

## High quality diet at midlife reduces risk of cognitive impairment at older age

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With an average life span of approximately 85 years, Singaporeans lead the world in life expectancy. With the ageing of the population, the prevalence rates of cognitive impairment and dementia are expected to increase accordingly. To prevent the development of cognitive impairment, it is crucial to identify and take measures to modify potential risk factors before its onset.

A number of epidemiologic studies have investigated the impact of individual food or nutrient items on cognitive health. However, studying the impact of individual food items does not account for the synergistic effects of diverse foods consumed together. Hence, scientists have turned increasing attention to studying the overall dietary patterns as they are able to more comprehensively characterise dietary exposures of related foods and nutrients often consumed together, and account for the possible interactions among them.

Five predetermined dietary patterns originating in Western populations, i.e. the alternative Mediterranean diet (aMED, an international adaptation of the eponymous diet), the Alternate Healthy Eating Index 2010 (AHEI-2010), the Dietary Approaches to Stop Hypertension (DASH) diet, the plant-based diet index (PDI) and the healthful plant-based diet index (hPDI), are similar in being rich in plant-based foods, including whole grains, vegetables and fruits, nuts and legumes, and low in red meat and sugar-sweetened beverages. These dietary patterns have been shown to reduce the risk of cancer,

diabetes and cardiovascular diseases, and are considered high-quality dietary patterns.

In this study nested in the Singapore Chinese Health Study, 16,948 participants, aged 53 years on average at recruitment from 1993 to 1998, were scored on how similar their diet patterns were to the five high-quality diets in terms of intake of specific foods and nutrients included in these patterns. Their cognitive function was evaluated during a follow-up interview about 20 years later, from 2014–2016, where they were, on average, 73 years old. Cognitive impairment was present in 2,443 participants (14.4 per cent). The findings recently reported in the American Journal of Clinical Nutrition showed that adherence to these five high-quality dietary patterns in midlife was associated with a lower risk of cognitive impairment in late life.

In all five high-quality dietary patterns, participants in the top 25 per cent of scores for similarity to these dietary patterns had a significant reduction of 18 per cent to 33 per cent in risk of cognitive impairment compared to those who were in the lowest 25 per cent.

“Previous studies have shown mixed results when it comes to diet and the risk of cognitive impairment, with few studies conducted in Asian populations,” said Prof Koh Woon Puay, Principal Investigator of the Singapore Chinese Health Study, and Professor at Duke-NUS

Medical School and the National University of Singapore’s Saw Swee Hock School of Public Health. “Our study suggests that maintaining a healthy dietary pattern is important for the prevention of onset and delay of cognitive impairment. Such a pattern is not about the restriction of a single food item but the composition of an overall pattern that recommends cutting back on red meats, especially if they are processed, and including lots of plant-based foods (vegetables, fruit, nuts, beans, whole grains) and fish.”

Dr Annie Ling, Group Director, Policy, Research and Surveillance Division, Health Promotion Board, Singapore, commented, “Findings from this study looking at dietary patterns and health are aligned with and support HPB’s approach in encouraging Singaporeans to eat healthily and improve their diet quality. Food intake is a multi-dimensional exposure, where a high consumption of some foods is typically associated with lower intake of other foods. This makes inferences about individual foods particularly challenging. In fact, much of the confusion on the science of healthy eating arises from studies looking at individual foods or nutrients.”

She added, “We must, therefore, look at our diet as a whole. HPB’s recommendation is to maintain a balanced and varied diet and to eat across all food groups. This can be achieved through a variety of eating patterns. A simple guide is to fill half our plate with fruit and vegetables, a quarter with whole grains such as brown rice and wholemeal bread, and the last quarter with protein foods such as bean products, seafood and meat.”