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Singapore researchers develop better and more accurate biological ageing clock

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LinAge2 performed better than chronological age and biological ageing clocks in indicating likely mortality within10 and 20 years

Researchers from the Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine) have developed an improved biological ageing clock, LinAge2, that offers doctors a practical and more accurate way to assess how quickly a person is ageing, and what can be done to slow it down.

The new algorithm-powered tool builds on earlier clinical ageing clocks known as PCAge and LinAge. These older models, derived from blood and urine tests and health questionnaires, demonstrated strong predictive capability for long-term mortality and functional decline.

PCAge, in particular, outperformed standard cardiovascular risk scores and could forecast ageing trajectories well before the onset of disease. This approach was adapted and integrated for clinical use, which paved the way for LinAge2's enhancements in accuracy, interpretability, and ease of use.

To advance clinical integration, the researchers are working with Singapore-based healthtech provider NOVI Health to incorporate LinAge2 as part of its healthy longevity programme.

The researchers aim to validate the model across more diverse populations and explore its application in monitoring responses to healthspan interventions, such as lifestyle modifications, dietary adjustments, and/or medications. This work will further the development of evidence-based healthy longevity treatments in clinical practice.