

# There's a spring in granny's step

**Temasek Poly students invent device to help elderly climb stairs**

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**A**S A young boy, Mr Jason Aik could recall his grandmother climbing the stairs with great difficulty.

"She would use her arms to pull herself up as her legs were weak," said Mr Aik, who used to live with his grandmother.

Back then, the 10-year-old could only stand by and watch as the elderly woman struggled up the stairs.

But the image remained deeply etched in his mind.

Now a Temasek Polytechnic (TP) student, the 21-year-old came up with a device to help his 80-year-old grandmother climb the stairs with less effort.

Last Friday, the final-year Intelligent Building Technology student and two of his coursemates, Agnes Ang and Jaime Goh, both 19, launched Knee-Aid – a knee guard to help the elderly climb stairs better – at the Young Ideas for Silver Industry Seminar-cum-Fair at TP.

The device was part of their final-year project.

The event was sponsored by Spring Singapore under the Young Entrepreneurs Scheme for Schools, in line with Global Entrepreneurship Week.

Knee-Aid works on the same principle as a knee guard. However, a torsion spring is attached to the part of the device that is behind the knee. This helps propel the user's foot forward when climbing the stairs. (See graphic.)

The device, weighing less than 500g, also has a thigh and calf support, both made of aluminium but padded to prevent discomfort.

The aluminium ensures that the user's knee is properly supported and does not shift out of place when the wearer is walking.

So how is Knee-Aid a better than a walking stick?

Mr Aik explained: "A walking stick requires an elderly person to aim the device, especially when he or she is climbing the stairs. If they miss, they could fall."

The team estimates that the product, if commercialised, will cost about \$8 to \$9 each.

"We wanted to make it affordable to the elderly, so there is no high-end gadgetry involved," Mr Aik said.

Mr Henry Quake, CEO of the Council for Third Age, was at the fair. "I was very impressed with Knee-Aid, especially with its low cost," he said.

Mr Aik said his team will explore ways to commercialise the product with their lecturer.

So what does his grandmother, who often has to use the stairs when she makes her way home to her HDB flat in Sengkang, think of his device?

"She told me she would wear it as it is very light and user-friendly," she said.

"She used to be able to climb only one flight of stairs, but now she can do three at a go."



TNP PICTURE: GAVIN FOO

**GETTING A LEG UP:** Mr Jason Aik getting his grandmother to try out Knee-Aid. He was moved by her difficulty in climbing stairs and, with coursemates Agnes Ang and Jaime Goh, developed the device.

## HOW IT WORKS



## OTHER PROJECTS

Some of the products and ideas showcased at the fair:

**Intelligent Walking Frame (Temasek Poly)**

Retractable wheels allow user to slide the

frame forward easily.

**Read Aloud Pen-pal (Pioneer Secondary School)**

Smart pen that reads aloud words on a printed page.

**Alarme Alerter (ITE College East)**

Package consisting of smoke detector

and wristwatch to alert hearing-impaired if fire alarm sounds.

**EZ-ware Food Warmer (Ngee Ann Secondary School)**

Dual-function food container that can heat food and keep food fresh in an air-tight container.