Nutritional care after stroke and management of dysphagia. What is possible?
Aims of nutritional care after stroke and in dysphagia:

• To achieve as safe swallowing as possible - to prevent aspiration and choking

• Ensure meals are correct consistency, nutritionally complete and meet individual requirements

• Prevent malnutrition and dehydration

• Achieve best possible outcomes
Nutrition support strategies:

• May include oral nutritional supplements, specialist dietary advice and/or tube feeding\(^2\)

• The following should be reviewed regularly:
  - Oral intake
  - Hydration status
  - Weight / functional measures
  - Tolerance of ONS/enteral feeds
Nutritional Management Pathway for Stroke Patients - the continuum of care

Nutritional Management of Stroke Patients

- Nil By Mouth
  - Enteral tube feeding
- High risk of malnutrition with dysphagia
  - Texture modified diet
  - Thickeners
  - Pre-thickened ONS
  - Enteral tube feeding
- High risk of malnutrition without dysphagia
  - Dietary advice
  - Oral nutritional supplements
- Low/medium risk of malnutrition
  - Dietary advice
  - Therapy assessment to optimise access to food

Regular screening and monitoring
Enteral Tube Feeding (ETF)

- NICE CG68\(^1\) and the National Clinical Guideline for Stroke\(^2\) recommend that people with stroke who are unable to take adequate nutrition and fluids orally should:
  - Receive tube feeding with a nasogastric (NG) tube within 24 hours of admission
  - Be considered for a nasal bridle tube or gastrostomy if they are unable to tolerate an NG tube.
  - Be referred to an appropriately trained healthcare professional (aka Dietitian) for detailed nutritional assessment, individualised advice and monitoring

Dietary advice - The new IDDSI framework

- Transitional foods
  - Liquidised
  - Pureed
  - Minced & moist
  - Soft & bite-sized
  - Regular

- Drinks
- Thin

- Foods
  - Extremely thick
  - Moderately thick
  - Mildly thick
  - Slightly thick
  - Thin
Diet Modification

- Texture modification of food and fluids is widely used for the management of dysphagia which can occur as a result of stroke\(^1\)
- Speech and language therapists are key to assessing which consistency provides patients with the best control over the rate at which food and fluids pass through the pharynx\(^2\)
- If the patient consumes food or fluids of the incorrect consistency they are at risk of aspiration\(^3\)
- The use of thickeners improves safety of swallow in patients with dysphagia\(^4\)

What do we know about the nutritional content of texture modified diets?

How do they compare to normal textured diets with respect to....

– Energy
– Protein
Why pureed diets (IDDSI level 4) may limit nutrient intake..

- Limited foods / texture constraints
- Self-imposed restrictions / rejection
- Require ‘dilution’ / require longer cooking time which reduces vitamin content
- Modifying the texture may increase the volume – a challenge in cases of early satiety
Dietary intakes in older people in hospital with dysphagia consuming a texture modified diet

- Only 13% finished their meal
- Only 13% had the correct texture / meal choice delivered

Wright et al (2005) J Hum Nutr Dietet 18
## Older people’s energy intakes - normal diet & texture modified (level 4) incl. contribution from ONS

<table>
<thead>
<tr>
<th>Group</th>
<th>Average energy diet alone (kcals)</th>
<th>Average energy provided by ONS (kcals)</th>
<th>Total energy consumed / day (kcals)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal diet</td>
<td>981</td>
<td>263</td>
<td>1,244</td>
</tr>
<tr>
<td>Texture modified</td>
<td>702</td>
<td>295</td>
<td>997</td>
</tr>
</tbody>
</table>

Wright et al (2005) J Hum Nutr Dietet 18
Protein requirements in older adults

- Loss of muscle mass and strength (sarcopenia) affects up to 50% of older adults\(^1\)
- Risk of sarcopenia increases with inactivity
- Older people and those who are unwell require increased protein intakes at regular intervals (20-30g/meal), combined with physical activity\(^1,2,3\)
- Achieving adequate protein intakes often more challenging in dysphagia

3. PROT-Age (2015)
Examples of 20 grams of protein

- Large eggs
- 100g steak
- 500ml milk
- 80g peanut butter
Protein intake in hospital (stroke unit)

- Dysphagic group: mean intake = 40 g / day (0.66 g per kg body weight)
- Mean requirements 1.2 g / kg body weight = 72 g / day

Protein intake < 60% of daily requirements

Based on data in Wright et al (2005) J Hum Nutr Dietet 18
Food fortification

• Can help address shortfall **but**
  ❖ may affect the taste properties of food
  ❖ check it is feasible, practical and acceptable?
  ❖ new products emerging (pureed petite options)
**TMD Snacks can be a challenge**

<table>
<thead>
<tr>
<th>Normal Snacks</th>
<th>TMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>✗ Nuts</td>
<td>✓</td>
</tr>
<tr>
<td>✗ Crisps</td>
<td>✓</td>
</tr>
<tr>
<td>✗ Sweets</td>
<td>✓</td>
</tr>
<tr>
<td>✗ Biscuits</td>
<td>✓</td>
</tr>
<tr>
<td>✗ Fruit</td>
<td>✓</td>
</tr>
<tr>
<td>✗ Sausage rolls/pastries</td>
<td>✓</td>
</tr>
<tr>
<td>✗ Sandwiches</td>
<td>✓</td>
</tr>
<tr>
<td>✗ Cake</td>
<td>✓</td>
</tr>
</tbody>
</table>

- ✓ Cake and custard
- ✓ Smooth yoghurt
- ✓ Using soaking solutions e.g. biscuits
Thickeners

• Blend quickly and smoothly
• Can be used in all hot and cold food and drinks
• Improve appearance of meals
• Achieve puree consistency without liquid separation necessary for a safer swallow
• Amylase resistant and ‘clear’ options available
• Used correctly can reduce risk of dehydration
Do patients have access to Pre thickened ONS products, within your service?

- YES
- NO
- Unsure
Oral Nutritional Supplements (ONS)

- May require testing against IDDSI and thickening
- Pre-thickened supplements and high protein oral nutritional supplements are available
- Count as fluid
- Offering between meals can minimise satiety, medicine style doses may increase compliance
- Need to be accessible
- Right flavour and presentation
ONs - the benefit when used appropriately

Use of ONS is linked with a significant improvement in:

- Attenuating weight loss¹
- Energy and protein intake²
- Risk of pressure sores²
- Handgrip strength³
- QoL³
- Markers of cognitive recovery⁴
- Measures of motor function⁵

ONS should complement dietary intake not replace it

Would you consider starting an oral nutritional supplement (ONS) in someone who is underweight/losing weight/struggling to eat sufficient?

A. Yes
B. No
SENSORY STIMULATION IS KNOWN TO SUPPORT THE SWALLOWING RESPONSE

Sensory stimulation is crucial in modulating the swallow response.

Oropharyngeal sensory deficit has been linked to dysphagia\(^1\) and is related to higher prevalence of aspirations\(^2\) in people with neurological disease.
Novel research

- Enhancing sensory stimulation of the oropharynx, has been found to compensate for loss of sensitivity and benefit the swallow response\(^1,2\).
- Types of sensory stimulation include thermal, mechanical, taste, and chemical stimulation\(^1\) - potential target for management of dysphagia\(^1\).

Oral nutritional support - Evolution of products

• Amylase resistant ONS and thickeners

• ONS that include ingredients that offer a cooling mouth sensation, through cooling flavours and create sensory stimulation by triggering cold receptors in the oropharynx.
Ongoing nutritional rehabilitation
Effective nutrition support relies on effective teamwork

- Catering, dietetics, SLT - suitable meals
- Nurses, carers, OT - provide assistance, equipment and encouragement at meal times
- Regular monitoring of food and fluid intake is necessary to develop, update and implement appropriate care plans that are patient-centred, predictive and participatory
Have you got a local working group to improve practice in place

Bedson JV (2009) Complete Nutrition Vol 9 No 1
Summary

• Malnutrition is prevalent in stroke patients and it’s causes are multifactorial

• Nutrition support should be initiated for people with stroke who are at risk of malnutrition or projected to be unable to eat to meet requirements

• Nutrition support may include oral nutritional supplements, specialist dietary advice and/or tube feeding

• Teamwork is essential

• Nutritional rehabilitation may be required for months beyond hospital discharge
The consequences of malnutrition, sarcopenia and dysphagia is costly. Commissioners need to invest in SLT & dietetic services to integrate nutritional and dysphagia care into pathways of care beyond the hospital?
Thank you for your attention

Any questions - time permitting?
• Clave P, de Kraa M, Arreola V, et al. The effect of bolus viscosity on swallowing function in neurogenic dysphagia. Ailment Pharmacol Ther. 2006;24;1385-94.
• Dennis M. Poor nutritional status on admission predicts poor outcomes after stroke Observational data from the FOOD trial. Stroke. 2003;34;1450-5.
References

References