

# Creating High Quality Menus in Aged-Care Settings with Food Fortification

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## DISCLOSURE

I acknowledge that my presentation for Dietitian Connection has been sponsored by Abbott Australasia.

The information presented today is based on my own research and experiences. This allows me to share this information with many dietitians with the goal of improving the quality of aged care nutrition across aged care facilities and in the community setting.

# Learning Objectives:

1. How a HPHE menu as a standard can lead to better clinical outcomes for residents
2. The goals of food fortification in aged care
3. Practical tips for developing delicious fortified recipes
4. How to use ONS powders in large-scale cooking to help support aged care catering teams



# *A young dietitian walked into a kitchen...*

- Developed fortified recipes without testing them
- Chefs used the fortified recipes
- Residents continued to lose weight



- ONS product changed the taste, texture & consistency of foods

Residents refused to eat it!



1. Catering teams don't know how or when to use it

2. It's not used in the right way – often not enough

**What are the common problems?**

3. Recipes aren't being tested before implementing

4. Not having a nutrition goal for the overall menu

## Challenges to Good Nutrition

- Reduced or minimal appetite
- Early satiety (feeling of fullness)
- Inability to feed self
- Increased requirements eg infection, fractures
- Side effects of/ interactions with medication
- Dislike of diet eg texture modified diets
- Multiple medical conditions
  - Acute on chronic illness

NUTRITION IN AGED CARE IS COMPLEX

# NUTRIENT REQUIREMENTS FOR OLDER PEOPLE

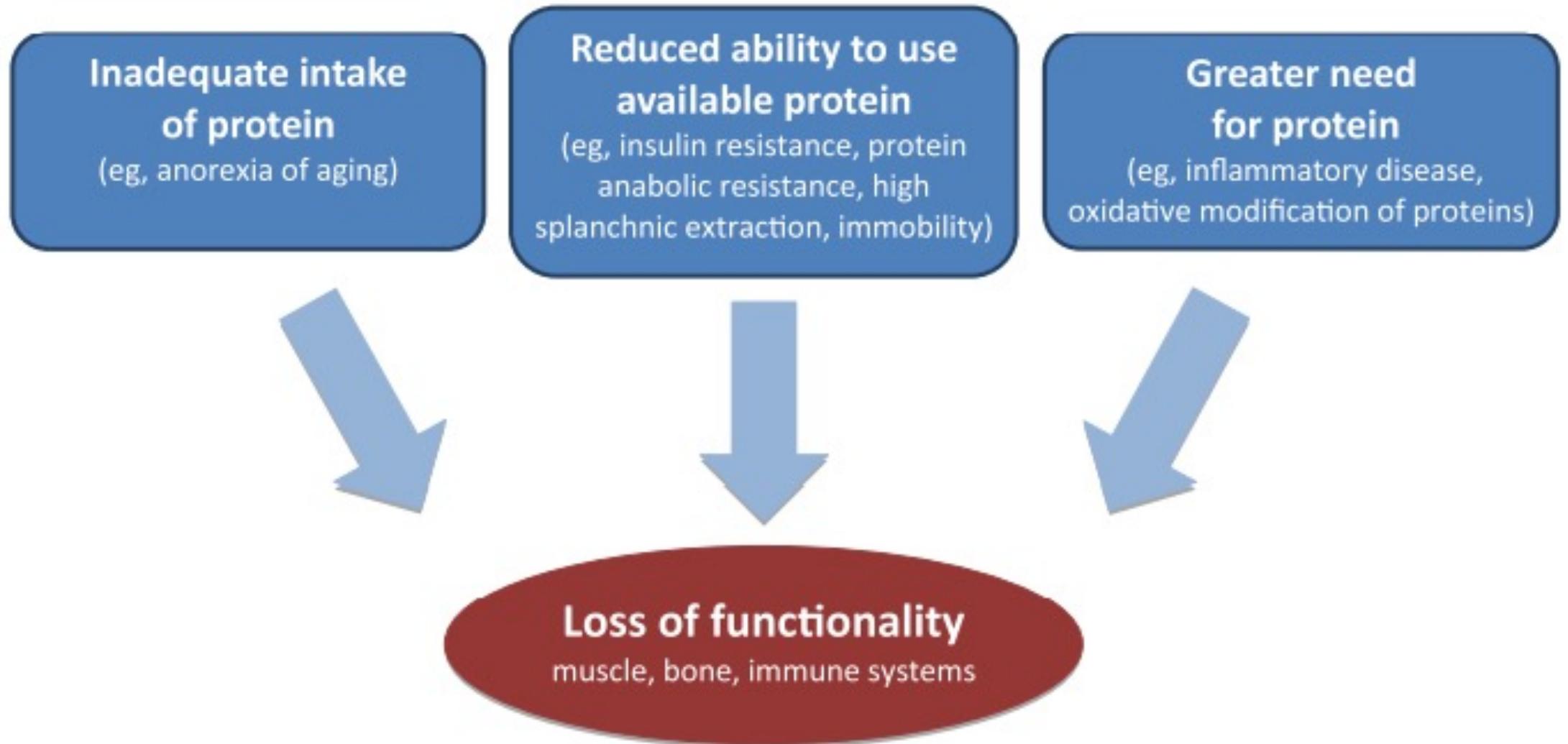
## What is the aim for protein?

- Aim for **1.2g/kg/day**<sup>1</sup>
- Recommended to help older people regain and maintain lean muscle mass & function
- Prevent **Sarcopenia** = age-related loss of muscle mass & strength
- Effects ALL older people
- Anabolic response to dietary protein is lower as we age



1. Bauer J, Biolo G, Cederholm T, Cesari M, Cruz-Jentoft AJ, Morley JE, Phillips S, Sieber C, Stehle P, Teta D, Visvanathan R, Volpi E, Boirie Y. Evidence-Based Recommendations for Optimal Dietary Protein Intake in Older People: A Position Paper from the PROT-AGE Study Group. JAMDA. 2013; 14:542.559.

# AGEING-RELATED CAUSES OF PROTEIN SHORTFALL<sup>1</sup>



# KEY NUTRIENTS WITH INCREASED REQUIREMENTS

Vitamin/ Mineral	Deficiency
Calcium: 1300mg/day	Osteoporosis: ↓ bone mass. Losses ↑ bone #. Absorption ↓ with oxalate, dietary fibre. Vit D required for optimal absorption
Vitamin D: 15ug/day	Impaired mineralisation of bone, osteomalacia. Enhances absorption of Ca, P. Important sources: tuna, salmon, dairy, egg, butter
Zinc: 11-12mg/day	Impaired immune function, hair loss, loss of appetite, taste changes, diarrhoea. Important sources: wheatbran, lamb, egg yolk, chicken, beef, cheese.
Iron: 8mg/day	Anaemia, anorexia, fatigue, breathlessness on exertion. May be caused by injury, haemorrhage, illness, malabsorption.
Vitamin B12: 2.4ug/day	Weakness, fatigue, pernicious anaemia. Often seen with malabsorption due to inadequate production of intrinsic factor (PPI's)

The primary goal of food fortification is to 'top up' the nutritional content of the original food/meal, to cater for small appetites and increased requirements

**It's not a 'bandaid' fix to improve menus that don't meet core food group standards**



## WHAT DOES THIS LOOK LIKE ON A MENU?

Reference weight 70kg (estimated middle range) = 84g protein

AGHE core food groups:

- Meat & Alternatives: 2 – 2.5 serves
- Dairy & Alternatives: 3.5 – 4 serves

	Serves	Protein per serve (average)	Protein (Total)
<b>Meat &amp; Alternatives</b>	2.5	20g	50g
<b>Dairy &amp; Alternatives</b>	4	8g	32g
			<b>82g per day</b>

## Top 3 Tips for Fortification

1. Aim to provide the OPPORTUNITY for every older person to meet their nutrition requirements
2. Get more 'bang for your buck'!  
Which foods are most commonly consumed that will have the biggest impact?
3. Choose foods that you can enhance the flavour of by fortifying

# OBJECTIVE FOR THE ENSURE NEUTRAL CATERING PROJECT:

1. Develop & test fortified recipes most commonly consumed in aged care
2. Determine how Ensure Neutral works on a larger scale
3. Develop best practice instructions for food fortification – to maintain flavour and product stability



- Where do we go wrong with fortification?
- What are the limiting factors for facilities? For dietitians?



## WHAT ARE THE ISSUES IN FORTIFIED FOODS?

- Changing the flavour, appearance or consistency of foods
- Residents not eating fortified foods → high food wastage
- Not having clear recipes that worked
- Uncertainty of fortifying on a bulk scale
- Increased cost – no awareness of cost benefit
- No clear targets on what a fortified menu needs to provide
- Is a fortified menu for everyone?

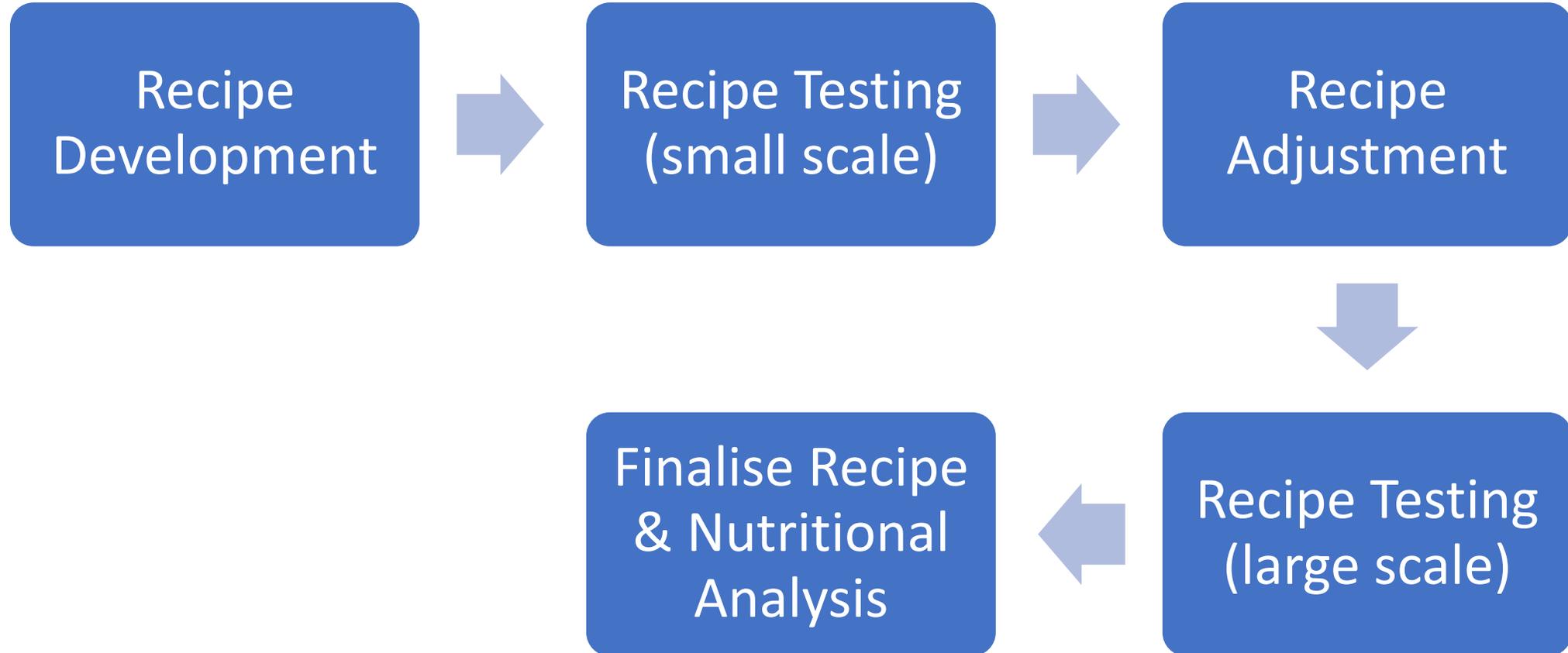
# Which foods should we try to fortify?



## Decision-making Process:

- Foods that are commonly consumed in aged care settings
- Foods that may be preferred when appetite is poor – e.g. mid-meal snacks, dessert, soup
- Main meal options (inc. texture modified)

# FORTIFIED RECIPE DEVELOPMENT PROCESS



## **Breakfast**

- Fortified Milk for Cereal
- Porridge
- Semolina
- Cheesy Scrambled Eggs

## **Snacks**

- Pikelets
- Scones
- Carrot & Date Muffins

## **MAIN MEALS**

- Mashed potato
- Shepherds Pie
- Thai fish cakes
- Bechamel Sauce
- Soups

## **Desserts**

- Custard with Stewed Fruit
- Baked Vanilla Cheesecake
- Chocolate Mousse

## **Nourishing Drinks**

- Hot Chocolate
- Blueberry Smoothie

# What Were My Findings?

## Baking

- Add ONS powder into the liquid component, not the dry ingredients
- This creates a more lighter, fluffier texture
- General aim for  $\frac{1}{2}$  cup Ensure Neutral to 1 cup of liquid





## What Were My Findings?

### Main Meals

- ONS powders containing maltodextrin can create a sweeter taste to a savoury food. This is a benefit when balancing flavours eg with acid from tomatoes in ratatouille



## Main Meals

Adding to hot foods - Add ONS powder into a small amount of liquid (milk, cream etc) and create a paste similar to a cornflour mix

# What Were My Findings?

## Main Meals

- Adding to hot foods – preferable to add at the end of cooking/heating
- Reduce the amount of time it is being heated to retain as much nutrients as possible



# But what about the extra cost to the food budget?

- Cost-benefit of using ONS powders to fortify far outweighs the cost
- When we have a well-designed menu that meets protein requirements and core food group standards, we can achieve better health outcomes



# Benefits to Fortifying For All Residents

- Fortifying the most commonly consumed meal items in bulk
  - ✓ All residents have the Opportunity to meet nutrient requirements
  - ✓ Simplifies the process of fortifying of select residents



	Protein (g)
<b>Breakfast:</b>	
<b>Fortified Porridge OR</b>	9
<b>Fortified Milk with Cereal</b>	10
<b>Toast, Fruit</b>	
<b>Yoghurt</b>	8
<b>Morning Tea: HPHE scone with jam and cream</b>	5
<b>Lunch:</b>	
<b>Shepherd's Pie with Fortified mashed potato, Roast Pumpkin &amp; Peas</b>	24
<b>Apple Crumble with HPHE Custard</b>	5
<b>Afternoon Tea: Cheese and Crackers</b>	9
<b>Dinner:</b>	
<b>HPHE Cauliflower Soup + dinner roll</b>	5
<b>Homemade chicken, cheese and hidden vegetable sausage rolls</b>	20
<b>- with potato gratin + salad</b>	
<b>HPHE Strawberry Cheesecake</b>	9
<b>Supper: HPHE Hot Chocolate + 2 shortbread biscuits</b>	7
	<b>Total = 102g protein</b>

# Milk Powder vs ONS powders

## Milk Powder

Which powder would be most suitable for each particular meal or snack item? How does it fit into the daily menu nutrient targets?

## ONS Powder

Cheap and easy to use.  
Common ingredient in most aged care kitchens

Consider lactose load across the day, if adding milk powder plus meeting recommended 4 serves of dairy/day

When more than just protein is required (calcium, vitamin D, choline)

Lower lactose load across the day, particularly when fortifying various menu items.



## Factors to Consider with Bulk Scale Cooking

- How long will the fortified food be heated for?
- What is the reheating process for texture modified foods?
- Does everyone get fortified options, or just those on a HPHE diet?



## Fortified Foods in the Bain Marie

- Foods were tested by fortifying and being kept at temperature during meal service
- Ensure Neutral was stable enough for this purpose
- Check food services at your facility
  - Is it an extended meal service time?

# This is William

- He is 65kg, manages to mobilise with his 4WW to the dining room daily. He has a small appetite and doesn't like big meals. How can we meet his protein requirements through the HPHE menu?



Mealtime	Menu (protein)
Breakfast	Fortified porridge (12g) 1 egg (6g)
Morning Tea	2 biscuits with 150ml smoothie (15g)
Lunch	Small serve main hot meal (20g) Dessert with custard 100ml (4g)
Afternoon Tea	Mini quiche with cup of tea (5g)
Dinner	Soup with 1 slice bread, small serve hot meal, fruit (20g)
Supper	Full milk chocolate drink with 2 plain biscuits (8g)

**Total = 90g**

(Assuming he eats and drinks it all)

# Food Fortification – Practical Strategies

- **Test, test, test!!**
  - Food is only nutritious if it is eaten – does the fortified food taste delicious? If not, go back to the kitchen with the chef and keep testing
  - Check the product to be used and identify when is the best time and method to add the powder into food. Foods that are to be served hot are the most challenging to get right
- **Choose foods that are most commonly eaten by most residents**
  - Bang for your buck = the most benefits for residents to improve their clinical outcomes by meeting nutrition requirements

# Key Messages:

- A HPHE menu as a standard can lead to better clinical outcomes for residents
- Food fortification can be used to 'top up' essential nutrients in a standard menu
- **Test, test, test and taste, taste, taste!**
- Dietitians and chefs that work together on recipe development and testing get the best results for food quality and resident enjoyment
- Use the ONS powders to their advantages, learn how they work within different recipes and use them to enhance the nutritional content as well as flavour of the food

