Test of Everyday Attention for Children, Second Edition
Technical report
Overview

The TEA-Ch-2 is the gold-standard test of attention for children aged 5 years to 15 years 11 months which measures separable aspects of attention. It is an individually administered assessment which takes from 35 to 55 minutes to administer depending on the age of the child.

Measuring attention is important for understanding why a child may be having problems in everyday activities. This second edition is a unique combination of both paper-based and computerised tests which address key aspects of attention – selective, sustained and switching.

There are comic-based tasks which are worked through with the examiner and there is a new programme which will help you with administration and scoring. This scores the computer subtests automatically and you can input raw scores from the paper-based tests. The program then provides scaled scores, indexes and percentile ranks and generates a PDF report. Children are given rewards in the form of star stickers and certificates to help with motivation.

This assessment can only be used by professionals with a qualification code of CL1 which means anyone who is registered with the HCPC as a Practitioner Psychologist and is a Chartered Psychologist with the BPS; registered with the HCPC as a Practitioner Psychologist and also has the protected titles of Clinical Psychologist, Forensic Psychologist, Counselling Psychologist or Educational Psychologist.

Test Structure

**TEA-Ch J is for children aged 5 years to 7 years. The following subtests are administered:**

<table>
<thead>
<tr>
<th>Selective Attention</th>
<th>Sustained Attention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balloon Hunt</td>
<td>Barking</td>
</tr>
<tr>
<td>Balloons 5</td>
<td>SART</td>
</tr>
<tr>
<td>Hide and Seek Visual</td>
<td>Simple RT</td>
</tr>
<tr>
<td></td>
<td>Hide and Seek Auditory</td>
</tr>
</tbody>
</table>

**TEA-Ch A is for children aged 8 years to 15 years 11 months. The following subtests are administered:**

<table>
<thead>
<tr>
<th>Selective Attention</th>
<th>Sustained Attention</th>
<th>Switching Attention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hector Cancellation</td>
<td>Vigil</td>
<td>Red &amp; Blues, Bags &amp; Shoes</td>
</tr>
<tr>
<td>Hector-B Cancellation</td>
<td>SART</td>
<td></td>
</tr>
<tr>
<td>Hecuba Visual Search</td>
<td>Simple RT</td>
<td></td>
</tr>
<tr>
<td>Troy Dual Task</td>
<td>Cerberus</td>
<td></td>
</tr>
</tbody>
</table>
Updates from the TEA-Ch

Age range:
Following feedback from clinicians the age range has been extended down to 5 years of age. In order to be relevant to the wider age range, two versions were developed, the TEA-Ch2 J for children aged 5 years to 7 years and the TEA-Ch2 A for children aged 8 years to 15 years. Some tests are common to both and some are conceptually similar with age appropriate themes and challenges.

Test format:
Professionals now administer the assessment using a comic-based format which follows a story which promotes better engagement with the child and encourages a more collaborative assessment experience between this child and examiner.

Computerised testing:
The TEA-Ch2 is designed to be administered as a whole, using both computer-based and comic (paper-based) parts. Computerised assessment offers a number of advantages including highly standardised presentation of stimuli including auditory stimuli, accurate test timings and automated scoring.

Also this decision was made because some of the TEA-Ch2 subtests that had been based on computerised experimental tasks (including Walk, Don’t Walk and Creature Counting) were challenging to administer in paper-and-pencil form. Whilst tasks such as crossing out targets on a sheet of paper lend themselves to better interpretation when administered by pen and paper.

Subtest names:
To reduce possible confusion about whether a child has completed form J or A, different names are used for tests that are conceptually similar but have different detail. In TEA-Ch2 J the names reflect the activities performed, often making links with fun known activities. In TEA-Ch2 A the names of the subtests are neutral names from Greek mythology.

Test Scores:
Administration of the TEA-Ch2 provides scaled scores and index scores as the two main forms of test scores. At subtest level you will get a scaled score and percentile rank. You can also get composite scores (mean 100 SD 15) and percentile ranks for three indexes: Sustained Attention Index, Selective Attention Index and Everyday Attention Index.
Subtests

Balloon hunt/Hector Cancellation (J and A)
For the J version the aim of this subtest is to see how many balloon targets an examinee can find and mark within a series of 15-second trials. There are four trials, two with balloon-only targets (Balloon Hunt 1 and 3) and two with both balloons and distractors (Balloon Hunt 2 and 4).

For the A version the aim of this subtest is to examine how many targets an examinee can find and mark within a series of 10-second trials. There are three levels of difficulty, repeated in counterbalanced order, in which the density of distractors is varied.

Balloon 5 (J only)
The examinee is asked to complete one further page of the Balloon Hunt task but without an imposed time limit. A stopwatch is required to record the time taken.

Hector B Cancellation (A only)
The examinee is asked to complete one further page of the Hector Cancellation task without an imposed time limit. A stopwatch is required to record the time taken.

Hide and Seek Visual/Hecuba Visual Search (J and A)
This is a visual search task that does not require a motor response. The examinee is asked to inspect a series of panels and report whether a target is present or absent. This provides a measure of an examinee’s ability to detect a visual target amongst distractors, within a limited time.

Barking/Vigil (J and A)
This is a measure of an examinee’s ability to maintain their attention on a slow, dull task. In each trial there is an opening, ascending sound, indicating that the trial has begun, then a series of repeated (dog barks in the J version and tones in the A version) that are to be counted, and then a closing, descending sound, indicating that the trial is complete. Due to the long gaps between the sounds that the examinee has to count, the task does not ‘grab’ the examinee’s attention. This addresses the examinee’s ability to self-sustain their attention.

Tasks:
This table shows the original TEA-Ch subtests and their TEA-Ch2 equivalents.

<table>
<thead>
<tr>
<th>Domain</th>
<th>TEA-Ch subtests</th>
<th>TEA-Ch2 J Equivalents</th>
<th>TEA-Ch2 A Equivalents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selective Attention</td>
<td>Sky Search</td>
<td>Balloon Hunt</td>
<td>Hector Cancellation</td>
</tr>
<tr>
<td></td>
<td>Sky Search DT</td>
<td>n/a</td>
<td>Troy Dual Task</td>
</tr>
<tr>
<td></td>
<td>Map Mission</td>
<td>Hide &amp; Seek Visual</td>
<td>Hecuba Visual Search</td>
</tr>
<tr>
<td>Sustained Attention</td>
<td>Score</td>
<td>Barking</td>
<td>Vigil</td>
</tr>
<tr>
<td></td>
<td>Score DT</td>
<td>SART</td>
<td>SART</td>
</tr>
<tr>
<td></td>
<td>Walk Don’t Walk</td>
<td>Simple RT</td>
<td>Simple RT</td>
</tr>
<tr>
<td></td>
<td>Code Transmission</td>
<td>Hide &amp; Seek Auditory</td>
<td>Cerberus</td>
</tr>
<tr>
<td>Switching Attention</td>
<td>Creature Counting</td>
<td>n/a</td>
<td>Red &amp; Blues, Bags &amp; Shoes</td>
</tr>
<tr>
<td></td>
<td>Opposite Worlds</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Hide and Seek Auditory/Cerberus (J and A)
This is an auditory target-detection task in which the examinee is asked to listen to short sound clips and press the spacebar as quickly as possible if a bark occurs. Distractor sounds can also be heard, but examinees are required to ignore these sounds. The examinee will be asked to listen carefully to each sound clip in which sometimes a dog bark will be heard, and sometimes not. Distractor sounds in the form of other animal noises will also be heard, but the examinee is told to ignore these.

Simple Reaction Time (J and A)
The aim of this test is to obtain a reliable estimate of simple reaction time by measuring responses to the onset of a visual target. As soon as they see a blue blob appear on the screen they must press the space bar.

Sustained Attention Response Test (J and A)
This is a test of the examinee's ability to maintain an attentive stance to a task and not allow their responses to be 'driven' in an absentminded fashion by the task. In the SART, a set of shapes is presented sequentially in the centre of the monitor. The shapes are presented at a regular pace that is independent of the examinee's response. The examinee's task is to respond to each of the shapes by hitting a response key in time with an on-screen cue, but to withhold the response to one of the shapes.

Troy Dual Task (A only)
This subtest examines slowing in a Hector Cancellation-like task, resulting from simultaneous performance of a Vigil-like auditory counting task. A series of to-be-counted sounds is played as the examinee marks given targets. On each trial, the cymbal crash at the end of a countdown drum sequence indicates when the examinee should start cancelling yellow lozenge targets (as in Hector Cancellation task). The next cymbal crash indicates when the examinee must stop cancelling targets and report how many sounds were presented (as in Vigil task).

Reds and Blues, Bags and Shoes (A only)
This is a test of mental flexibility that addresses the cost of switching between two relatively simple tasks. Examinees are asked to practice sorting four repeating stimuli according to colour (red one side of the screen, blue on the other) and to whether they are held in the hand or worn on the foot.

Normative Data
The TEA-Ch2 UK standardisation was coordinated by the development team at Pearson Clinical UK from March 2012 to December 2015.

Participants were targeted to closely match the distribution of males and females in the UK according to the 2011 Census. The same approach was taken to include equal numbers of participants in each school year between the ages of 5 and 15 years. Standardisation sample was matched to 2011 census data for age, sex, SES and ethnicity to ensure the diverse population is represented.

The TEA-Ch2 A standardisation sample consisted of 621 children, ranging in age from 8 to 16 years. The TEA-Ch2 J standardisation sample consisted of 394 children, ranging in age from 5 to 8 years.

Reliability
The TEA-Ch2 has good reliability. Internal Consistency coefficients for the TEA-Ch2 J range from moderate (.5) to good (.8), with most subtests being good. For the TEA-Ch2 A, Internal Consistency coefficients ranged from moderate (.5) to excellent (.9) with most subtests being good or excellent. Test-retest stability coefficients for the TEA-Ch2 J range from lower (.3) to acceptable (.7), with most subtests being adequate (.6). For the TEA-Ch2 A, stability coefficients ranged from lower (.4) to good (.8) with most subtests being acceptable.

Validity
The TEA-Ch2 has strong validity, which we have looked at in three main ways: using special group studies (criterion validity), looking at relationships with other measures (concurrent validity) and looking at the test's internal structure (construct validity).

• Special Group Studies showed children referred for attention/behaviour problems showed weaknesses affecting several subtests compared with matched controls.

• Relationship with other variables: The TEA-Ch2 was administered alongside the Strengths & Difficulties Questionnaire (SDQ). The results show that TEA-Ch2 subtests and indices were correlated with a number of SDQ scores, particularly the Hyperactivity/Inattention, Conduct Problems and Peer Problems subscales; accordingly, TEA-Ch2 subtests and indices were correlated with the SDQ External Problems dimension.

• Internal Structure: Structural Equation Modelling (SEM) of the TEA-Ch2 data confirmed that the individual subtests contributed unique variance, and so each address different abilities; that two common underlying factors emerged, supporting the construct validity of the Selective Attention and Sustained Attention indexes; and that the two attention factors were correlated, endorsing the overall Everyday Attention Index.
FAQ’s

Q: Computer components to TEA-Ch2
A: ‘The TEA-Ch2 kit comes with a USB drive included, which has the TEA-Ch2 program on it. The user places this in the USB slot and downloads an .exe file onto their PC/Mac. Running this file will extract the program onto the PC and initiate the password and log-in processes. Thereafter, the program remains loaded onto the PC/Mac, just like any app, program, or game. It will open when selected from the program list or if the icon is clicked.’

Q: Technical Requirements:
A: The computerized subtests of the TEA-Ch2 will run well on devices that meet minimum specification as follows:

   Hardware:
   • a minimum of 500mb of free disk space
   • at minimum of 2GB of physical memory (RAM)
   • must support Hardware-accelerated OpenGL or OpenGL ES.

   Software:
   • Windows operating system (OS) Vista, Windows 7, Windows 8, Windows 8.1, Windows 10 or later
   • Mac operating system (OS) 10.8 or later.

The TEA-Ch2 is 32bit application and will run on both 32bit and 64bit operating systems. Please note that the TEA-Ch2 program is not supported on tablet or mobile devices.

Materials

The TEA-Ch2 complete kit includes:

• USB memory stick with program application
• Administration, scoring and technical manual
• TEA-Ch2 J comics
• TEA-Ch2 A comics
• Star stickers
• Scoring acetates
• Red pen
• Powered external speakers
• Stopwatch

Current pricing and ordering details can be found at pearsonclinical.co.uk/teach2tech

For further information on the TEA-Ch2 arrange a product presentation with your Area Sales Consultant at pearsonclinical.co.uk/salesconsultant

Related products

Test of Everyday Attention (TEA)

Behavioural Assessment of the Dysexecutive Syndrome in Children (BADS-C)