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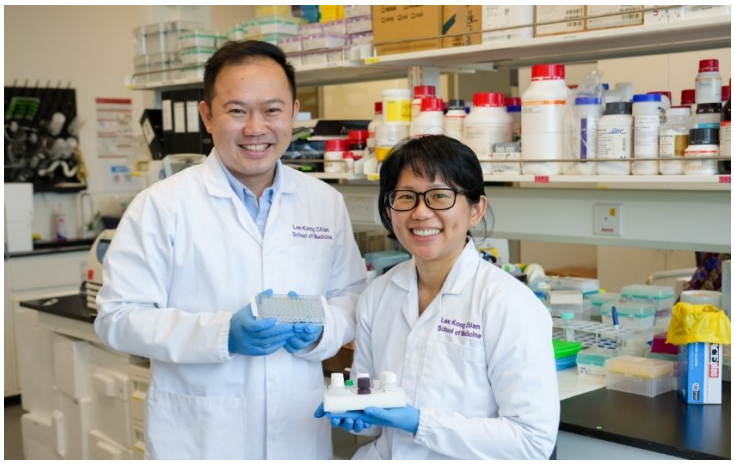
Scientists in Singapore predict severe dengue with urine test

April 13, 2026 | News

Test can help doctors assess if dengue patients require further care in hospital



Scientists led by Nanyang Technological University, Singapore have discovered that specific proteins in urine can accurately predict the likelihood of dengue patients developing severe dengue.

The findings could help doctors assess if a dengue patient can be sent home for recovery or if they require hospitalisation for further treatment, prioritising care for those who need it most as well as easing the burden on healthcare resources.

According to the researchers, this is the first-of-its-kind test to predict the risk of severe dengue.

Increased levels of neutrophil gelatinase-associated lipocalin (NGAL) and soluble urokinase plasminogen activator receptor (suPAR) – proteins associated with inflammation – have been linked to severe dengue and could be indicators of life-threatening dengue.

The researchers measured NGAL and suPAR concentrations in urine samples from dengue patients as well as healthy individuals, and the results suggested that urinary NGAL and suPAR levels were significantly elevated in dengue patients compared to the individuals without dengue, with concentrations rising with disease severity.

Both suPAR and NGAL levels in the patients' urine collected before the onset of the critical phase could predict the likelihood of patients developing severe dengue three to four times more accurately than warning signs alone.

The researchers are currently working to develop and validate an all-in-one test that measures NGAL, suPAR and dengue proteins in urine, potentially allowing patients to monitor their condition at home.