

# In Home Assistive Technologies

How can we use existing technologies to lessen the need for so many in-home specialists?



**Michael Belleville**





## Dementia 50 million

Approximately 50 million people worldwide have dementia.

One new diagnosis every 3 seconds.



## Dementia cost \$818 billion

The majority of care is provided by family carers.



## Mortality 7th

Dementia is now the 7th leading cause of death.

# There is no cure: what can we do in the meantime?

## Three Wishes



Can we make our brains function more like they used to?

1. Assure that we are viewed as fully human and worth of respect, just as children are seen as human and worth of respect. Refrain from thinking human and living relationships can be replaced with machines. **THEY CANNOT!**
2. Minimize the financial and emotional stressors on or family and friends.

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# Must Dementia Care Break the Bank?

With wise development and use of technology, perhaps not.

Here are some things we find most promising.

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# “Furry” Technologist



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## “Soft Technology” may also be used. Methods like cognitive rehabilitation or counseling strategies.



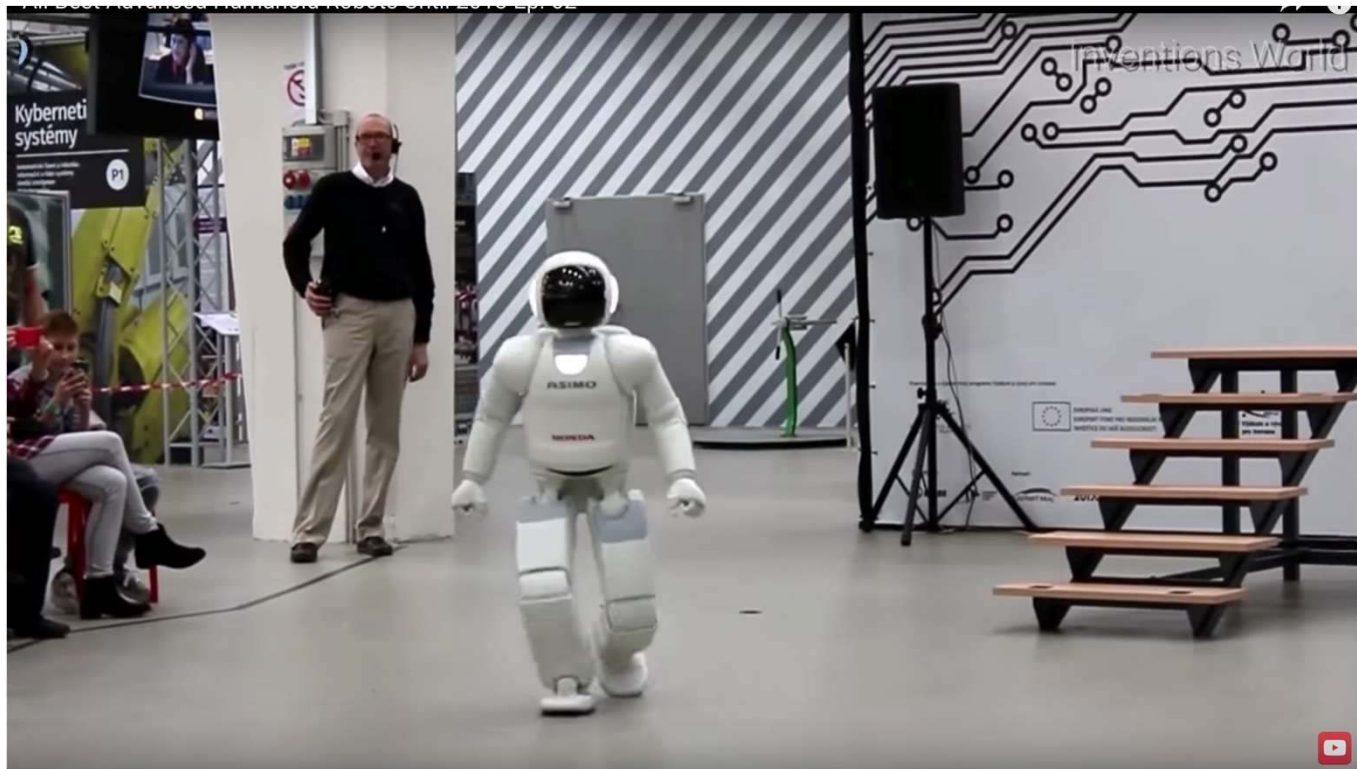
Dr. Joe Eades was a plastic and reconstructive surgeon who spent many months each year doing free surgeries on third world children with facial malformations. His wife, Virginia was a psychologist (a soft technician) who knew how to keep joy in Joe's life until he died.

Here is Joe an Alzheimer's patient only weeks before he died. His wife, a therapist, used joy preserving methods with him.

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# Smart Robots

<https://www.youtube.com/watch?v=6Ss8TUb1Zgg>



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# Smart Home Retrofits: The Internet of Things

Using Smart Home Retrofit Systems: What might it look like?

Sample list:

- Robots, existing smart home devices like Amazon Echo, Google Home, sensors in the floor, shut off valves, skin sensors to detect agitation, anxiety, that would trigger an intervention such as music, videos, live person to person interaction like through Zoom calls over TV (already there), visits.
- Lessen the need for so many in-home specialists
- Allow people to stay in their homes much longer as desired
- How to use technology to assist us in everyday life rather than replace or bypass us.



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# Soothing music, videos Personal interaction



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# Saving Family Savings

- Using Everybody wants to stay in his/her home – to “Age in place”.
- We need NEW SPECIALISTS – medical/technical dementia equipment “outfitters” to help tailor the elements of a smart home retrofit to the needs of the individual.
- Can technology delay a person living with dementia from having to be “PLACED” into an assisted living home?
- **It is our belief it can.**

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# Neuropsychological Assessment Profile

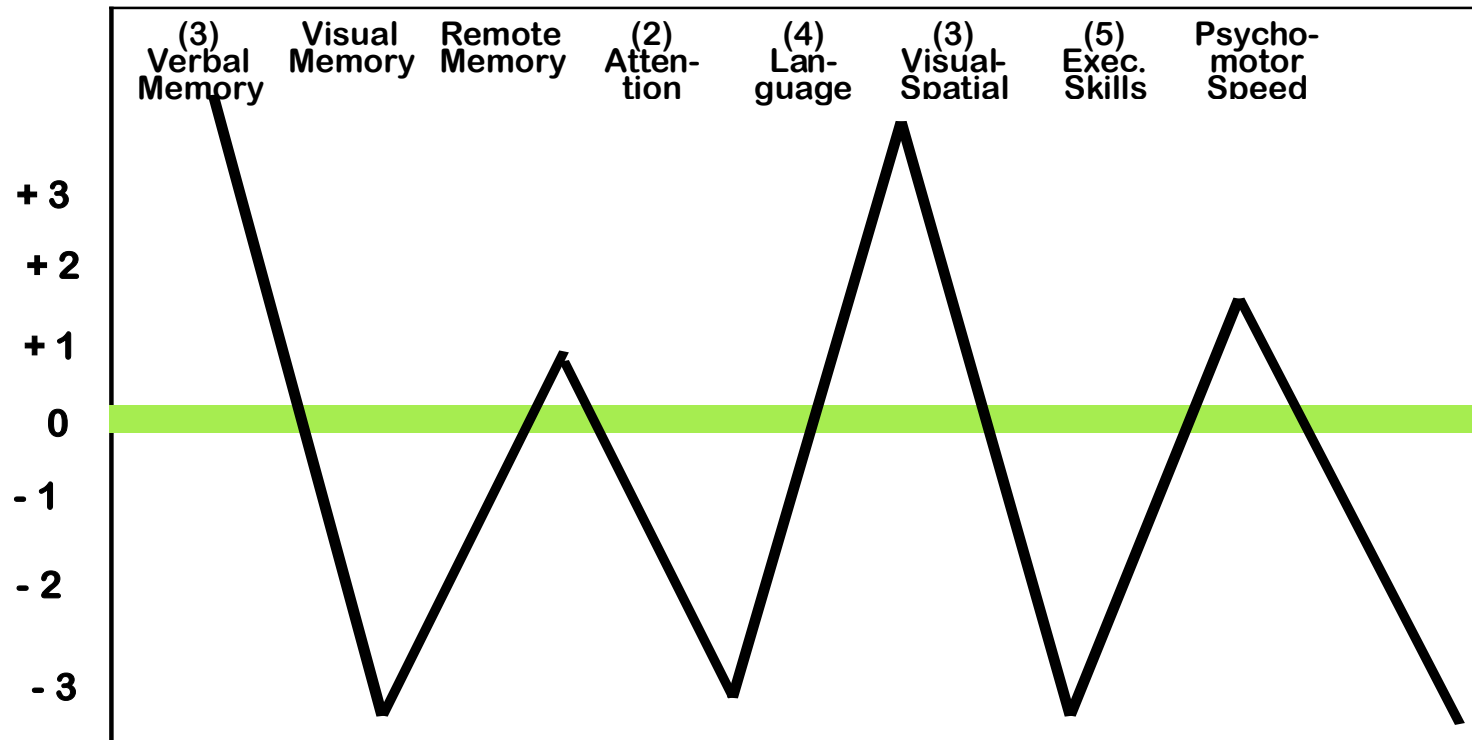
This is what a small section of a neuropsychological assessment profile looks like. Here eight function such as verbal memory and visual memory are scored. If a person's brain functions were perfectly normal, every score would be along the mean, the green line. But people aren't like that. They have strengths and weaknesses when compared to one another. Some go as high as 1, 2, or 3 standard deviations above or below the mean. Assessment batteries are administered among other reasons to identify an individual's strengths so they can be used to better cope.

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# Neuropsychological Assessment Profile

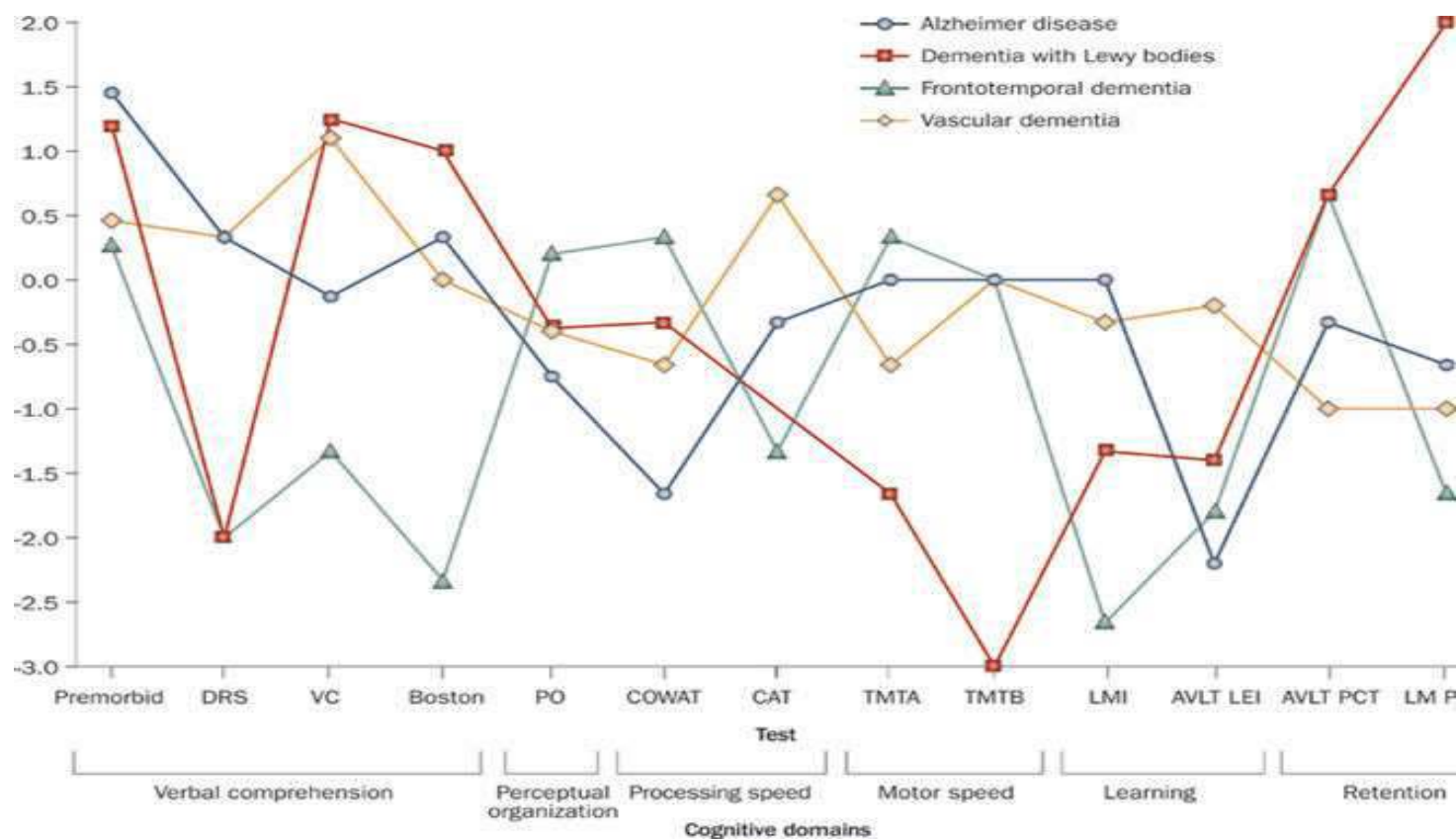
- Neuropsych Assessment Profile



Neuropsychological Assessment Battery

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# Neuropsychological Profiles



Four  
Neuropsych  
h profiles

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# Who and how can someone help?

- Developers, Programmers, Inventors, Scientist
- Ask the experts! Include people living with dementia to be part of the process. From development to release.
- Customize products. The job is to “tailor” the product to its recipient. Individualization concerns utilizing a persons strengths with dementia rather than remediating their weaknesses.
- Use some of the previous guides for your research, not all dementia’s are the same just like no two people’s journey with the same dementia are the same.

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# Possible alternatives to medications

Why don't we hear about noninvasive brain treatments for dementia?  
Scholar.google.com shows the promise in research articles:

DEMENTIA	37,600 listings
COMPUTER BASED RETRAINING	41,300 listings
ALZHEIMER'S	34,900 listings
PARKINSON'S	29,400 listings
PRIMARY PROGRESSIVE APHASIA	7,760 listings
FRONTOTEMPORAL DEMENTIA	2,490 listings

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THANK YOU

SEE THE PERSON

NOT THE DEMENTIA

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