Healthy lifestyles for dementia prevention
An increasingly urgent public health priority
Séverine Sabia, 1 Archana Singh-Manoux 2

Ageing is accompanied by a decline in several measures of cognitive function, such as memory, reasoning, and psychomotor speed. Differences in the rate of change in cognitive function can be substantial between individuals, highlighting the importance of identifying modifiable factors that are associated with favourable cognitive ageing trajectories. An impaired cognitive status can affect the lives of individuals and their ability to live independently but this issue is also a hallmark of Alzheimer’s disease and related dementias.

Lifestyle factors have attracted much attention as potential targets for prevention, including in a Lancet commission for dementia prevention, which lists 12 modifiable risk factors, of which three are related to lifestyle: alcohol consumption (>21 units/week), smoking, and physical inactivity. The linked study by Jia and colleagues1 investigated the association between a healthy lifestyle and memory decline over 10 years among 29 000 participants (49% were women, mean age was 72.2 years at baseline) in the China Cognition and Ageing Study. The authors calculated a healthy lifestyle score combining six factors: healthy diet, regular physical exercise, active social contact, active cognitive activity, not smoking, and never drinking alcohol. The resulting score, ranging from zero to six healthy factors, was categorised as favourable (four to six factors), average (two to three), or unfavourable (zero to one).

These authors examined the association between healthy behaviours and decline in memory, measured by the Auditory Verbal Learning Test (AVLT), a composite measure including tests of immediate, short delay and long delay recall, and long delay recognition. They found that each individual healthy behaviour was associated with a slower decline in memory over 10 years. The healthy lifestyle score was associated with a slower memory decline in a dose-response manner. Compared with the group that had unfavourable lifestyles, memory decline in the favourable lifestyle group was 0.28 points slower over 10 years on a standardised score (z score) of the AVLT, and memory decline in the average lifestyle group was 0.16 points slower.

These results do not help to determine which among the six health behaviours included in the score (or specific combination) is the best target for dementia prevention, or when in the life course to focus prevention efforts. Further insight is also needed to determine whether the differences in memory decline observed in this study are clinically meaningful.

One noteworthy finding was that the association between healthy lifestyle score and 10 year memory decline was evident in people who carried the APOE ε4 allele and in those who did not carry this risk factor. APOE ε4 is the strongest known risk factor for Alzheimer’s disease and related dementias, and within the context of ongoing and future targeted prevention trials, this outcome is particularly important. These results support the notion that lifestyle change might counteract the deleterious effect of APOE ε4 on cognitive decline and dementia.

Prevention is important, given the absence of effective treatments for Alzheimer’s disease and related dementias. Definitions of a healthy lifestyle vary, however. Jia and colleagues used six measures to define a healthy lifestyle, but another recent study, by Dhana and colleagues, used five, omitting social contact. 1 Jia and colleagues define never drinking as healthy, but Dhana and colleagues defined drinking 1-15 units per week as healthy. As evidence is emerging on the association of sleep duration with cognitive outcomes, whether this variable should also be included is unclear. Additionally, the American Heart Association developed an ideal cardiovascular health score, combining seven biological and lifestyle factors, that is also associated with lower risk of dementia.

A further area of concern is the age at which healthy behaviours need to be adopted. Future research on prevention should evaluate a wider range of possible risk factors and identify specific exposures associated with the greatest risk while also considering the risk threshold and age at exposure for each one.

Risks of cognitive decline and dementia are likely to be shaped by multiple factors. The multifactorial risk paradigm introduced by the Framingham study has led to a substantial reduction in cardiovascular disease. A similar approach should be taken with dementia prevention, identifying not only the factors that matter most but also the threshold at which they matter, and the age when intervention is likely to be most effective, as the WHO underlined in its recent report on brain health. This public health priority is becoming increasingly urgent.


