- Gadgets / Dementia

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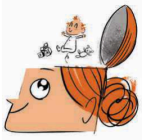

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Using a smartphone may reduce your dementia risk

New analysis shows that technology might provide cognitive benefits, despite bad press

Contrary to what you might have heard, technology could offer some surprising benefits in slowing cognitive decline as we age. At least that's according to a new study published in the journal *Nature Human Behaviour*.

"The terms 'brain rot' and 'brain drain' get thrown around a lot, and now we're seeing the term 'digital dementia'," Prof Michael Scullin, co-author of the new study, told *BBC Science Focus*.

"The notion that a digital device is inflicting cognitive harm with every use is very concerning and would suggest that adults who've been exposed to computers, the internet and smartphones during the first few decades of the digital revolution should be at increased risk for cognitive impairment."

To test if digital dementia is really as bad as it sounds, Scullin and his colleague, Prof Jared Benge, pulled



Tao proteins lumping together to cause neurofibrillary tangles in a nerve cell. These can severely disrupt brain function and are a hallmark of Alzheimer's disease

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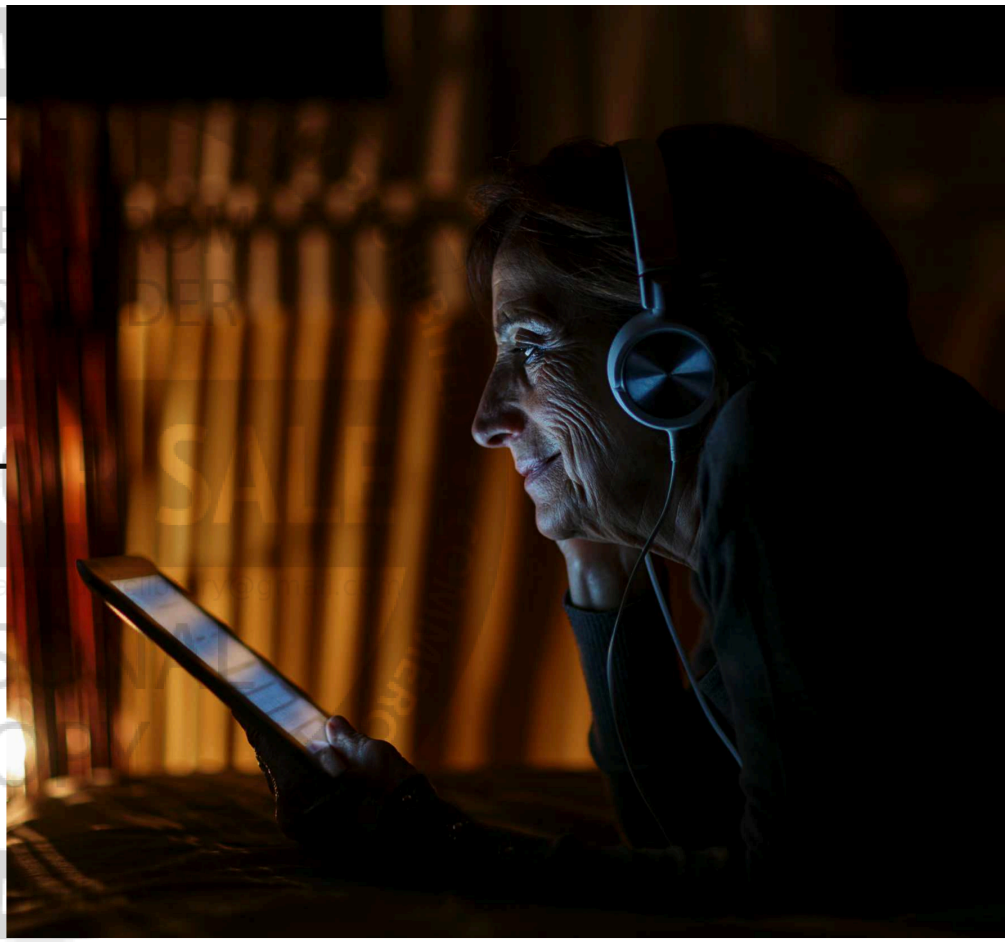

together data from 57 scientific studies encompassing around 410,000 middle-aged or older adults. Participants were mainly from North America and Europe, although some studies included people from all over the world.

The results were surprising, to say the least. Far from being harmful, technology use was actually linked to better cognitive outcomes. In fact, 51 of the 57 studies reviewed found a significant association between tech use and a *reduced* risk of cognitive impairment – and none reported an increased risk.

"That trend in and of itself doesn't mean very much," Benge told *BBC Science Focus*. "It could simply be that technology use was a marker for other factors linked to brain health – like higher education, better socioeconomic status or more mentally demanding jobs."

Yet the pattern held even after accounting for those variables – along with age, sex, general health and more. Clearly, there was substance to the findings.

"Researchers often recommend that older adults keep sharp by engaging in new, complex learning"

TECH AND YOUR BRAIN

While the study doesn't prove that using technology directly lowers the risk of cognitive decline, both Benge and Scullin have ideas about what might explain this negative association.

"The idea that using some digital technologies can predict positive cognitive trajectories is intriguing," Scullin said. "Researchers often recommend that older adults keep sharp by engaging in new, complex learning and various mentally stimulating behaviours. Learning to use computers, the internet and smartphones can provide such mental stimulation opportunities."

Benge added that he thinks this could be explained by "the three Cs": complexity (as outlined by Scullin), connection and compensatory behaviours.

"Being able to connect digitally with other individuals may be of benefit to older adults because we know that loneliness is a driver of cognitive impairment," Benge said, though he noted that there is still debate over whether digital connections are as effective as face-to-face interactions.

Compensatory behaviours refer to how technology can help maintain the independence of older adults. For example, GPS devices and digital calendars can offset age-related declines in spatial awareness and memory.

"It may be that these spontaneous uses of compensatory behaviours allow individuals to function longer and delay those day-to-day functional declines," said Benge.

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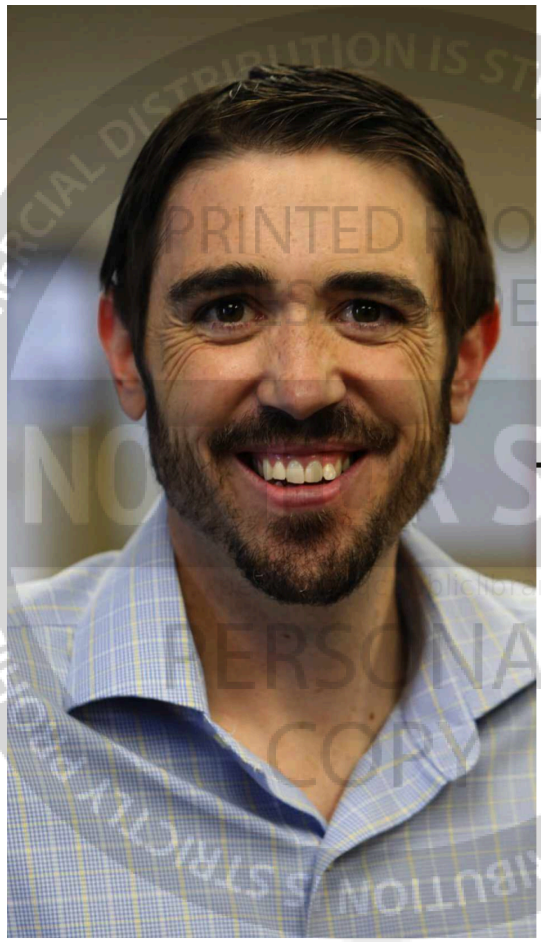


HOW TO USE TECHNOLOGY TO REDUCE YOUR RISK OF COGNITIVE DECLINE

The analysis highlights plenty of ways to support older people in gaining the benefits of technology.

"If an older adult has avoided adopting tablets, smartphones or other digital devices because they fear it will be too hard to learn how to use them, then now is a good time to suggest giving it another try," Scullin said.

The key here is patience: don't assume that because someone is older, technology is a lost cause. And the more challenging they find it, the more beneficial the learning experience may be.

Benge and Scullin have conducted behavioural clinical trials in which they successfully coached older adults with mild dementia and little to no experience with smartphones.

"The keys to successful learning are to have a quiet room, a very patient trainer and to start at the very beginning (on/off switch, volume control, making normal phone calls)," Scullin said.

You can also find ways to make technology use simpler, such as changing settings to reduce the number of options available on a device. Pinning important group chats to the top section of apps is also a good way to help older people stay connected.

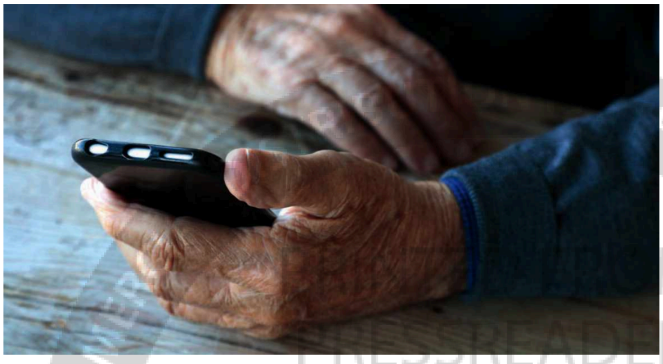
Taking photos and videos can also be a fun place to start. Or you could show someone how to access recordings of concerts from musicians they love on YouTube.

Scullin suggested familiarising older people with digital calendars as a good practice, since these can send automatic reminders for key dates, appointments, medication schedules and other upcoming events that might otherwise get forgotten and cause disruption.

Ultimately, the findings of this study offer a hopeful message that not all technology use is bad, despite what you might read in the news.

"There's no easy answer to whether technology is good or bad for the brain, but there's evidence that the generation who gave us the internet has figured out at least some ways in which this might be beneficial for their cognitive health," Benge concluded.

"Take a good look at your own digital life. Find the things that are stimulating, interesting and connecting – and do more of them."



DIGITAL PIONEERS AND NATIVES

It's worth noting that this analysis focuses only on people over the age of 50, for whom technology may present unique challenges and play a smaller role in daily life.

Scullin and Benge refer to members of this generation as 'digital pioneers' – those who grew up without technology and have had to slowly integrate it into their lives as adults.

"It remains to be seen whether binge watching shows on digital devices and passively scrolling through social media feeds – which are common behaviours among 'digital natives' [people that grew up with access to digital devices] – produce negative outcomes for cognitive ageing," Scullin said.

Several studies are underway to assess the effects on younger generations, but it's a waiting game – the impacts, of course, won't be clear until these children are much older. But we can hope they take to it like their grandparents.

ABOVE LEFT The fun and freedom that technology offers can be used to enhance the learning experience for older users

ABOVE Dr Michael K. Scullin, Baylor University, Texas