

Promoting Brain Health and Preventing Dementia

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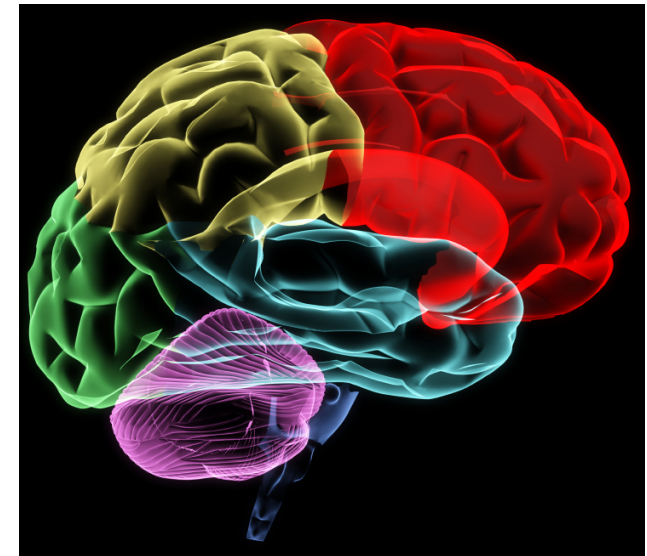
*Founder and Chief Director, Center for BrainHealth
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Center for BrainHealth

Scientific research institute committed to enhancing human cognitive potential

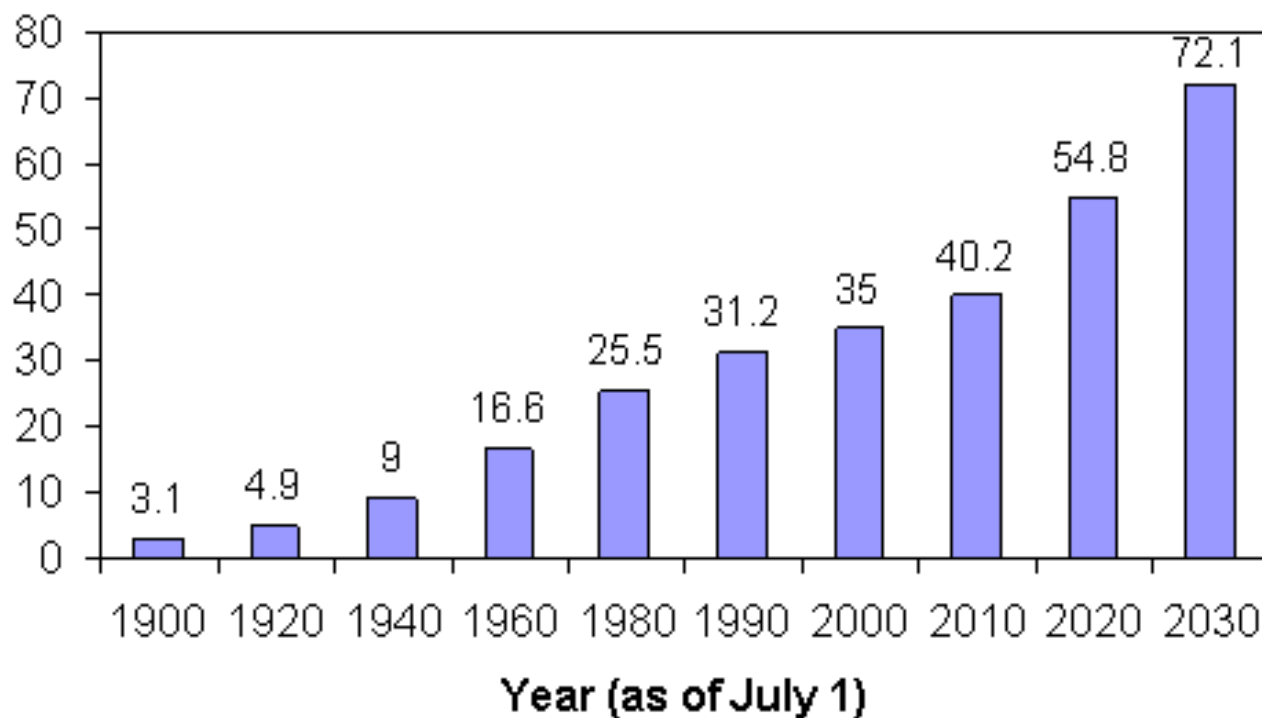
Dedicated to understanding, protecting and building brain capacity

Helping individuals think smarter, longer



People Are Living Longer

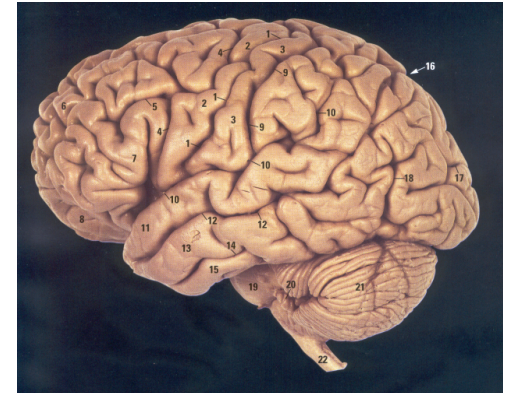
**Figure 1: Number of Persons 65+,
1900 - 2030 (numbers in millions)**



(Sources: Projections for 2010 through 2050 are from: The figures for 2007 are from the Census Bureau 2007 population estimates.)

Three Truths

1. Our body is outlasting our mind
2. Strong evidence exists revealing:
 - What *drives* brain health
 - What *derails* brain health
3. Brain health is twenty years behind heart health.
Twenty to forty years is too long to translate brain health discovery to impact lives.



What is brain health fitness?

Maintaining and improving cognitive function by exercising one's brain

(Similar to the concept of exercising your body)

Exercising your brain means staying mentally active through:

- *Continued education*
- *Complexity of occupation & life work*
- *Frequency of cognitive lifestyle activities*

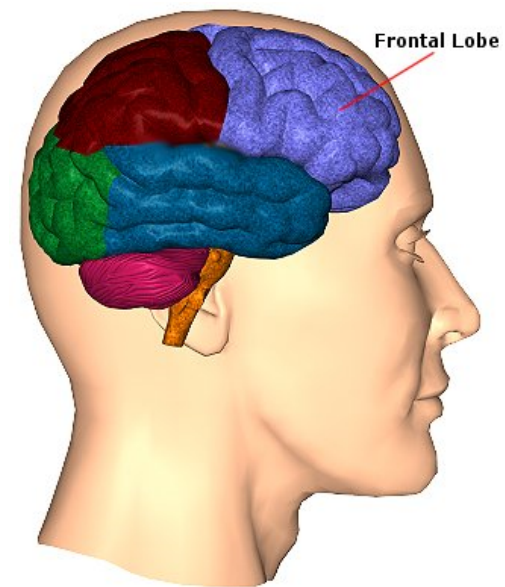
What is brain health fitness?

Optimizing cognitive core capacities necessary for everyday complex demands

Frontal lobe functions

- Strategic attention
- Complex reasoning
- Innovative thinking

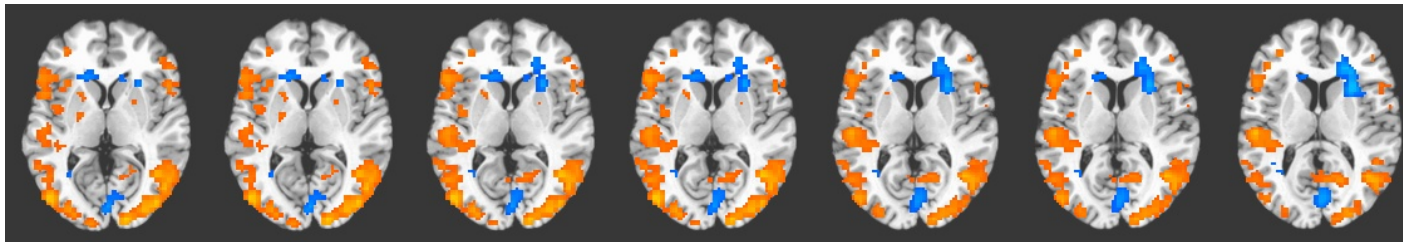
More than memory



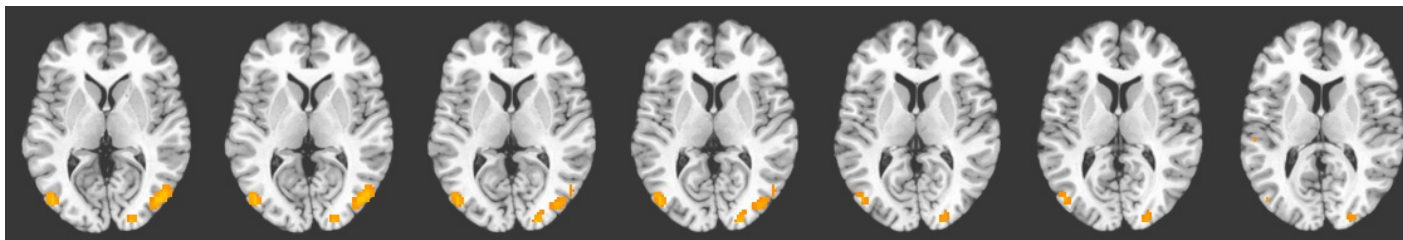
What is the evidence?

Science offers persuasive and mounting evidence that complex mental activity enhances brain health and reduces risk of dementia.

As the brain is properly exercised, it works more efficiently with dynamic changes in brain activation - in essence, smarter not harder.



Pre brain training



Post brain training

Benefits of Complex Mental Activity

Animal studies show that enriched cognitive activity achieved three gains:

1. Protection against cognitive impairment
2. Decreased brain amyloid burden
3. Increased hippocampal synaptic effects

Note: Neither social nor physical components, either alone or in combination, showed similar gains



Science Revealing How to Boost Brain Health

Improve problem solving and complex thinking
necessary for independent living

Continuously synthesize meaning from abundant
information overload

Efficiently focus and ignore unimportant information

Emphasize robust form of memory

Cognitive Engagement May Stave Off Dementia

Participating in cognitively-challenging activities is associated with:

- *Lower incidence of dementia*
- *Slower rate of decline in mild dementia*
- *Recent study of 29,000 individuals showed 46% lower incidence of dementia if engaged in high mental activity*

Lifetime of cognitive engagement linked with:

- *Lower beta-amyloid deposition*
- *Increased synapses in frontal lobe and other brain areas*
- *Augmented vasculature density*

How Can We Better Connect the 'Players' ?

Texas Council on Alzheimer's Disease and Related Disorders

- *Determined we needed a State Plan for Alzheimer's disease and Prevention*

Texas Alzheimer's Research and Care Consortium

Texas Department of State Health Services, Alzheimer's Disease Program

- Helped to coordinate writing of plan

Partnership of cutting-edge institutes and experts working to write First State Plan ever on brain health and prevention

Substantial Progress: Stalled without funding

I became involved through Partnership to draft brain health and prevention component of Alzheimer's plan

- *Leaders from existing Infrastructure had foresight to include brain health component*
- *Have elaborate plan that is stalled without funding*

Brainomics©: the economic impact of brain capacity

- High economics costs of brain drain
- Immense economic benefits from brain gain

With tsunami of Boomers reaching 65, Texas must take action now to advance brain health – our greatest resource and cost burden.

Recommendations: Texas lead nation in brain health solutions

Every 5 to 10 years we delay to implement brain health awareness and practices, we will fail to positively impact a whole generation

- 1. Prevention must be a state priority*
- 2. No cure or effective drug therapy for dementia – must dedicate funding to prevention and brain health efforts to make a difference in lives today*
- 3. Texas must proactively address looming brain health vulnerabilities since we are predicted to have one of nation's largest aging populations.*

Funding Will Advance & Promote Brain Health Today

Increase public awareness of importance

- Staying mentally active, even after retirement
- Rebounding from brain hits, e.g., chemo, anesthesia
- Getting brain health baseline measurement

Identify and develop compendium of sensitive measures, online measures, and training for health care providers to conduct brain health testing

Develop Texas Healthy Brain Network to:

- Provide venues to promote cognitive brain training
- Vet evidence: too much and conflicting



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