



# Cognetivity

## Neurosciences

Powering **proactive** brain **health**

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### **The ICA**

Integrated Cognitive Assessment

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# About Us



## Cambridge University Spin-out

Formed by a team of world class scientists and business leaders



## Advanced Technology

Platform combines latest neuroscience with cutting edge Artificial Intelligence



## Market Ready

Ready for clinical use in the world's biggest healthcare markets, the USA and EU



## Established partnerships

Scaling up working with charities, governments and best in class technology providers



Our Vision

Establishing a new global  
standard in cognitive  
measurement



## Dementia is the biggest healthcare challenge of the 21<sup>st</sup> century

Between 2000 and 2018, deaths in the US from heart disease fell by 7.8% while deaths from Alzheimer's increased by **146%**. Alzheimer's on its own is the **sixth-largest cause of death in the US**, *killing more than breast, prostate & pancreatic cancer combined.*

... yet in high-income countries, around **1 in 2** people never receive a formal diagnosis, increasing to **9 in 10** in poorer countries – on average, an estimated **75% of the global dementia population.**

The costs of late detection of dementia are estimated to be as high as **\$7.9 trillion** in the US alone

*Sources: Alzheimer's Association, 2020, 2018; UK Office for National Statistics, 2018; Centers for Disease Control and Prevention, 2017; Alzheimer's Disease International, 2015*

# There is a problem with detecting dementia

*Existing cognitive assessment methods suffer from...*



## Precision Limitations

Assessor bias / subjective interpretation

Crude and static cut offs

Lack of sensitivity to early-stage disease



## Practical burdens

Time consuming

Requires expert administration

Cannot be delivered remotely



## Language dependence

Bias due to reliance on language

Cultural inconsistencies



## Education bias

Less educated perform less well



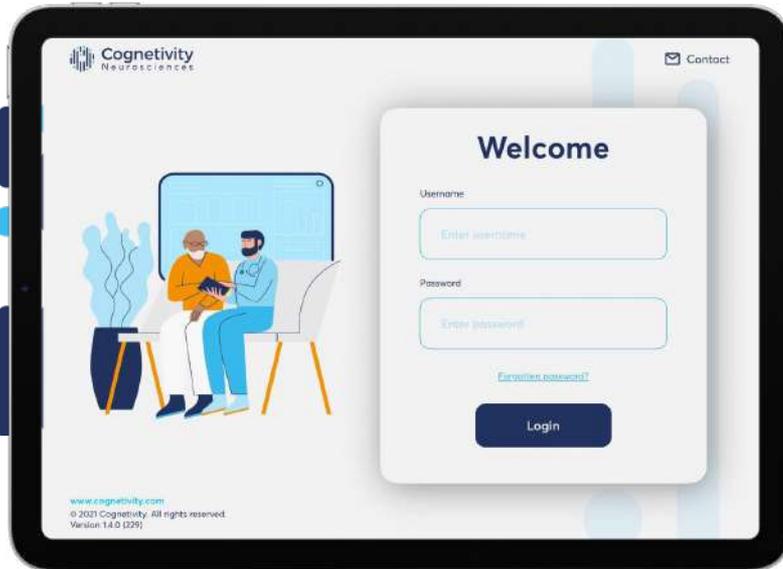
## A learning effect

Regular assessments not possible

Not suitable for longitudinal monitoring

# Introducing CognICA™

*Solving the problem with a patented SaaS platform*



- ✓ FDA 510k & CE Class II Medical Device
- ✓ User Friendly
- ✓ Platform Agnostic
- ✓ Interoperable
- ✓ Massive Societal Impact

# How the ICA works

*A patented rapid visual categorization task using natural images of animals*

Images are displayed for a fraction of a second.  
Users tap to classify each in turn as **animal** or **non-animal**.



Using speed and accuracy as a digital biomarker allows effective assessment of cognitive function. See it in action at [cognetivity.com/cognicademo](https://cognetivity.com/cognicademo)



The use of animal images is an important element of the test – **the human brain's strong reaction to animal stimuli is a key facet of our developmental history**

# Utilising Artificial Intelligence for accurate assessments



- ✓ Ever-evolving explainable AI allows continuous improvement as the data set grows.
- ✓ AI enables dynamic classifiers and can incorporate additional data, improving sensitivity
- ✓ Expandable AI allows development of predictive models for multiple diseases

# Comparing different detection methodologies

*Across speed, cost, invasiveness, applicability...*

METHOD	QUICK	LOW-COST	NON-INVASIVE	SENSITIVE	EARLY-STAGE DETECTION	DELIVERABLE REMOTELY
CognICA™	✓	✓	✓	✓	✓	✓
Traditional pen-and-paper tests	✗	✓	✓	✗	✗	✗
Computerized traditional tests	✗	✗	✓	✗	✗	✓
Biomarker analysis (CSF sampling)	✗	✗	✗	✓	✗	✗
Neuroimaging (MRI, CT)	✗	✗	✓	✓	✗	✗



Benefits for  
healthcare  
providers...



**Major competitive advantages  
in clinical practice**



### Speed

*A 5-minute test, self-administered under non-expert supervision, leading to increased patient throughput and cost-efficiency*



### Sensitivity and accuracy

*Can detect cognitive impairment significantly earlier than current methods*



### Scalability across cultures

*Consistency across individuals from different language, cultural and educational backgrounds*



### Remote delivery

*Potential to assess patients in the comfort of their homes*



### Longitudinal monitoring

*Long-term tracking of pre-dementia patients (MCI) or responses to treatment*



## The ICA platform is applicable anywhere a cognitive assessment is required



### **Drug discovery**

*Sensitive & high-resolution cognitive end point – for phase 2/3 neurology pipeline*



### **Population health**

*Risk-based, large population screening*



### **Predictive modelling**

*Research collaboration for disease prediction*



### **Beyond the pill**

*Self monitoring and patient engagement (Companion App for patients with AD and MS)*



### **Personalised health coach**

*Accessible set-up to track performance over time, providing support for users to make necessary lifestyle adjustments*

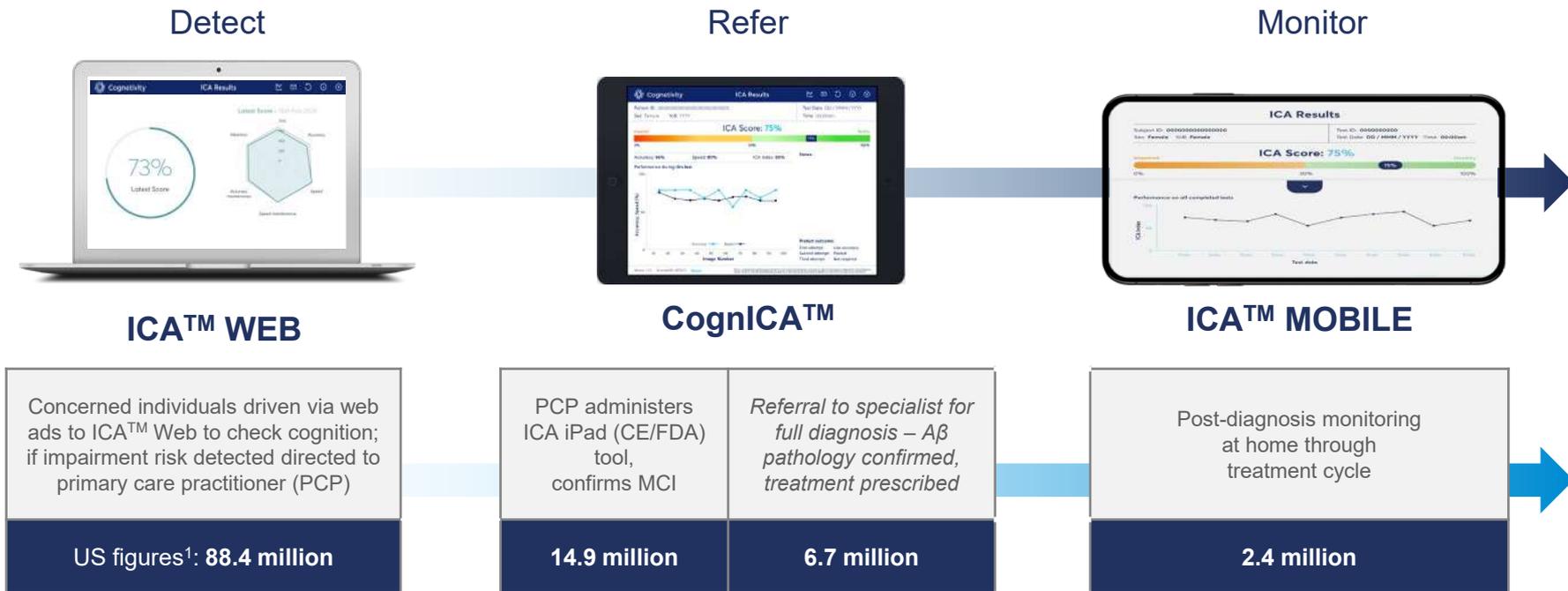
# Platform technology powering a wide range of solutions

*Multiple cognitive assessment products for multiple markets*

	Product	Market	Revenue Model	Channel to Market	Competitive Advantage
PROFESSIONAL regulatory approved	CognICA™	Primary care Secondary care	Charge per test / Licensing Existing CPT codes	EHR providers Pharmaceutical / diagnostic Direct sales	Speed Accuracy Non-expert administration
	CognICA™	Elderly care Remote monitoring	Monthly subscription / Licensing	Telehealth providers Direct sales	Ease of use Repeatability High resolution feedback
Clinical Trial	ICA_CT™	Drug development	Subscription	Biopharma CROs	Precision Free from learning effect Remote deliverability
CONSUMER FACING	CognICA™ WEB	Large-scale detection and monitoring	Subscription / licensing (B2B2C)	Biopharma Clinical providers	Sensitivity Free from learning effect Remote deliverability
	OptiMind™	Consumer wellness	Subscription (B2B2C) Subscription (B2B)	Corporate B2B White-label development Insurance providers	Sensitivity User feedback Cross-platform integration

# End to end solution for the entire patient pathway

Delivery through different channels allows effective management of the entire patient journey



<sup>1</sup><https://www.bloomberg.com/news/articles/2021-05-24/biogen-s-new-alzheimer-s-drug-faces-hurdles-reaching-patients-even-if-it-s-approved>

# CognICA™

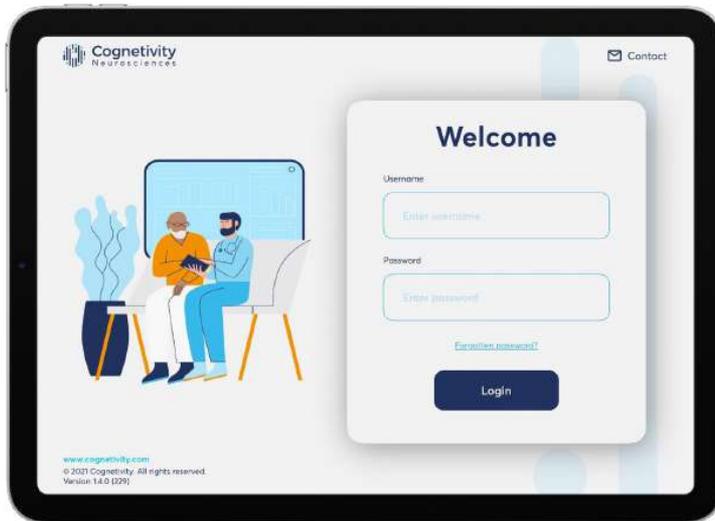
*Addressing a huge unmet need in the US healthcare market*

- ✓ FDA registration complete October 2021
- ✓ CognICA™ cleared for marketing in the US
- ✓ Existing CPT codes for cognitive assessment

## Enormous market

- c. 95,000,000 over 55s
- c. 130,000,000 annual visits to primary healthcare by over-65s

Source: 2016 National Ambulatory Medical Survey (NAMCS)



**Better patient outcomes and better standard of care**

- ✓ Easy to use
- ✓ Less time consuming
- ✓ Fully integrated

## Growing client list

*Positive early traction in several countries – launchpad for success*



مركز كليمنصو الطبي  
CLEMENCEAU MEDICAL CENTER

AFFILIATED WITH JOHNS HOPKINS INTERNATIONAL



Featured in:

The Economist



WIRED

# Establishing the de facto cognitive assessment

*Bringing the ICA technology to a global market and day to day practice with integrations and partnerships*



# Our management team

*A Cambridge University spin-out, we are proud that our team has grown to include...*



**DR SINA HABIBI** Co-founder, CEO

PhD (Engineering, Nanobiotechnology, Synthetic Biology), University of Cambridge; formerly Chair of Cambridge University Entrepreneurs (CUE), high-tech consultant



**DR THOMAS SAWYER** Chief Operating Officer

PhD (Life Sciences), University of Glasgow; MBA, University of Cambridge; 20 years' experience in entrepreneurship, consulting and private equity in biotechnology, pharmaceuticals, logistics and IT across the globe



**DR MARK PHILLIPS** Chief Compliance Officer

PhD (Management), University of Cambridge; 30 years' experience in the pharmaceutical and life science industries; previously Senior Vice President in R&D and Head of Diagnostic Development and Supply at GlaxoSmithKline



**DR SEYED RAZAVI** Co-founder, CSO

PhD (Computational Neuroscience), University of Cambridge; previously a postdoctoral researcher in Artificial Intelligence at the Massachusetts Institute of Technology (MIT)



**DR CHRIS KALAFATIS** Chief Medical Officer

Consultant in Old Age Psychiatry at Maudsley Hospital, London; Affiliate of King's College London, adoption of digital technologies in NHS, running clinical trials in dementia at Institute of Psychiatry, Psychology & Neuroscience



**MAZEN SOBH** VP Commercial Development

MBA, University of Wollongong; RN, American University of Beirut, Business Director Philips; 9 years of clinical experience and 15 years in Healthcare Information Technology Sales and Marketing in international markets



**JOEL SMITH** Vice President Of Business Development

High growth business development specialist; 20 years experience including in SaaS & artificial intelligence products; Highly regulated market experience; Demonstrated expertise building & scaling commercial strategy in US

## Key Advisors

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**Keith Gibbs**, former Chairman AXA

**Prof Dag Aarsland**, King's College London

**Dr Carol Routledge**, ARUK, DDF, GSK

**Lord James O'Shaughnessy**, former UK health minister

**Ed Smith**, Chair NHS Improvement

# Company summary

January 2022

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OTCQB:CGNSF

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