



## PRESS RELEASE

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### Good mental health and positive life outlook play an important role in longevity: SG90 Study

**Singapore, 21 February 2023** – A study by Yong Loo Lin School of Medicine (NUS Medicine) and Faculty of Arts and Social Sciences, National University of Singapore researchers of 1,000 Chinese Singaporeans between 85 years old and 99 years old has found that good mental health, a positive outlook and life satisfaction, despite poor physical health, can have beneficial effect in enhancing longevity beyond 85 years old.

The SG90 study is part of the Singapore Chinese Health Study, one of the largest Asian-based population cohort studies done by NUS Medicine. In Singapore, and worldwide, older adults who live past 85 years old, often referred to as the oldest old, are increasing in numbers. While living beyond 85 may be a measure of successful ageing in terms of years of life, what are the factors that may account for longevity among the oldest-old?

In this study, the cohort participants were examined for 12 objective and subjective markers that are commonly used to define successful ageing in gerontology. The six objective markers included the absence of chronic diseases, independence in function and activities of daily living, intact cognition, and engagement in social and productive activities. These are considered objective markers as they are measured using established questionnaire instruments. The six subjective markers, on the other hand, are self-perceived counterparts of the aforementioned objective markers, and included self-rated health, feelings of well-being and satisfaction about one's subjective memory, cognition and ability to cope with activities of daily living, as well as happiness with relationships and life.

#### Four group profiles identified

Four distinct groups emerged from the data based on the combination of objective and subjective markers. The two contrasting groups were the frail and dejected group, which scored low in both objective and subjective markers, and the fit and positive group, which scored high in both objective and subjective markers. A third group scored a close second to the fit and positive group in objective markers but scored much lower in subjective markers, and this group was referred to as the fairly fit and neutral. Interestingly, there was a last group that scored as low as the frail and dejected group in objective markers but scored almost as high as the fit and positive group in the subjective markers and also in social engagement. This last group was referred to as the frail but resilient group.

Other than the frail and dejected group, the other three groups were more likely to perceive themselves to have adequate financial resources, and to be engaged in weekly exercise. The *fairly fit and neutral* group and the *fit and positive* group were also more likely to be staying alone and reported to have stronger social networks, compared to the *frail and dejected*, and *frail and resilient* groups.

## **Golden years and silver linings for some, bleakness and depression for others**

The researchers followed these four groups over an average of three years and tracked their survival. Predictably, the fit and positive groups scored the highest probability of survival while the frail and dejected group had the lowest. The fairly fit and neutral group had a probability of survival between these two groups.

Remarkably, the frail but resilient group, had a similar probability of survival as the fairly fit and neutral group, despite these participants registering much lower scores in objective markers. Compared to the frail and dejected group, the frail but resilient group recorded a 37% reduction in mortality risk, suggesting that their much higher scores in subjective markers and social engagement (which implied better emotional, psychological and social health), were able to improve their survival despite being equally frail.

This study confirms that age-related perceptions, feelings, and well-being are shaped not only by objective measures but also by psychological processes. For instance, through social comparison, an elderly who is dependent in his activities of daily living may still report /have a high level of satisfaction upon noticing that a friend's functional status is poorer. Additionally, such an elderly may choose to compensate for health and functional deficits and achieve daily activities with assistive devices or the help of others and, in turn, still be satisfied with life. Therefore, such an elderly may still have positive subjective appraisals despite failing in objective criteria.

“Positive affect and high satisfaction with life have been linked to diminished inflammation and better immunologic function, and are thus related to higher survival. Our studies provide evidence that resilience and better psychological adaptation to declining health may offset the deleterious impact of objective adversities in ageing,” said Professor Koh Woon Puay, Principal Investigator of the Singapore Chinese Health Study and Senior Scientist in the Healthy Longevity Translational Research Programme at NUS Medicine.

Associate Professor Feng Qiushi, from the Faculty of Arts and Social Sciences, National University of Singapore, says, “This study shows how important it is to encourage the seniors around us to aim to cultivate a positive attitude and outlook in life, and be more adaptable even if you are not objectively healthy. Families can do their part to help build a spirit of resilience in seniors, so that they can live longer and enriching lives for themselves.”

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The National University of Singapore (NUS) is Singapore's flagship university, which offers a global approach to education, research and entrepreneurship, with a focus on Asian perspectives and expertise. We have 16 colleges, faculties and schools across three campuses in Singapore, with more than 40,000 students from 100 countries enriching our

vibrant and diverse campus community. We have also established our NUS Overseas Colleges programme in more than 15 cities around the world.

Our multidisciplinary and real-world approach to education, research and entrepreneurship enables us to work closely with industry, governments and academia to address crucial and complex issues relevant to Asia and the world. Researchers in our faculties, research centres of excellence, corporate labs and more than 30 university-level research institutes focus on themes that include energy; environmental and urban sustainability; treatment and prevention of diseases; active ageing; advanced materials; risk management and resilience of financial systems; Asian studies; and Smart Nation capabilities such as artificial intelligence, data science, operations research and cybersecurity.

For more information on NUS, please visit [www.nus.edu.sg](http://www.nus.edu.sg).

### **About the NUS Yong Loo Lin School of Medicine (NUS Medicine)**

The NUS Yong Loo Lin School of Medicine is Singapore's first and largest medical school. Our enduring mission centres on nurturing highly competent, values-driven and inspired healthcare professionals to transform the practice of medicine and improve health around the world.

Through a dynamic and future-oriented five-year curriculum that is inter-disciplinary and inter-professional in nature, our students undergo a holistic learning experience that exposes them to multiple facets of healthcare and prepares them to become visionary leaders and compassionate doctors and nurses of tomorrow. Since the School's founding in 1905, more than 12,000 graduates have passed through our doors.

In our pursuit of health for all, our strategic research programmes focus on innovative, cutting-edge biomedical research with collaborators around the world to deliver high impact solutions to benefit human lives.

The School is the oldest institution of higher learning in the National University of Singapore and a founding institutional member of the National University Health System. It is one of the leading medical schools in Asia and ranks among the best in the world (Times Higher Education World University Rankings 2023 by subject and the Quacquarelli Symonds (QS) World University Rankings by subject 2022).

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