

PROJECT DETAILS

Project Title:

Taste modulation in 3D-printed texture modified foods for aged care.

Project Summary:

Over half of aged care residents experience chewing and swallowing difficulties and require texture modified foods (TMFs), such as minced or pureed meals, to prevent choking and pneumonia. However, texture modification often compromises nutritional and sensory qualities. Three-dimensional food printing (3DFP) deposits food materials layer by layer to produce designed geometries and compositions, offering unique advantages for creating visually appealing and nutritionally improved TMFs. Sensory function declines with age and is further impaired by oral health issues, medications and chronic diseases such as dementia. Sensory changes alter food preferences, reduced appetite, and inadequate dietary intake (malnutrition). Around 40% of Australian aged care residents are malnourished, whilst up to 40% of served food remains uneaten (plate waste). By contrast, sodium intake in this population can reach 300% of the recommended limit (≤ 920 mg/day), and free sugars can exceed 26% of total energy (%EFS), far above the WHO cut-off of $<10\%$ EFS. Here, we propose using 3DFP to spatially distribute salt and sugar within TMFs to maintain perceived saltiness and sweetness while reducing overall sodium and sugar content.

Preferred Applicant Skillset:

Dietitian; Food science and technology; Sensory science; Chemical engineering; Nutrition

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