

SINGAPORE

## NUS develops robotic sock for patients with circulation problems

By [Matthias Tay](#), TODAY

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TODAY reports: The robotic sock will physically move a wearer's lower leg to keep the leg muscles active and promote blood circulation, say researchers.

PHOTOS



Dr Liu Yuchun, a member of the research team from the National University of Singapore's Yong Loo Lin School of Medicine and Faculty of Engineering, demonstrating the use of the robotic sock. (Photo: TODAY/ Matthias Tay)

CAPTION

SINGAPORE: Those who are bedridden and suffer from circulation problems – which can lead to fatal conditions – could see some relief from a robotic sock that National University of Singapore (NUS) researchers are seeking to test.

The researchers, from NUS's Yong Loo Lin School of Medicine and Faculty of Engineering, have developed a sock that will physically move a wearer's lower leg, to keep the leg muscles active and promote blood circulation. The sock has silicon panels which can be pre-programmed to a desired setting, and must be plugged into an electrical source to function.

The aim is to lower the risk of developing Deep Vein Thrombosis (DVT) - a condition that usually occurs when the body is in a prolonged stationary position. This is common among patients with mobility problems.

Assistant Professor Raye Yeow Chen Hua from NUS' Department of Biomedical Engineering, a member of the research team, noted that current methods to ward off poor blood circulation can lead to undesirable side effects, or are of little help to the patient.

For example, commonly used anti-coagulant medication increases the risk of excessive bleeding, and medical prophylaxis such as compression stockings has been deemed of little assistance to the condition based on clinical reports from the United States, he said.

DVT, he pointed out, causes up to 800,000 deaths per year globally. "If you work the math out, it is about one death every minute," he added.

The team plans to roll out their robotic sock to patients across the island after more tests have been done to further improve the existing model.

The first trial is expected to commence next month and will last till August. The team will seek out patients from the National University Hospital (NUH) to test the sock.

-TODAY/xk