

# Research centre to tackle dental issues in S'pore and region

**Vanessa Liu**

A new dental research institute has been set up to tackle Singapore's oral health issues.

A 2016 survey found that almost one in three Singaporeans aged 60 and above – or 31 per cent of the age group – were totally toothless.

This is considerably higher compared with other developed nations, where only 17 per cent to 20 per cent of the same age group have no teeth at all.

To address this problem, the National Dental Research Institute Singapore (NDRIS), launched yesterday, aims to drive oral health research in Asia and translate scientific findings into applications that can benefit the local and regional communities.

These include creating new dental devices with the help of technology. Examples are dental plugs constructed using a 3D printer to temporarily replace a dental implant, and microneedles for injection that will speed up the procedure and reduce pain.

Associate Professor Goh Bee Tin, director of research and education at NDRIS, said not knowing enough about oral hygiene, a high-sugar diet and misconceptions about how long our teeth should last are reasons why toothless smiles are common among the silver-haired in Singapore.

"The issue here is that most people go to the dentist only when there is a problem, such as a toothache. By then, it is already too late," she told *The Straits Times*.

False ideas about dental health

31%

Percentage of Singaporeans aged 60 and above who are totally toothless, according to a 2016 survey. In other developed nations, 17 per cent to 20 per cent of the same age group have no teeth at all.

also play a part, she said. The older generation "may think that extraction is the only way to treat or get rid of dental diseases, and that it is inevitable your teeth will decay and have to be extracted as you become older – but it is not true", she said.

Prof Goh cited the example of Sweden, where the average number of teeth that an 80-year-old has is 25. Singapore pales in comparison – only 9 per cent of those aged 80 and above have 20 teeth or more. An adult, on average, has 28 to 32 teeth for a full set.

The new institute will study micro-organisms in the mouth of elderly patients to see how they differ from younger patients.

"A lot of times, (the elderly) have dry mouth as there is a reduction in the saliva flow. That may change the profile of the micro-organisms," said Prof Goh.

"At the moment, it is sort of like a one size fits all; all dental diseases are treated the same way. But through advanced technologies, like through studying the microbiome or the micro-organisms in the future, we may be more able to tailor the treatment for specific segments of the population," she added.

The NDRIS will also conduct surveys to study oral hygiene habits of the population, and improve overall dental health via research, education and policy recommendations.

Toothless smiles and aesthetics are not the only consequence of dental decay, said researchers *The Straits Times* spoke to.

Scientific evidence has pointed to the link between tooth decay and systemic diseases such as diabetes, heart disease and cancer, as well as pregnancy complications.

"The saliva actually reflects the general health of the person," said Professor Jaya Seneviratne, principal investigator at NDRIS.

"Gum disease is actually an inflammation of the mouth. It releases inflammatory components, such as bacteria, into the system's circulation. The bacteria can enter the bloodstream and traverse to other organs in the body, causing a lot of complications."

The research institute, which is a collaboration between the National Dental Centre Singapore (NDCS) and SingHealth Duke-NUS Academic Medical Centre, taps NDCS' clinical and research capabilities and partnerships with other academic and research institutions.

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