

UK Biobank

Web-based version of Pairs Memory Test

Version 1.5

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1 Introduction

- 1.1 This manual details the procedure for the pairs memory test.
- 1.2 The UK Biobank cognitive function tests have been selected to cover a range of cognitive domains and are believed to be sensitive to cognitive decline and dementia. All tests have been constructed specifically for use in UK Biobank and other epidemiological studies in order to conform to the constraints of conducting large population-based studies. Tests have been constructed using established testing paradigms that have been shown to produce valid scores and to be acceptable to respondents.
- 1.3 Respondents were invited to complete the questions using their own devices, via touchscreen interface (tablet or phone) or traditional desktop computer.

2 Pairs memory test

- 2.1 At the start of the test, the following text is shown:

“First, we'd like you to play 2 games of Pairs. In this section you will be shown a set of picture cards. Please try to remember as many of them as you can.”

“The pictures will then be turned over. Please identify each pair of pictures by touching them on the screen. Please continue until all the pairs have been correctly identified. Press 'Next' for a short video demonstration.”

- 2.2 The following text then appears:

“Touch the 'Back' button if you want to watch the instruction video again. The first game will have 3 pairs. When you're ready to begin, touch the 'Next' button.”

Respondents select 'Next', then 3 pairs of matching symbol cards are displayed in a random pattern (Figure 1a). The symbols on the cards are distinct (although no specific selection criteria were applied to choose the designs). Respondents are asked to memorise the position of as many matching pairs as possible during the 3 seconds that cards are shown. The cards are then turned face down on the screen (Figure 1b) and respondents are asked to touch as many pairs as possible in the fewest tries. The estimated completion time for this test is 4 minutes.

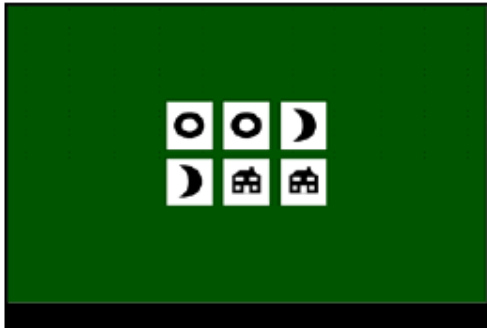


Fig. 1a. Three pairs of matching symbol cards are displayed to respondents for 3 seconds.

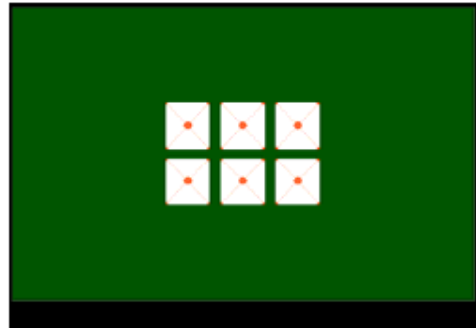


Fig. 1b: The cards are turned face down.

2.3 After one game with 3 pairs, the following text appears:

“In the next section you will be shown 6 pairs of cards. Please identify the pairs again by touching the screen. Press ‘Next’ when you are ready to begin. This game will have 6 pairs of cards.”

2.4 The game is then repeated with a set of 12 cards (6 pairs). Cards in this round are shown for 5 seconds.

2.5 The layout of cards is random in each round and there is no time restriction for the pair matching test, i.e. respondents are able to match/mismatch the pairs until all pairs are found.

2.6 The process may be abandoned at any time using the ‘Abandon’ button. If respondents press ‘Abandon’, they are presented with an ‘Are you sure?’ message. If they select ‘No’, they are returned to the screen they were on. If they select ‘Yes’, the participants then proceed to the subsequent test.

3 Data captured

The following data are stored for the web-based version of the test:

- Data field 20129: Number of columns displayed in round
- Data field 20130: Number of rows displayed in round
- Data field 20131: Number of correct matches in round
- Data field 20132: Number of incorrect matches in round
- Data field 20133: Time to complete round
- Data field 20134: When pairs test completed
- Data field 20244: Pairs matching completion status