Food & Nutrition

General instruction

- Work in this book will not be marked.

Stimulus 1

Test kitchen report

Research and development

The food company developed three prototype formulations in its test kitchen. The company researched current food trends and tested these prototypes for elderly consumers. The results are outlined in this report.

Current food trends for elderly consumers

Texture
The texture of food is vital to create interest, variety and fibre in the diet of elderly consumers but this needs to be balanced with consideration for eating, chewing, swallowing and digestion issues.

Nutritionally dense foods
Nutritionally dense foods are important to meet the requirements of elderly consumers. These consumers often lose their appetite and, owing to lower activity levels, don't need large meals. Including important sources of nutrition such as protein, fibre, calcium and iron is important.

Variety is the spice of life
According to a study of 50 elderly consumers, menu fatigue was one of the major concerns of those who were living alone or in care with few visitors. Aged care facilities were seen as institutions where the same food was served week after week. Increasing the choice of meals offered adds variety to the life of elderly consumers.

Prototype replacements for fish curry

- Prototype 1 — Curried cauliflower and chicken soup
- Prototype 2 — Broccoli and bacon pasta bake
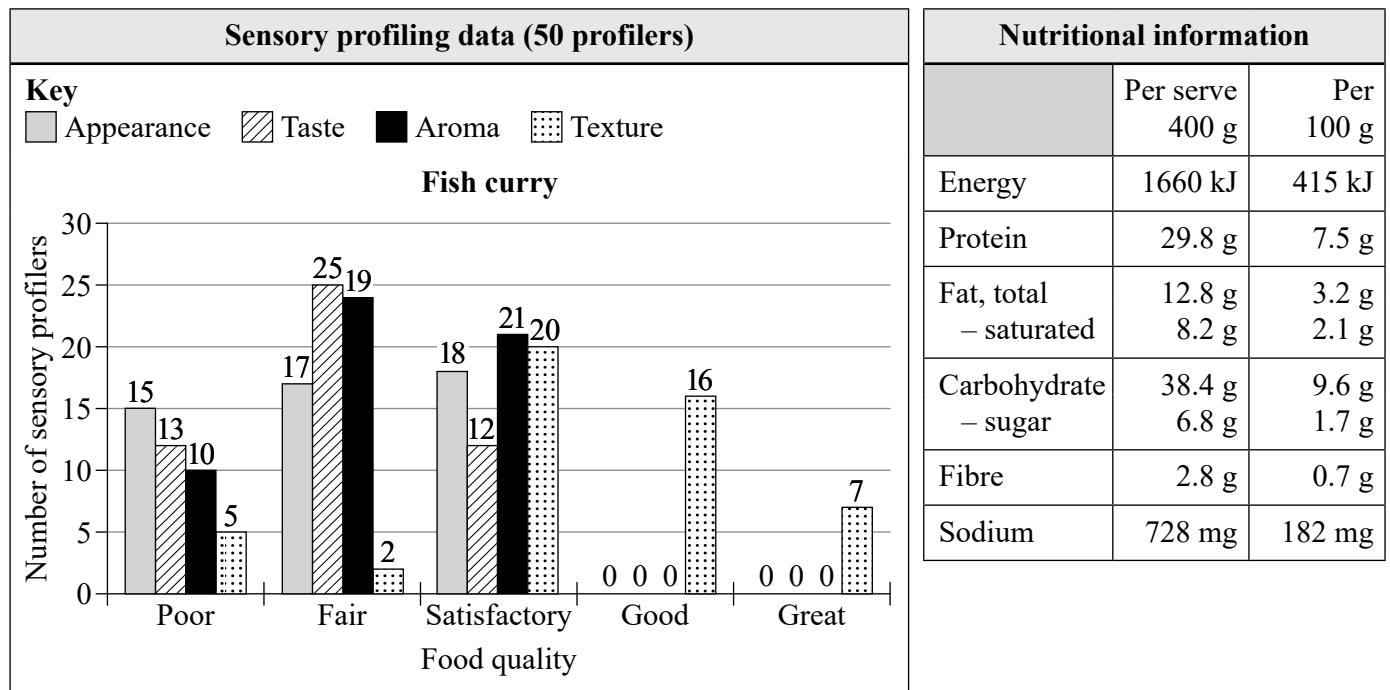- Prototype 3 — Chutney and mustard meatloaf

Dinner options for aged care residents

	Option 1	Option 2	Option 3
Monday	Bolognaise with spinach	Chicken casserole with vegetables	Ham, pineapple and green salad
Tuesday	Corned beef, vegetables and onion sauce	Pumpkin soup with sour cream	Vegetarian lasagna with salad
Wednesday	Fish and chips	Lamb casserole with vegetables	Chicken pesto pasta salad
Thursday	Sausages with vegetables and gravy	Tuna casserole with seasonal vegetables	Vegetarian quiche and salad
Friday	Beef casserole with vegetables	Roast chicken and vegetables	Caesar salad
Saturday	Curried sausages and rice	Meat pie with potato topping	Tomato and vegetable soup with flat bread
Sunday	Lamb rissoles and vegetables	Fish curry	Asian beef noodle salad

Testing

The food company used sensory profiling testing from 50 residents of the aged care facility to obtain data for the fish curry and the three new prototypes developed.

Formulation to be replaced — Fish curry

Sensory profiling data (50 profilers)

Key
Appearance ▨ Taste ■ Aroma ▦ Texture

Fish curry

Nutritional information

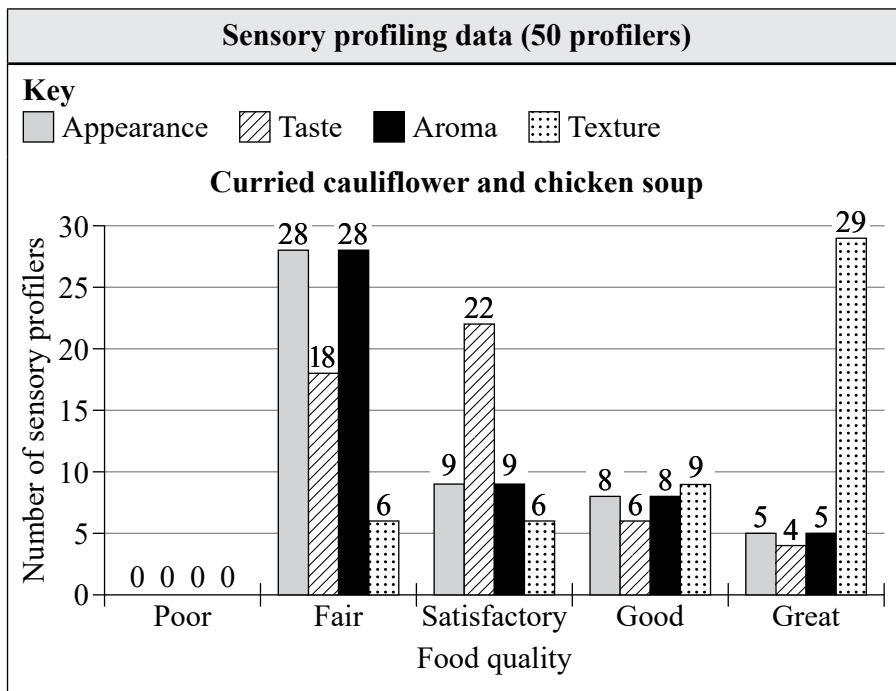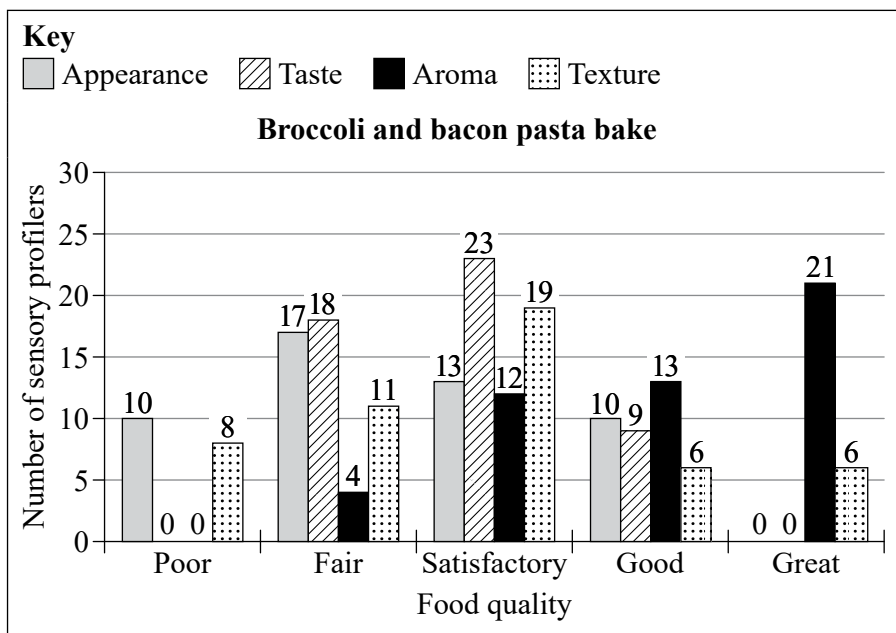|	Per serve 400 g	Per 100 g
Energy	1660 kJ	415 kJ
Protein	29.8 g	7.5 g
Fat, total	12.8 g	3.2 g
– saturated	8.2 g	2.1 g
Carbohydrate	38.4 g	9.6 g
– sugar	6.8 g	1.7 g
Fibre	2.8 g	0.7 g
Sodium	728 mg	182 mg

Additional comments

After sensory profiling, researchers interviewed the same 50 residents to determine any other issues with the fish curry. Their comments are shown in the table.

| Comments	Percentage (%)
The size is too small	40
No fish pieces	10
It is too spicy	6
It doesn't look good	14
Don't like the other options on that day	20
Don't like the meals at all. Relatives bring food when they visit	10

	Food components	Procedure
Prototype 1: Curried cauliflower and chicken soup 4 servings	20 mL rice bran oil 500 g skinless chicken thigh fillets 225 g brown onion, diced 60 g curry paste 450 g cauliflower, chopped 180 g potato, cubed 400 g can of tomatoes 750 mL salt-reduced chicken stock 200 g green beans, chopped 60 g baby spinach 20 mL lemon juice 60 g plain Greek-style yoghurt	1. Heat oil in a large saucepan. Cook chicken until browned. Transfer to a plate. Roughly shred. 2. Add onion to pan. Cook, stirring, for 3 minutes or until softened. Add curry paste. Cook, stirring, for 1 minute. Add cauliflower and potato. Cook, stirring, for 5 minutes. 3. Add tomatoes and stock. Cover. Bring to the boil. Reduce heat to low. Simmer, stirring occasionally, for 15 minutes. Set aside for 5 minutes to cool. 4. Blend soup, in batches, until smooth. Return soup to pan over low heat. Add beans, spinach, lemon juice and chicken. Cook, stirring, for 2 minutes or until beans are tender. Remove pan from heat. Stir in yoghurt.
Prototype 2: Broccoli and bacon pasta bake 4 servings	20 mL olive oil 320 g bacon, chopped 180 g leek, sliced 2 × 29 g sachets cheese sauce powder 1 L milk 20 g wholegrain mustard 125 mL dry white wine 375 g fresh fettuccine pasta 400 g broccoli florets 80 mL water	1. Preheat oven to 200 °C. 2. Heat oil in a large pan over medium-high heat. Add bacon. Cook until lightly browned. Add leek. Cook, stirring, until leek just softens. Reserve a quarter of the bacon mixture. 3. Place cheese sauce powder in a large bowl. Gradually add milk, whisking until smooth and combined. Whisk in mustard. 4. Add wine to pan. Bring to a simmer. Add milk mixture to pan. Cook, stirring constantly, until mixture bubbles and thickens. 5. Reduce heat. Add pasta, broccoli and 80 mL water. Cook, stirring occasionally, until pasta softens. Season with salt and pepper. Spoon into baking dish. 6. Sprinkle reserved bacon mixture over the top and bake at 200 °C.
Prototype 3: Chutney and mustard meatloaf 4 servings	20 mL olive oil 225 g brown onion, finely chopped 500 g pork and veal mince 80 g dried breadcrumbs 2 eggs 80 g bacon, chopped 40 g parsley, finely chopped 40 mL tomato chutney (spicy sauce) 20 g wholegrain mustard	1. Preheat oven to 180 °C. 2. Heat oil in a frying pan, sauté onion until tender. 3. In a large bowl, place onion, mince, breadcrumbs, eggs, bacon, parsley, chutney and mustard. Mix until well combined. Spoon into prepared pan. 4. Bake for 1 hour or until golden brown and cooked through. Rest for 5 minutes. 5. Drain off any dripping, then remove meatloaf from pan.

Sensory profiling data (50 profilers)

Key
Appearance | Taste | Aroma | Texture

Curried cauliflower and chicken soup

Number of sensory profilers vs Food quality

Food quality	Appearance	Taste	Aroma	Texture
Poor	0	0	0	0
Fair	28	18	28	6
Satisfactory	9	22	9	6
Good	8	6	8	9
Great	5	4	5	29

Broccoli and bacon pasta bake

Number of sensory profilers vs Food quality

Food quality	Appearance	Taste	Aroma	Texture
Poor	10	0	0	8
Fair	17	18	4	11
Satisfactory	13	23	12	19
Good	10	9	13	6
Great	0	0	21	6

Chutney and mustard meatloaf

Number of sensory profilers vs Food quality

Food quality	Appearance	Taste	Aroma	Texture
Poor	0	0	0	0
Fair	5	8	5	21
Satisfactory	23	20	23	17
Good	17	12	17	7
Great	5	10	5	5

Nutritional information

Prototype 1	Per serve 250 g	Per 100 g
Energy	641 kJ	256 kJ
Protein	12.7 g	5.1 g
Fat, total	7.1 g	2.8 g
– saturated	1.8 g	0.7 g
Carbohydrate	7.4 g	3 g
– sugar	4.7 g	1.9 g
Fibre	3.1 g	1.2 g
Sodium	470 mg	188 mg

Prototype 2	Per serve 280 g	Per 100 g
Energy	1550 kJ	554 kJ
Protein	20.8 g	7.4 g
Fat, total	12.1 g	4.3 g
– saturated	5.5 g	2 g
Carbohydrate	40.5 g	14.5 g
– sugar	7.4 g	2.6 g
Fibre	2.2 g	0.8 g
Sodium	758 mg	271 mg
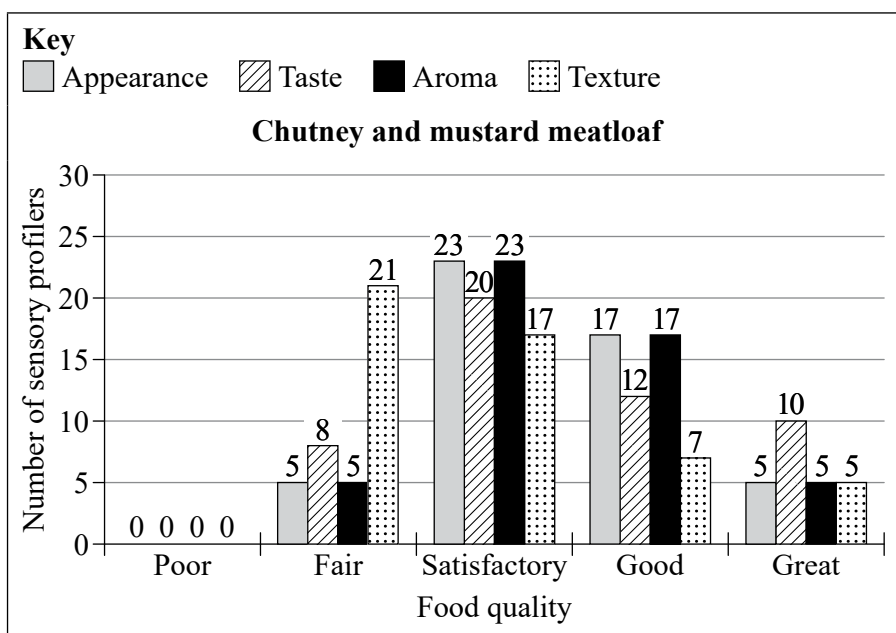
Prototype 3	Per serve 190 g	Per 100 g
Energy	1470 kJ	774 kJ
Protein	29.0 g	15.3 g
Fat, total	18.2 g	9.6 g
– saturated	5.5 g	2.9 g
Carbohydrate	16.7 g	8.8 g
– sugar	6.4 g	3.4 g
Fibre	1.8 g	0.9 g
Sodium	565 mg	297 mg

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