

Problem statement [C]: To develop calorie- and nutrient-dense snacks, desserts and beverages suitable for the elderly

Desired outcomes:

Snack, desserts and beverages that are calorie- and nutrient-dense and with local flavours that can be consumed by the elderly outside of their main meals.

[Optional] Snack, desserts and beverage created to also be suitable for patients with moderate to severe dysphagia, who will have more specific requirements for the texture of food and beverage served.

Background of problem:

As the elderly tend to consume smaller portions in their main meals, snack, desserts and beverages are an important means of supplementing the calorie and nutrition intake of the elderly. While hospitals and nursing homes typically have central kitchens that can prepare meals for the elderly, they often lack the manpower and equipment to prepare snacks, desserts and beverages that are consumed outside of main meals.

Off the market, there is a lack in variety of snacks, desserts and beverages that are calorie- and nutrient-dense, and are suitable for elderly consumption in terms of product texture (i.e. easy to chew and swallow) and taste preferences (i.e. local flavours). In particular, patients with dysphagia require modification in the texture of food and fluid consumed. The shortage of snack, desserts and beverage options for patients with moderate to severe dysphagia is even more acute.

The development of calorie- and nutrient-dense snacks, desserts and beverages will provide care-givers a means of supplementing the nutrition intake of the elderly. The products should come with local flavours and are easy to store and prepare for consumption. The products should also come with packaging that is easy for the elderly and care-givers to identify and handle.

[Optional] Products suitable for consumption by patients with moderate to severe dysphagia will also require modified texture to facilitate swallowing.

The price range of the products should be about \$1.00-1.50 per serving. The products can be used in an institution setting, as well as at home or during travel. One institution has an estimated 250 consumers and could require 3,000 servings of product per month.

Product requirements

Must have (Core):

- Nutrient rich to supplement main meals
 - source of energy, protein (~15g), calcium, vitamin D, vitamin B12, dietary fiber (ideally), folate, vitamin C
- Local flavour to be adapted in the products
 - Beverages: e.g. barley drink, chrysanthemum tea, Longan
 - Desserts: e.g. bean curd, durian/mango-flavours
 - Snacks: e.g. nasi lemak/laksa flavours

- Appropriate texture and appearance
 - Soft foods and process-softened foods for easy chewing and swallowing
 - Retain visual appearance, mouthfeel, taste and aroma to cater to local preferences
- Operational/ Production Process and Storage
 - Shelf-stable at ambient conditions
 - *[Where applicable]* Can be chilled or served warm without compromising on texture and nutrients
- Shelf-life: Minimum of 3 days at ambient conditions
- No artificial additives, colourings, flavours

Nice to have (Flex):

- Contains probiotics, prebiotics, omega 3
- Food texture is suitable for patients with dysphagia
- Packaging that is easy for elderly and care-givers to identify and handle product
 - Easy to open product packaging
 - On-The-Go packaging format for convenience, i.e. easy to carry
 - Easy for elderly to read contents and carry out instructions
- Clear label of ingredient list and preparation instruction

Must not have:

- Products with low shelf-life
- Products that are high in sodium, sugar, trans fat and saturated fat. Please refer to HPB Healthier Choice Symbol Nutrient Guidelines: <https://bit.ly/2qLaRB8>

Market potential for proposed solution/product

- Products can be consumed by the elderly outside of main meals in institutional settings, at home or when travelling.
- The price range of the snack or beverage should be about \$1.00-1.50 per serving. One institution has an estimated 250 consumers and could require 3,000 servings of product per month.