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US-Singapore partnership announces $60 M programme to extend health spans

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To develop and test new interventions to improve health outcomes in older people after stress events

Wellcome Leap (in the US) and Temasek Trust (in Singapore) have partnered to launch a$60 million Dynamic Resilience programme aimed at increasing health spans. Average human life expectancy has doubled from 35 to 70 years over the past century, but health spans have not correspondingly improved.

Data shows that worldwide, more than 1 in 2 adults aged over 60 have multimorbidity, or multiple co-existing health issues. This and decreasing dynamic resilience - the ability to respond to and cope with stress - contribute to clinical frailty which makes us vulnerable to sudden and serious health deterioration in the event of acute illness or injury.

Multimorbidity poses an urgent challenge for health servicesand this is set to increase in the coming decades. Frailty affects up to half of adults over 65 globally and people who have experienced traumatic injury, cancer treatment, or menopause. The Dynamic Resilience programme aims to reduce frailty progression by 25% which could prevent 71,000 hospitalisations and 8,000 deaths annually from falls in the US alone and benefit 87 million older adults globally.

The three-year Dynamic Resilience programme has three goals: (1) to identify new biomarker signatures of resilience that predict health outcomes after a stress event using collections of biological specimens and associated health data that have been collected from individuals over time; (2) to understand what causes frailty and resilience, using lab tests to assess the effects of stress on biological systems at different levels of complexity, including cells, tissues, and whole organisms; and (3) to test ways to improve biological resilience in at-risk people prior to predictable stress events like surgery, targeting reduction to further frailty or death by at least 25% in intervention versus control groups.