



## **To Manage Brain Fitness Through Life, We Need to Put Puzzle Pieces Together**

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The main value of the independent NIH panel mentioned in the previous article comes from the recommendations it makes for research, industry and government to fill the gaps in the scientific evidence in years to come. The final report recommendations include several that may greatly impact the work of professionals in aging:

- “Factors that may now be ready to be assessed further in RCTs (randomized clinical trials) are physical exercise and cognitive engagement....”
- “A standardized, well-validated, and culturally sensitive battery of outcome measures needs to be developed and used across research studies to assess relevant domains of cognitive functioning in a manner that is appropriate for the functional level of the population sample being studied...”
- “A simple, inexpensive, quantitative instrument to assess mild cognitive impairment, which can be administered in a repeated manner by trained (nonexpert) staff in both the primary care office and the research/specialty clinic, needs to be established....”

In other words...

- You can expect a growing number of evidence-based brain fitness interventions building primarily on physical exercise and cognitive engagement.
- Professional development will need to focus on cognition and how to assess and enhance a number of cognitive domains critical for successful aging
- You can expect to have access, both as a consumer and as a professional, to standardized cognitive screening tools with more sensitivity and specificity than the today ubiquitous Mini-Mental Exam (MMSE)

In fact, having access to objective, automated assessments to help consumers better monitor their cognitive health and take proactive, informed action is the one part of the brain fitness puzzle that is badly needed.

It is estimated that 60% of people with Alzheimer’s Disease go undiagnosed. Most patients today get diagnosed with Alzheimer’s too late and based on tools which are not sensitive enough to pick up on subtle problems in thinking and memory needed to make accurate diagnosis and distinguish among different memory disorders. This often results in having many

individuals with high education and intellect appear 'normal' when in fact they have an Alzheimer's-induced memory and cognitive slowdown.

Although promising brain imaging methodologies may help identify at-risk individuals, detailed neuropsychological evaluation remains the diagnostic gold standard. And, fortunately, a growing number of companies are starting to address this gap in the marketplace.

- ALZselftest is a new internet-based cognitive test which detects very early warning signs of Alzheimer's disease. It is designed to assess six functional cognitive domains which can be impaired by Alzheimer's disease and mild cognitive impairment. The test is available directly to the public, so it can be taken at home. It can serve as a cognitive screening tool in early detection of cognitive impairment in the primary care setting. A validation study published in early 2010 showed much promise in 2 areas. First, it accurately classified 96% of the cognitively impaired individuals as compared to controls, while the Mini-Mental Status Examination (MMSE) accurately classified 71% and the Mini-Cog only 69%. Second, it accurately classified 91% of the six experimental groups (control, MCI, early AD, mild to moderate, moderate to severe, and severe) as compared to 54% for the MMSE and 48% for the Mini-Cog.
- Two other companies, Brain Resource and NeoCORTA, have started to offer computerized assessments for consumers, designed not as diagnostics but as personalized action plans to optimize brain fitness, building on personalized baselines of cognitive and emotional health that consumers can track over time, and share with caregivers or health professionals.

This emerging set of computerized tests may help address an important gap identified in the ASA-MetLife Foundation Attitudes and Awareness of Brain Health Poll (2006), where an overwhelming majority of adults surveyed said that thinking abilities should be checked routinely, just like a physical checkup. At the same time, it raises potential concerns on whether test practice on these consumer-facing instruments may affect the validity of traditional medical tests.

One implication from the independent NIH panel is that we don't have –and we shouldn't expect to have any time soon- any kind of "silver bullet" or "magic pill" to prevent or treat Alzheimer's Disease. What we do have -and will have more of- is a growing number of tools and lifestyle options that can help put together the pieces of the brain fitness puzzle.

Another implication is that we would all be better served by thinking about neuroplasticity more as an invitation to lifelong brain development, to maximize and reach our human potential, than as a means to prevent disease. A major policy report issued in late 2008 by Foresight, a UK government think-tank, recommended that, based on latest scientific evidence, policy-makers should focus on boosting mental capital and wellbeing "from cradle to grave."

Searching for tips for lifelong brain development? Here we may turn to the collective advice of the 1,900+ respondents to 2010 SharpBrains Annual Poll. When asked, "If you were to design a

brain fitness public awareness campaign, which 3 elements would you emphasize?, " they prioritized:

- 1) Aerobic exercise (70%),
- 2) Engaging in professional and intellectual challenges (65%),
- 3) Practicing meditation (45%),
- 4) Using structured, computer-based brain training programs (45%),
- 5) Reading books (44%).