

## How to Prevent Dementia?

**Dr Feng Lei, Research Assistant Professor, Department of Psychological Medicine, NUS**  
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**There is no doubt that culture and personality cultivation have a great influence on mental health and longevity. However, in contrast to an extensive body of literature in biomedicine, few existing studies analyze the impact of sociocultural factors and humanities.**

With the rapid aging of the population, the number of local elderly people suffering from dementia (the most common type is Alzheimer's disease) is expected to grow rapidly in the next 10 to 20 years. How to prevent dementia, how to maintain good cognitive function as well as mental health, and how to live long while keeping healthy are questions that deeply concern us. The current research progress in the treatment of dementia is unsatisfactory. Although pharmaceutical companies have invested huge money and conducted hundreds of clinical trials, the drug that can cure dementia has not been found so far. Therefore, people start to pay more attention to the early prevention of dementia by changing lifestyle and behaviors.

The idea of prevention disease has a long history in traditional Chinese medicine, which emphasizes "treat before getting illness". It is said by China's earliest medical book "Huang Di Nei Jing" (The Yellow Emperor's Internal Canon of Medicine), just like digging wells after being thirsty and governing the country after it is in trouble, it is always late to take medicine after the body is ill. Also, one famous legend record in the Records of the Grand Historian wrote by Sima Qian tells that once Bian Que, a famous doctor in Warring States Period, told the lord of Qi that he had a slight disease, but the lord brushed this aside at that time he felt no symptoms. Bian Que visited the lord many times thereafter, telling him each time how this sickness was becoming progressively worse. The lord didn't believe Bian Que. Soon after the last time Bian Que visited the lord, he was incurable and died.

The modern medical research coincides with the spirit of traditional Chinese medicine. The most classic example is the legendary research experience of Yoyo Tu, who discovered artemisinin. Based on my research on cognitive health of older people over the past decade, I argue that for dementia, prevention is of paramount importance. Once in the stage of severe cognitive impairment, the effect of many interventions will be greatly reduced. Hence, we must start to intervene as early as possible so that we are able to reduce the risk of dementia and maintain good cognitive health.

Local studies provide some good clues for the prevention of dementia. Through community-based local studies, we discovered a series of risk and protective factors. Important risk factors include heart disease, diabetes, high homocysteine, and depressive symptoms. The protective factors include regular physical exercise, regular mental activities, and active participation in social activities, having partners, and regular drinking of tea.

If individuals can change their lifestyle and behavior accordingly, then they are able to reduce the risk and even prevent dementia. To sum up, there are six simple rules that people are suggested to follow. First, maintain heart health and actively treat diabetes. Second, keep optimistic, stay in good mood, and treat depression early. Third, do exercise regularly, such as

brisk walking. Fourth, do mental exercise regularly, such as reading. Fifth, actively participate in social activities, such as singing in a choir; sixth, consume more vegetables (folate helps to reduce homocysteine); drink a cup of tea daily if you like.

It is noted that the above suggestions are based on the preliminary findings of local studies. We also need to do more research work and design effective interventions based on an in-depth understanding of the relevant factors of cognitive function in older people in Singapore. With good evidence from clinic trials, effective interventions can then be implemented in the community to improve cognitive health and allow more senior citizens to enjoy healthy, active and active life in their later years.

One of my ongoing research is to examine the relationship between Asian eating habits and cognitive function. We recruited more than 1,000 seniors from various communities in Singapore. We are conducting follow-up assessments on this group of elderly people and aim to study what kind of dietary factors contribute to the risk of incident dementia. We further plan to design dietary interventions tailored to the Asian culture and context (such as encourage elderly people without tea drinking habits to drink Chinese tea every day) to promote cognitive health. This is also consistent with the theory and tradition of traditional Chinese medicine diet.

Another study that I am leading is to evaluate the impacts of choral singing on brain function. The study began recruiting participants in 2015 and the intervention for the first group will be completed by the end of 2017. This study included brain MRI and biomarkers as outcome measures. It is the only randomized controlled clinical trial in the world that rigorously evaluates the efficacy and mechanisms of choral singing intervention in dementia prevention.

The established cultural tradition has a great influence on the content and form of the behavioral intervention. For example, in the choral singing project, the choir teacher carefully selected many songs suitable for the participants' cultural backgrounds, such as "Sweet as Honey" and "The Moon Represents My Heart." In future, I also hope to evaluate the impact of cultural interventions, such as learning calligraphy and Chinese painting, on cognitive health. These interventions are good cognitive training, rich in cultural heritage, containing Chinese cultural traditions of Confucianism, Taoism, and Zen, as well as mindfulness, and should be of great benefit to brain health. These intervention studies are very meaningful because only rigorous scientific research can lead to true and credible conclusions. A famous example is the Ginkgo biloba extract. Many people thought that Ginkgo biloba could prevent dementia in the early years. But the United States spent a lot of funds and manpower to conduct a large intervention trial and found that intake of Ginkgo biloba extract has no effect in reducing the development of dementia.

More studies are needed to provide insight into how to prevent dementia and help more seniors to enjoy a healthy life with good quality. Before more evidence become available, the above six suggestions can be referred to. Confucius said: "The wise are happy and the benevolent live long." There is no doubt that culture and personality cultivation have a great influence on mental health and longevity. However, in contrast to an extensive body of literature in biomedicine, few existing studies examined the impact of sociocultural factors and humanities. Scholars in social sciences and humanities and related fields in Singapore, the multicultural center in Asia, can accomplish much in this regard.

(The author is an assistant professor at the Department of Psychological Medicine, Yong Loo Lin School of Medicine, National University of Singapore)