currently available

Supported operating systems & browsers

Web-based assessments can be completed using a range of different operating systems and browsers:

Device	Operating System	Operating System Version	Web Browsers
Windows Laptop & Desktop Computers Using a touchscreen, mouse or trackpad to complete the tasks	Windows	10	Chrome Firefox Edge
	Windows	11	Chrome Firefox Edge
Apple Mac Laptop and Desktop Computers Using a touchscreen, mouse or trackpad to complete the tasks	Mac OS X	12 Monterey	Safari 16+ Chrome
	Mac OS X	13 Ventura	Safari 16+ Chrome
	Mac OS X	14 Sonoma	Safari 16+ Chrome
	Mac OS X	15 Sequoia	Safari 16+ Chrome
iPad Using a touchscreen to complete the tasks	iOS	16.0+	Safari 16+

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