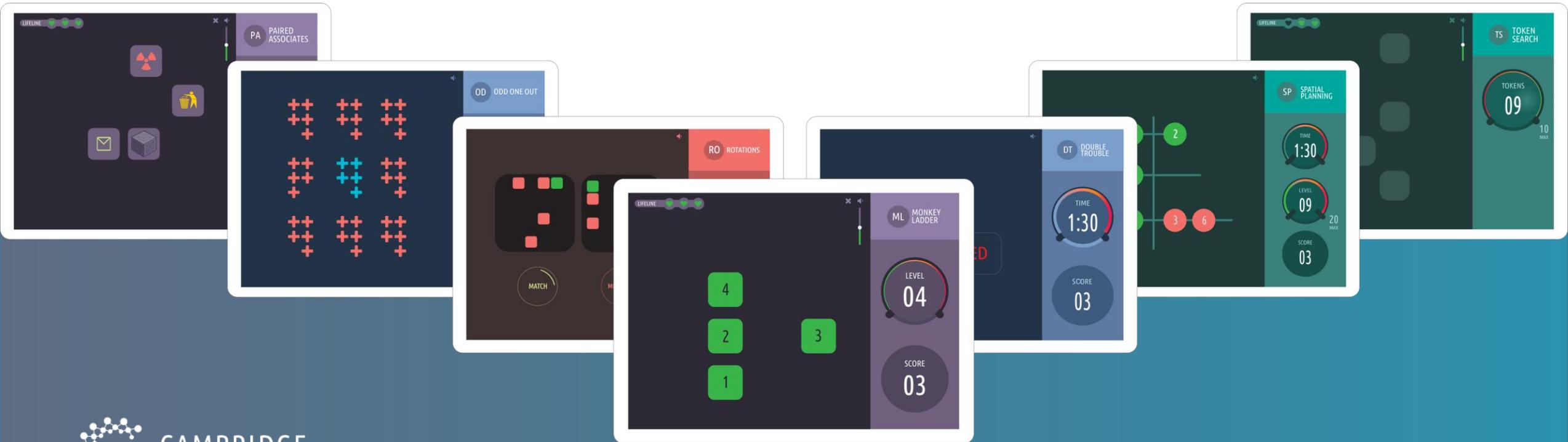


# CBS HEALTH OVERVIEW

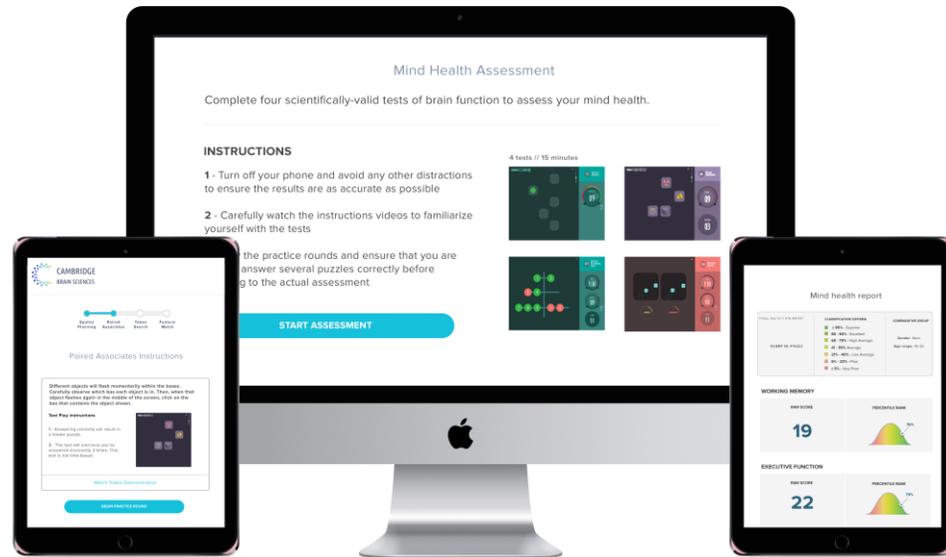


CAMBRIDGE  
BRAIN SCIENCES

A leading provider of simple and powerful **online cognitive assessment solutions**

# INTRODUCTION TO CAMBRIDGE BRAIN SCIENCES

Based on the pioneering work of renowned neuroscientist Dr. Adrian Owen, Cambridge Brain Sciences is a leading technology company focused on the assessment of brain function and brain health.



- ✓ Over **10 million completed tasks** globally
- ✓ Backed by **25+ years** scientific research
- ✓ Tasks used in more than **300 peer-reviewed studies**



# DR. ADRIAN OWEN

## Founder and Chief Scientific Officer

Global neuroscience  
thought leader



Published in science's most  
prestigious publications

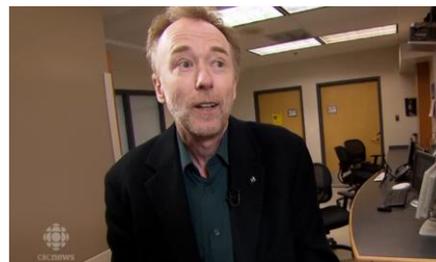


Numerous research  
awards



- "Top 100" Science list (The Times London)
- 2013 Hellmuth Prize for Achievement in Research
- Scientist to Watch – 2008 (Financial Times UK)

A trusted brain health authority for the world's leading media outlets



# EVOLUTION OF CAMBRIDGE BRAIN SCIENCES

Based on Decades of Cognitive Research

Our tasks are well understood and accepted by medical and scientific professionals working in the area of assessing cognition.

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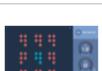
(Corsi) Block Tapping Task  
(1972)



CBS Spatial Span Task  
(2016)



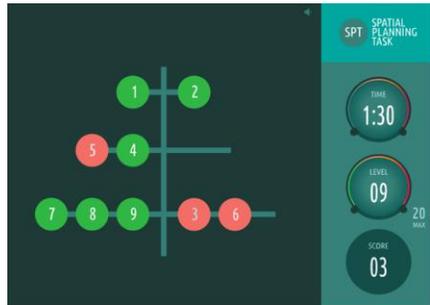
# COGNITIVE DOMAINS ASSESSED BY THE CAMBRIDGE BRAIN SCIENCES TASKS

Domain	Sample	Test Name	Outcome Measure	Associated Brain Regions
MEMORY		Monkey Ladder	Visuospatial Working Memory	<ul style="list-style-type: none"> <li>Prefrontal cortex / mid-dorsolateral prefrontal cortex</li> <li>Premotor cortex</li> <li>Posterior parietal cortex</li> </ul>
		Spatial Span	Spatial Short Term Memory	<ul style="list-style-type: none"> <li>Right mid-ventrolateral area</li> <li>Parieto-occipital regions</li> </ul>
		Token Search	Working Memory	<ul style="list-style-type: none"> <li>Frontal lobe</li> <li>Temporal lobe</li> <li>Amygdalo-hippocampal region</li> <li>Mid-ventrolateral frontal cortex</li> <li>Mid-dorsolateral cortex</li> <li>Premotor cortex</li> </ul>
		Paired Associates	Episodic Memory	<ul style="list-style-type: none"> <li>Left dorsolateral prefrontal cortex</li> <li>Ventral and anterior left prefrontal cortex regions</li> <li>Ventral prefrontal cortex</li> <li>Ventral region of the parietal cortex</li> </ul>
REASONING		Rotations	Mental Rotation	<ul style="list-style-type: none"> <li>Intraparietal sulcus</li> <li>Medial superior precentral cortex</li> </ul>
		Polygons	Visuospatial Processing	<ul style="list-style-type: none"> <li>Right dorsolateral prefrontal cortex</li> <li>Right hemisphere</li> </ul>
		Odd One Out	Deductive Reasoning	<ul style="list-style-type: none"> <li>Anterior frontal cortex</li> <li>Anterior insula / frontal operculum</li> <li>Inferior frontal sulcus</li> <li>Anterior cingulate</li> <li>Presupplementary motor area</li> <li>Intraparietal sulcus</li> </ul>
		Spatial Planning	Planning	<ul style="list-style-type: none"> <li>Frontal lobe</li> <li>Mid-dorsolateral frontal cortex</li> <li>Caudate nucleus</li> <li>Thalamus</li> <li>Lateral premotor</li> <li>Anterior cingulate</li> </ul>
VERBAL ABILITY		Grammatical Reasoning	Verbal Reasoning	<ul style="list-style-type: none"> <li>Frontal operculum</li> <li>Posterior temporal lobe</li> <li>Superior parietal lobe</li> <li>Dorsal prefrontal cortex</li> <li>Ventral prefrontal cortex</li> </ul>
		Digit Span	Verbal Short Term Memory	<ul style="list-style-type: none"> <li>Mid-ventrolateral prefrontal cortex</li> </ul>
CONCENTRATION		Feature Match	Attention	<ul style="list-style-type: none"> <li>Mid-ventrolateral frontal cortex</li> <li>Right inferior frontal gyrus</li> </ul>
		Double Trouble	Response Inhibition	<ul style="list-style-type: none"> <li>Right prefrontal cortex</li> <li>Dorsolateral region</li> </ul>

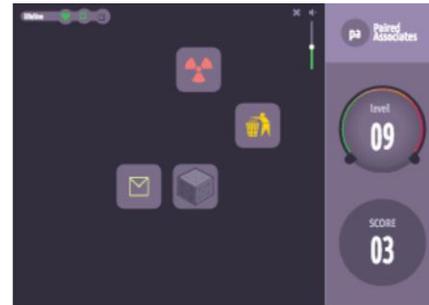
Proven to target core cognitive and executive functioning domains that apply across a wide range of contexts.

- ✓ Task performance is directly **linked to distinct brain regions** via imaging technologies like functional magnetic resonance imaging (fMRI) and positron emission tomography (PET) in both healthy and unhealthy individuals.
- ✓ Numerous academic studies published showing that the cognitive function assessed by each task was significantly different in individuals who have experienced neurological disorders

# ADVANTAGES OF THE CAMBRIDGE BRAIN SCIENCES TASKS



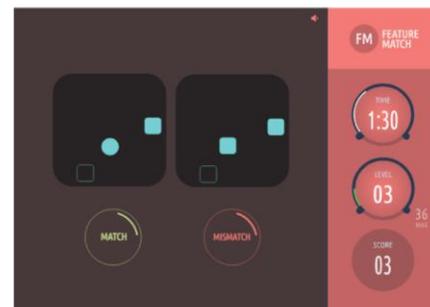
**SPATIAL PLANNING**  
Planning



**PAIRED ASSOCIATES**  
Episodic Memory



**TOKEN SEARCH**  
Working Memory



**FEATURE MATCH**  
Attention

- ✓ Low cost and high convenience (1.5 – 3 mins per task)
- ✓ Self administered – can be completed on or off-site
- ✓ Large proprietary normative database of 75,000+ broken down by age and gender for comparative purposes
- ✓ Web-based data correlates highly with lab-based testing
- ✓ Test re-test reliability is excellent. Tasks are extremely sensitive to minor differences in cognitive performance
- ✓ Based on advanced brain mapping and brain imaging tools (fMRI) and validated in over 300 peer-reviewed studies

# CBS KEY FEATURES

CAMBRIDGE BRAIN SCIENCES | HEALTH

End Assessment

Welcome to your cognitive health assessment

**INSTRUCTIONS**

- 1 - Find a quiet environment that will be free of interruptions or distractions during the assessment to ensure results are as accurate as possible.
- 2 - Please turn off your smartphone for the duration of this test. To further reduce distractions, consider closing all other applications or disabling notifications.
- 3 - Pay close attention to the interactive test tutorials to familiarize yourself with the test instructions.

**START ASSESSMENT**

By starting this assessment, you are agreeing to the Cambridge Brain Sciences Terms of Use and Privacy Policy.

**TEST OVERVIEW**  
4 Tests // Approximately 11 minutes

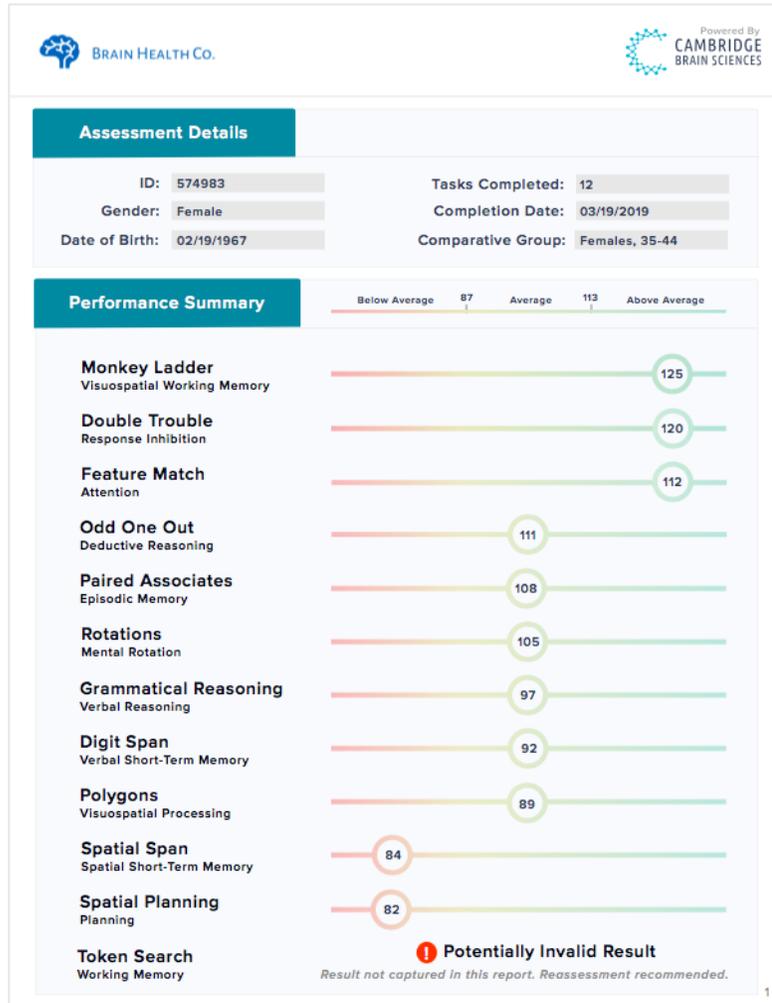
- Double Trouble**  
Response Inhibition
- Odd One Out**  
Deductive Reasoning
- Polygons**  
Visuospatial Processing
- Grammatical Reasoning**  
Verbal Reasoning

**Flexible and scalable** – assessments can be taken on multiple platforms (laptops, desktops and tablet devices), administered in person or via email, and can be made up of any number of tasks that suit specific needs

**Engaging user experience** – significant investment in producing an engaging and unintimidating experience, ensuring that users can quickly and effectively understand the task instructions in order to produce accurate results

**Convenient and quick** – takes less than 15 minutes to complete a 4-task battery providing a quantitative and objective measure of cognition function compared to our large normative database

# WHY CBS HEALTH?



- ✓ Show subjects a quantitative and objective measure of their cognitive health
- ✓ Managing Brain Health – Review trends over time to identify improvements or decline
- ✓ Measuring Change – Use CBS Health to measure the impact of specific interventions
- ✓ Help educate subjects on the core areas of cognition.