# Digital engagement linked to reduced cognitive decline in older adults, study finds



In an increasingly digital world, a notable study published in *Nature Human Behaviour* brings a refreshing perspective on technology's impact on mental health in older adults. Conducted by neuropsychologists Jared Benge from the University of Texas and Michael Scullin from Baylor University, the research challenges established fears surrounding the notion of “digital dementia.” Rather than harming cognitive function, the findings suggest that regular engagement with digital technologies may actually enhance mental acuity among older adults.

The study involved a comprehensive meta-analysis of 57 individual studies, encompassing data from over 411,000 adults aged 50 and above. Overall, the analysis indicated that those who actively used computers, smartphones, and the internet were 58% less likely to experience cognitive decline compared to their less-engaged peers. Notably, this protective effect surpasses other well-known health benefits, such as those associated with physical activity or effective blood pressure management. However, researchers remain cautious, acknowledging that the causal relationships remain to be definitively established, particularly as participants from low- and middle-income nations were underrepresented.

This analysis introduces a new concept termed "technological reserve," suggesting that active engagement with digital platforms fosters problem-solving skills and adaptability, which are crucial for cognitive resilience. According to the researchers, it is the quality of engagement—such as solving digital puzzles or maintaining social connections through video calls—that matters most, rather than merely the quantity of screen time. This offers a significant shift in focus for both society and healthcare providers, urging the emphasis on the cognitive benefits of technology rather than its perceived risks.

Complementing these findings, another study published in *JAMA Network Open* emphasises the health benefits of sustained weight loss during early middle age. Tracking over 23,000 individuals from Finland and the UK for up to 35 years, this study indicates that those who successfully lost and maintained just 6.5% of their body weight can expect significant long-term health advantages. This aligns with current global efforts addressing rising obesity rates—a growing concern exacerbated by sedentary lifestyles and unhealthy eating habits. Expert Timo Strandberg noted the importance of weight maintenance as not merely a weight-loss issue but a vital step towards preventing multiple health complications, including heart disease and certain cancers.

For those managing weight or considering lifestyle changes, the benefits extend past mere appearance. Engaging in weight management strategies, either through dietary changes or increased physical activity, is linked to a reduced risk of obesity-related diseases. Importantly, these findings occur against a backdrop where the prevalence of obesity continues to rise, placing an ever-growing segment of the population at risk for various chronic diseases.

In a different vein, a study from the Massachusetts Institute of Technology reveals critical insights into how high-fat diets impair cellular metabolism and increase the risk of metabolic diseases. Researchers found that a typical high-fat diet triggers biochemical disruptions associated with weight gain and insulin resistance. However, notable progress is found in introducing antioxidants alongside such diets, which appear to mitigate the detrimental effects. The results signify not only a potential pathway for public health directives but also the growing understanding of how our dietary choices impact metabolic health.

Lastly, a pressing global study published in *AJPM Focus* addresses a critical shortage of omega-3 fatty acids, essential nutrients tied directly to brain, heart, and overall health. Timothy Ciesielski highlighted that about 85% of the global population currently does not consume sufficient omega-3s, largely due to environmental challenges facing traditional sources such as fish. This situation is further aggravated by the modern industrial diet favouring omega-6 fatty acids, which can contribute to chronic inflammation. The need for urgent action to ensure access to omega-3s is not just a health issue but an environmental one, underscoring the interconnectedness of our dietary sources and overall wellbeing.

Together, these studies illuminate the complex interplay between lifestyle choices, technological engagement, and health outcomes, carving pathways that could lead to healthier populations and more supportive environments, particularly for older adults.

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## Bibliography

1. <https://medicaldialogues.in/amp/channels/medical-news-today/medical-bulletin-31may2025-149218> - Please view link - unable to able to access data
2. <https://www.kiplinger.com/retirement/could-technology-use-lower-risk-of-dementia> - A recent study published in Nature Human Behavior challenges the notion of 'digital dementia' and provides evidence that technology use may actually reduce the risk of cognitive decline in older adults. Analyzing data from over 130 studies involving 411,430 individuals aged 50 and up, researchers found that those who engaged with technology—such as using computers, smartphones, email, social media, or digital games—had a 58% lower risk of cognitive impairment and a 26% lower risk of cognitive decline. Importantly, the findings held even after controlling for variables like education and income. The key factor was active digital engagement, not the amount of screen time. Activities such as solving digital puzzles, sending emails, or video chatting with loved ones contribute to mental stimulation. The researchers introduced a new model called 'technological reserve,' suggesting that digital interaction fosters cognitive resilience through problem-solving and adaptability. As society grows more digital, the study argues that the focus should shift from fearing technology's downsides to harnessing its cognitive benefits for aging populations.
3. <https://time.com/6183744/weight-loss-bariatric-surgery-cancer/> - A study published in JAMA links obesity to an increased risk of cancer and highlights the benefits of bariatric surgery in significantly reducing this risk. The trial, involving over 30,000 obese patients, compared those who underwent weight loss surgery with those who received standard care. Ten years post-surgery, findings revealed a 32% lower risk of developing 15 common cancers and a 48% decreased risk of cancer mortality for surgical patients. The study emphasizes the need for primary care physicians to discuss obesity's health consequences with patients, possibly considering weight loss surgery. While surgery is highly effective, it's not feasible for everyone due to its invasive nature, costs, and risks. Newly approved weight-loss medications show promise, potentially offering non-surgical alternatives to achieving significant weight loss and reducing cancer risks. Researchers advocate for combining surgical options and drug treatments to tackle obesity and related health issues.
4. <https://news.utexas.edu/2025/04/14/technology-use-linked-to-better-brain-health-in-older-adults/> - Technology use among older adults appears to benefit cognitive health rather than harm it, according to a large-scale meta-analysis published in Nature Human Behaviour. The study, which examined data from more than 411,000 adults aged 50 and older, reveals that engaging with digital devices may actually help protect against cognitive decline and dementia. The analysis of 57 studies showed technology users had lower odds of cognitive impairment and reduced rates of decline over time. These protective relationships were observed across computer, smartphone, and internet use.
5. <https://pubmed.ncbi.nlm.nih.gov/40229575/> - The first generation who engaged with digital technologies has reached the age where risks of dementia emerge. Has technological exposure helped or harmed cognition in digital pioneers? The digital dementia hypothesis predicts that a lifetime of technology exposure worsens cognitive abilities. An alternative hypothesis is that such exposures lead to technological reserve, wherein digital technologies promote behaviours that preserve cognition. We tested these hypotheses in a meta-analysis and systematic review of studies published in Medline, PsycInfo, CINAHL, Science Direct, Scopus, Cochrane Library, ProQuest and Web of Science. Studies were included if they were observational or cohort studies focused on general digital technology use in older adults (over age 50) and included either a cognitive or dementia diagnosis outcome. We identified 136 papers that met inclusion criteria, of which 57 were compatible with odds ratio or hazard ratio meta-analysis. These studies included 411,430 adults (baseline age M = 68.7 years; 53.5% female) from cross-sectional and longitudinal observational studies (range: 1-18 years, M = 6.2 years). Use of digital technologies was associated with reduced risk of cognitive impairment (OR = 0.42, 95% CI 0.35-0.52) and reduced time-dependent rates of cognitive decline (HR = 0.74, 95% CI 0.66-0.84). Effects remained significant when accounting for demographic, socioeconomic, health and cognitive reserve proxies. All studies were evaluated for quality on the basis of a standardized checklist; the primary outcomes replicated when limiting analyses to the highest-quality studies. Additional work is needed to test bidirectional causal interpretations, understand mechanisms that underpin technological reserve, and identify how types and timings of technology exposures influence cognitive health.
6. <https://www.sciencemediacentre.org/expert-reaction-to-meta-analysis-on-digital-technology-use-and-cognitive-aging/> - A meta-analysis published in Nature Human Behaviour looks at technology use and cognitive aging. Dr Davide Bruno, Reader in Psychology, Liverpool John Moores University, said: 'A lot of variables are controlled for in this study, and the results are promising, but a lot of our cognitive resilience may well be genetically determined, which could also lead to greater ease with using technology. The authors do an excellent job of pointing out the limits of their study and acknowledging that there is more work to do. For example, what type of digital activities are better for our brain? This is a well-done study tackling a timely issue. The authors are careful in their conclusions.' Dr Leah Mursaleen, Head of Clinical Research at Alzheimer’s Research UK says: 'This large-scale analysis reviewed over 50 published studies from around the world to try to unravel the link between use of digital tech and cognitive ability. This study challenges previous research that has suggested digital technology could reduce cognitive function as we age and instead suggests that use of technology may be linked to lower rates of cognitive decline in older adults.'
7. <https://www.drugs.com/news/digital-technology-linked-lower-rates-cognitive-decline-adults-older-than-50-124584.html> - Widespread use of digital technology seems to be associated with lower rates of cognitive decline in adults older than 50 years, according to a study published online April 14 in Nature Human Behaviour. Jared F. Benge, Ph.D., from the University of Texas at Austin, and Michael K. Scullin, Ph.D., from Baylor University in Waco, Texas, conducted a systematic review and meta-analysis to examine whether technological exposure has helped or harmed cognition in digital pioneers. Fifty-seven observational or cohort studies focusing on general digital technology use in older adults (older than 50 years) were included in the meta-analysis; 411,430 adults were included from cross-sectional and longitudinal observational studies. The researchers found an association for use of digital technologies with a reduced risk for cognitive impairment (odds ratio, 0.42) as well as reduced time-dependent rates of cognitive decline (hazard ratio, 0.74). When accounting for demographic, socioeconomic, health, and cognitive reserve proxies, the effects remained significant. 'Technology engagement was associated with reduced odds of cognitive decline in middle-aged and older adults,' the authors write. 'There was no credible evidence from the longitudinal studies, or the meta-analysis as a whole, for widespread digital 'brain drain' or 'digital dementia' as a result of general, natural uses of digital technology.'