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Singapore's longitudinal cohort study uncovers new insights into women's health

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Offering powerful clues to future risk of diabetes, frailty, and physical decline after menopause



New research from the Integrated Women's Health Programme (IWHP) at the National University Hospital (NUH) and the Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine), has uncovered new insights into how muscle strength and visceral fat, and their association with menopause, can potentially lead to downstream health impacts among women in Singapore, and how physical performance assessments and a simple blood test could help predict and prevent chronic conditions before they arise.

The first study, published in Diabetes, Obesity & Metabolism in October 2024, found that women with both weak muscle strength and high levels of visceral fat had the highest risk of developing prediabetes or type 2 diabetes. Their risk was 2.63 times higher than that of women who had normal muscle strength and lower fat levels.

In another recent study, published in Menopause in March 2025, the team found that a simple hospital blood test could help predict who is more likely to lose muscle mass and physical strength with age. Women with a lower ratio of creatinine to cystatin C (CCR), a marker derived from blood tests to check on skeletal muscle mass and kidney functions, had less muscle and walked more slowly later in life.

"Beyond BMI and reduction of visceral obesity, exercises to improve physical performance and muscle strength have emerged as key lifestyle strategies to extend healthy lifespans for midlife Singaporean women. Targeted implementation programmes consisting of muscle strength exercises is beneficial for midlife women", said Prof Yong Eu Leong, Head and Emeritus Consultant, Division of Benign Gynaecology, Department of Obstetrics and Gynaecology, NUH, and the lead of IWHP.