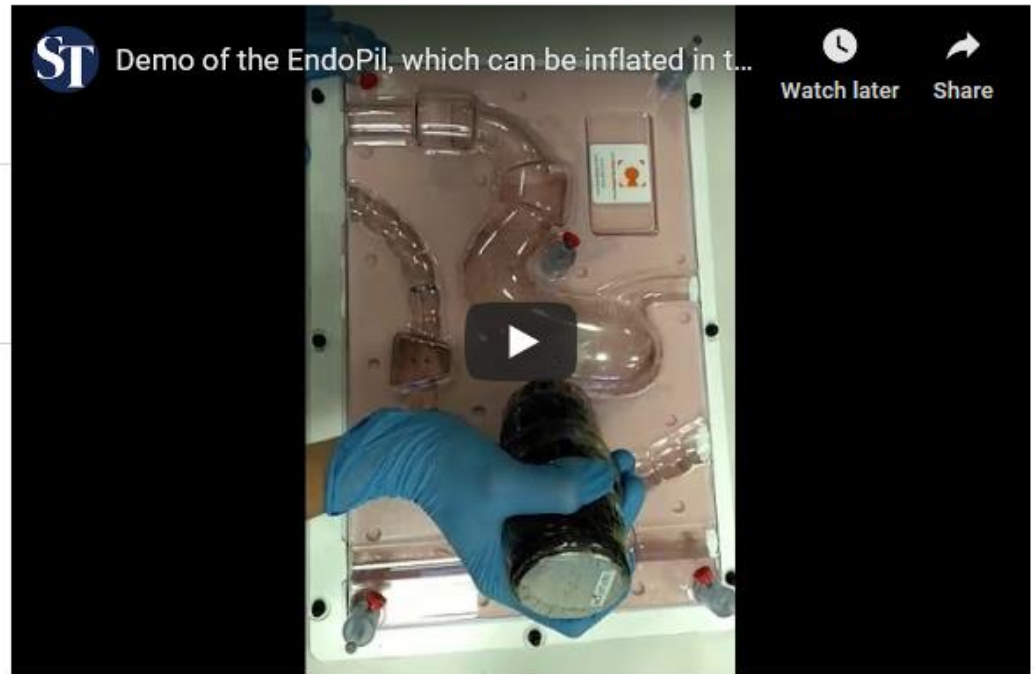


Researchers working on self-inflating weight management pill

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SINGAPORE (ANN): A self-inflating capsule being developed by local researchers could one day help overweight or obese people - for whom diet and exercise have proven futile - to shed the kilos.

The team hopes it will provide a non-invasive alternative to the intragastric balloon, which is inserted by an endoscopy or catheter into the stomach, to make patients feel fuller faster and limit what they can eat.

The EndoPil capsule is designed to be ingested orally, and once in the stomach, can be inflated with a handheld magnet to induce a sense of fullness, said Professor Louis Phee, Dean of Engineering at Nanyang Technological University (NTU).

Measuring 3cm by 1cm, it has an outer gelatine casing that contains a deflated balloon, an inflation valve with a magnet attached, and a harmless acid and salt stored in separate compartments in an inner capsule.

When the capsule enters the stomach, the acid within breaks open its outer casing and an external magnet is used to open the inflation valve.

This allows the acid and the salt to mix and react, producing carbon dioxide to fill up the balloon and make it float to the top of the stomach - the portion that is more sensitive to fullness, said Prof Phee.

The balloon can be inflated to 120ml within three minutes and can be deflated magnetically to a size small enough to enter the small intestine for it to be passed out in the faeces.

Professor Lawrence Ho, a senior consultant with the Division of Gastroenterology and Hepatology at the National University Health System, said: "EndoPil's compact size and simple activation using an external hand-held magnet could pave the way for an alternative that could be administered by doctors even within the outpatient and primary care setting. This could translate to no hospital stay, and cost saving to the patients and health system."

While the intragastric balloon is usually left inside the stomach for up to six months, the EndoPil would be removed within a month so that the stomach does not grow used to the balloon's presence, said Prof Ho.

This would also ensure that the space-occupying effect in the stomach is achieved gradually while side effects due to sudden inflation such as vomiting and discomfort can be avoided, he added.

In tests, the capsule was inserted through an endoscope in a pig which lost 1.5kg after a week. It was also tested on a female patient here for about five minutes using an endoscope. She did not experience any discomfort or injury from inflation of the balloon.

Researchers are now working on programming the capsule to biodegrade and deflate after a stipulated time frame, before being expelled by the body's digestive system.

They will also conduct trials in the future where the capsule is ingested orally. - The Straits Times/Asia News Network