

When it comes to keeping our brains young, we need to rise to new challenges

4 September 2017, by Alan J Gow



Credit: Lightspring

As we get older, our thinking skills often deteriorate: we get slower, more forgetful, less good at learning new things. Yet not everyone experiences these changes to the same degree. Some remain mentally sharp into their sixties, seventies and beyond; others experience declines which can make it harder for them to live independently.

Researchers see hope in this variation. It is a sign that decline might not be inevitable. Together with the fact that people are [tending to](#) live longer, it's no surprise that this is an area being pursued by specialists around the world.

Broadly speaking, the thinking skills that decline earlier [are the ones](#) that allow us to quickly process information or respond to things. This perhaps starts in our early twenties. [On the other hand](#), we retain and may even continue to develop mental skills associated with accrued knowledge through midlife and into old age. A good example would be our vocabulary.

Another thing that happens as we get older is our brains get smaller – known as [brain atrophy](#). One relatively recent report [indicated that](#) adults in their seventies experienced about 0.7% loss of grey matter per year, and about 1% of white matter. Both are important for our thinking skills – our "little grey cells" might be the familiar term regarding what underlies complex thinking skills like language and reasoning, for example, but the [white matter](#) plays a vital role in connecting different areas of the [brain](#).

Brain atrophy is associated with an increased risk of cognitive decline, albeit the research is [not](#) entirely [consistent](#). But crucially, this shrinkage varies from person to person. In the [same study](#) of seventy-somethings, for example, men were found to lose a bit more grey matter than women. Those who are less physically active have [also been shown](#) to have more shrinkage.

The fear factor

This much we know, but we're still developing our understanding of what might influence our thinking skills as we age. In the meantime, there remain challenges in providing the public with clear information about how best to preserve their [brain health](#).

Changes in thinking skills are [often reported](#) to be among people's greatest fears about ageing. On the one hand, it is a good thing to have a healthy concern about this issue, since it might encourage people to make sensible lifestyle choices to

maximise their health. Having said that, some of these fears may be the result of misinformation. News headlines [often wrongly use](#) phrases like dementia and Alzheimer's as shorthand for any research into changes in thinking skills, for example.

I was recently involved in a [UK-wide survey](#) into this area, questioning over 3,000 adults aged 40 and older. We're still analysing the results, but can share some top-line findings – indeed we took them "on tour" recently to the [Edinburgh Festival Fringe](#).

For example, the middle-aged adults in the survey were more pessimistic than over-70s about when mental decline might begin. The 40-year-olds expected it between ten to 15 years earlier than the older respondents – possibly a sign that the reality does not live up to the scaremongering when you get there.

Nine in ten respondents thought there were things we can do to protect or maintain thinking skills, though fewer than six in ten were confident about what these might be. This suggests room for improvement, though it is arguably a strong foundation on which to build further public health messages.

The hacks and the whack

So how best to preserve our brains? For some [lifestyle choices](#), the evidence is relatively consistent. Smoking, for example, is detrimental. [It thins](#) the outer layers of the brain, which are vital for functions including memory, reasoning and language. The good news for former smokers is that this thinning appears to "reverse" if you give up, though a full return to thick cortical layers is estimated to [take about 25 years](#).

Being physically active is also generally linked to better thinking skills and [brain health](#). For the inactive among us, even making initial changes in terms of [walking more](#) have been documented as worthwhile.

For some other things, the evidence is flimsier. Headlines that some game or puzzle is the key to remaining sharp won't be going away. But to put it

mildly, the whole "brain training" area is highly contested. You wouldn't expect anything less for an industry already worth well over \$1 billion (£774m) and [predicted to](#) top \$6 billion by 2020.

In fact, the [most recent review](#) of the literature has concluded the same as previous ones: people tend to become better at whatever game they are playing over time, and there are instances where this transfers to other skills. Broadly, however, the benefits appear limited.

Rather than playing the same repetitive game, perhaps a better possibility for boosting brain health is doing something novel and more challenging – learning a new thing, meeting people or engaging in new experiences. [Learning a new language](#) has been promoted, for example, while researchers are also finding some empirical support for the benefits of mastering [digital photography](#) or [tablet computers](#), or [volunteering](#). While these activities are quite diverse, the key ingredient is the new learning – and that can continue to increase as your expertise grows.

The bottom line is that brain ageing remains a developing research area with much still unknown. It is certainly [worth getting](#) a bit more active and giving yourself a bit of a challenge, but there is also much to be said for choosing that new activity according to whatever makes us happy – be it learning Russian, how to tango or whatever.

Retaining our [thinking skills](#) is obviously important, but happiness and fulfilment is [linked with](#) its own health benefits. I can't promise that staying cheerful will allow you to retain the mind of a 20-year-old into your dotage, but it certainly looks worthwhile overall.

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