

Singapore Research Programme Reimagines Texture-Modified Diets for Seniors

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A pioneering research initiative in Singapore is transforming how food is designed for older adults facing chewing and swallowing challenges, with a strong focus on dignity, nutrition and enjoyment.

The DIGNIFIED (Delicious, Integrative, Good Nutrition and Fulfilment in Elderly Diet) programme, led by Dr Verena Tan at the Singapore Institute of Technology and supported by the Agency for Science, Technology and Research, aims to address a growing yet often overlooked issue in the nation's ageing population.

As Singapore's demographic shifts toward an older population, many seniors experience reduced chewing ability due to missing teeth, ill-fitting dentures or swallowing difficulties. While texture-modified diets are available in healthcare settings, they are often perceived as bland, unappealing and disconnected from familiar foods, leading to reduced appetite and poor nutritional intake.

The DIGNIFIED programme seeks to change this perception by reframing such diets not as a clinical necessity, but as an opportunity to preserve dignity, cultural familiarity and enjoyment at mealtimes.

"This programme is about ensuring seniors can continue experiencing familiar foods while maintaining dignity, even as they face chewing or swallowing challenges," said Dr Tan. "By combining food science and nutrition insights, we can create solutions that support both health and quality of life."

Multidisciplinary Approach to Food Innovation

As Singapore's first large-scale, multidisciplinary study in this area, DIGNIFIED brings together food technologists, engineers, sensory scientists, dietitians, speech therapists and chefs. The programme focuses on developing food solutions that balance safety, nutrition, taste, visual appeal and cultural relevance.

One of its key innovations is MAKANsoft, a novel food texturant designed to enhance the taste and appearance of pureed foods, allowing seniors to better appreciate their meals.

Insights from Community-Based Study

Since November 2024, the programme has engaged more than 200 community-dwelling seniors across Singapore in a cross-sectional study examining dietary habits, food preferences and perceptions of healthy ageing.

Key findings include:

82 per cent of seniors consider taste a critical factor in meal choice

68 per cent consume three main meals daily, with nearly half adding a snack

63.5 per cent recognise the importance of protein, though many struggle with access or preparation

46.5 per cent are aware of texture-modified foods, but only 16 per cent have tried them

79 per cent would consider such foods if they developed chewing difficulties

These insights highlight both awareness gaps and strong potential demand for improved senior-friendly food solutions.

From Research to Real-World Impact

The programme is actively collaborating with food manufacturers, healthcare providers and food service companies to co-develop products suitable for commercialisation and wider adoption.

Central to the initiative is the framework developed by the International Dysphagia Diet Standardisation Initiative, which standardises food textures and drink consistencies to improve safety for individuals with swallowing difficulties.

At upcoming showcases, stakeholders will have the opportunity to see the framework applied in practice, including hands-on demonstrations and tastings of IDDSI Level 5 foods.

Redefining Ageing Through Food

By combining scientific research with culinary innovation, the DIGNIFIED programme aims to reshape how society views ageing and nutrition, moving beyond clinical solutions toward food experiences that support both health and happiness.

Its long-term vision is to integrate senior-friendly food innovations across healthcare, community care and the broader food industry, ensuring that ageing populations can continue to enjoy meals that are both safe and satisfying.