

Technology for seniors

* Lily: Nanyang Technological University-University of British Columbia Research Centre of Excellence in Active Living for the Elderly

Technology is making it easier and safer for seniors to continue living at home, even for those who are alone. Senior health correspondent **Salma Khalik** shows what a flat decked out for seniors living solo could look like.

MEAL DISPENSER

- The city of Helsinki provides seniors with a custom-made freezer-cum-heater that can store 18 frozen meals.
- While the meals are listed, the unit will also describe the meal pack as it is removed from the freezer.
- It is programmed to remind the senior to heat up the dish in time for the meal. When done, a light comes on as a voice announces that the meal is ready.
- The unit is restocked fortnightly, with food that gives seniors the nutrition they need — including proteins to keep up their bone and muscle mass.



PHONE WITH BIG NUMBERS

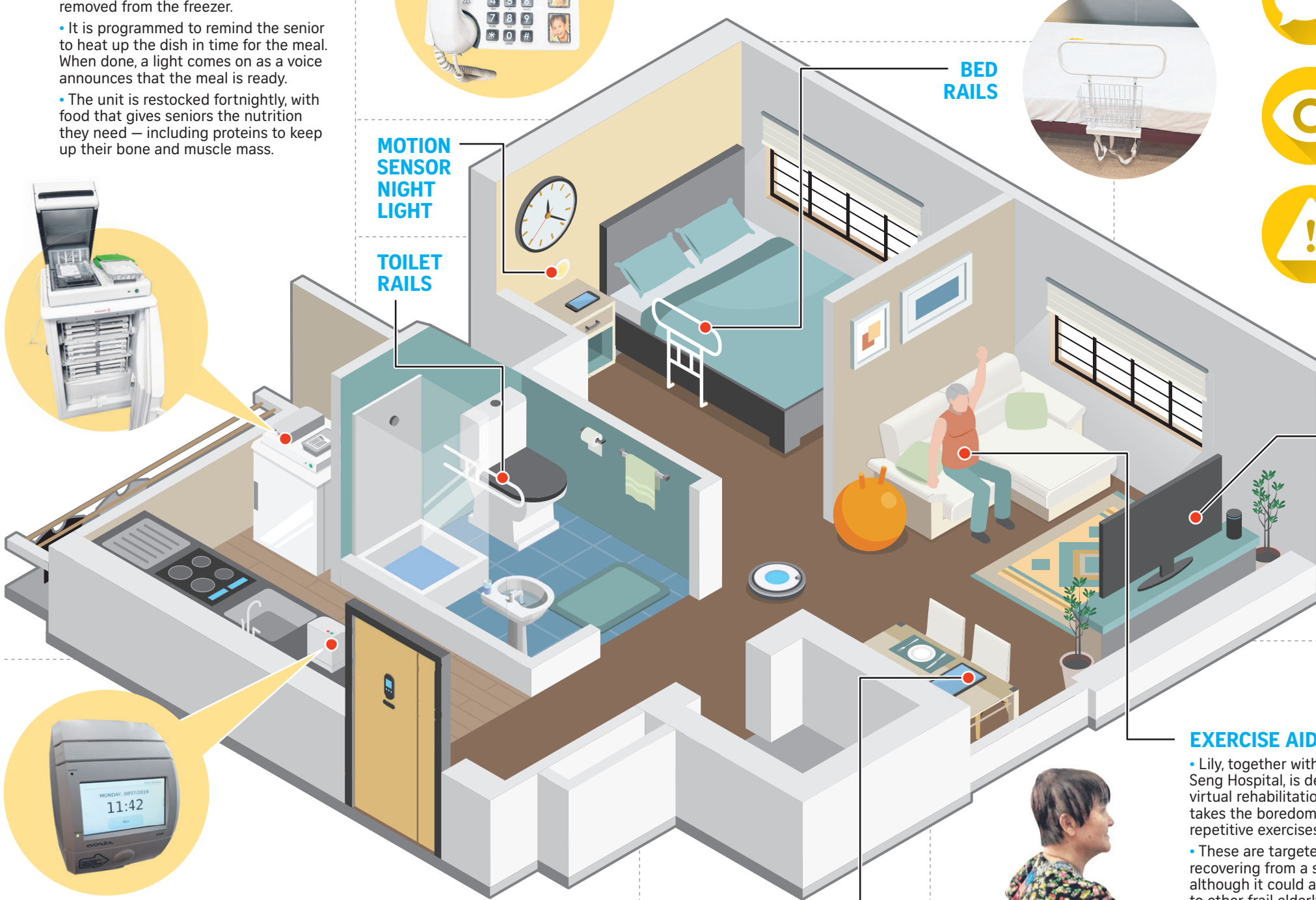
- Available here, these phones have large numbers so seniors don't need to strain their eyes.
- There are four quick-dial options where pictures of the person can be stuck to the button. Just press the picture and the call goes through.



BED RAILS

MOTION SENSOR NIGHT LIGHT

TOILET RAILS



PILL DISPENSER

- A major problem with seniors is compliance when it comes to taking medicine, but this is often not deliberate.
- Older people can forget if they have already taken the day's dosage, or even how much to take, and may end up taking too much or not enough of their medication. Both are bad for them.
- The Finnish provide them with a pill dispenser that alerts the seniors to take the packet of medicine, which it pushes out and slits open.
- The reminder gets louder if the patient does not take the medicine. If still not taken, it is stored in a separate compartment so the patient does not take it later and an alert is sent to the caregiver.



VIRTUAL LUNCH MATES

- Seniors alone at home may feel lonely.
- With a mobile device like a tablet before them, they can eat and chat with a few friends — usually with four others. A coordinator links everyone up, and also checks that everything is fine with each person.

EXERCISE AIDS

- Lily, together with Tan Tock Seng Hospital, is developing virtual rehabilitation games that takes the boredom out of repetitive exercises.
- These are targeted at patients recovering from a stroke, although it could also be useful to other frail elderly.



- The program is able to assess the motor and cognitive skills of seniors to detect deficiencies, like a weaker arm, so remedial action can be taken.

FRIENDLY A.I.

- Lily is working on a friendly artificial intelligence (AI) program that can be personalised to suit each individual's needs. It talks to the person and is built to be persuasive, curious and with a willingness to explain. It learns to be better with use.
- For example, it might tell the person that he needs to exercise, and the reply may be: "Hmm, later." It then checks with his friends' AIs and says: "Hey, Hamid and Ah Lan are walking in the nearby park. Why don't you join them?"
- This companion can remind the person to take his medicine and meals.
- The amount of monitoring and intervention is adjustable — including linking up the whole house so the AI would know if the person remains in bed beyond the usual time, keeps taking drinks from the fridge, or has been pacing for some time.
- If the behaviour is erratic or worrying, it contacts the caregiver with a brief description of the problem, like "Your dad stayed in bed till noon."



VIRTUAL GROUP EXERCISE

- This is a virtual group activity for people who may have difficulty leaving home.
- A coordinator links up as many as 30 people at a fixed time every day. The exercises are often done sitting in a chair.
- The trainer can see how everyone is doing, and correct them if they are doing the exercises wrongly.

