Assessment and treatment of dysphagia – What is the evidence?

Dietary treatment in Dysphagia

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Outline of Presentation

- Current dietary interventions
- Current challenges
- Strategies for improving
  - Nutrition
  - Hydration
- Ethical Issues
Current Dietary Interventions: Management and Aims

Texture Modified Diets (TMD) are the foundation of dysphagia management

Dietary management of dysphagia aims to:-

- Maximise health and well being
  (Burton et al, 2011)

- Minimise the risk of under-nutrition and dehydration
  (Flintsone et al, 2001)

- Minimise risk of aspiration pneumonia
  (Perry & Love 2001)

- Maintain oral nutrition
  (Burton et al, 2011)
**Current Dietary Interventions:** Dietary Management

- **Texture modification**
  (Rothenberg et al., 2007, Germain et al., 2006, Garcia & Chambers, 2010)

- **Fluid modification**
  (Butt and Lamb, 2005, Garcia et al., 2005)

- **Education and Training**
  (Ginocchio et al., 2009, Dune, 2008, Garcia, 2008)

- **Interdisciplinary management**
  (Dyer, 2003, Nazaro, 2009)
Current Dietary Interventions: Texture Definitions

Rheological properties
Objective measures
(National Dysphagia Task Force, 2002)

Subjective evidence for foods and fluids

Rheological properties
Objective and sensory methods (Wendin et al, 2010)
Current Dietary Interventions: Modified Diets - Soft/Minced/Mashed

Foods easily mashed with a fork require very little chewing.

Examples:
- flaked fish in sauce
- stewed apples
- custard
Current Dietary Interventions: Modified Diets - Thick and Thin Puree

Food that has been pureed or has puree texture.
Can hold its own shape on a plate, can be piped layered or molded. Can be eaten with a fork no chewing required.

- Mousse
- Smooth fromage frais
- Sieved mashed potatoes

Food that has been pureed or has puree texture.
Can be poured.

- Tinned tomato soup
Current Challenges: Texture Descriptions

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**Current Challenges: Variety**

Bread and potato can be adapted for most TMD.

- sweet potato,
- potato powder
- breadcrumbs
Current Challenges: Snacks

Normal Snacks ✗
- Fruit
- Nuts
- Crisps
- Sweets
- Biscuits
- Sausage rolls/pastries
- Sandwiches
- Cake

TMD ✓
- Cake and custard
- Smooth yoghurt
Current Challenges: Preparation

- Achieving smooth puree
- Moulded foods
- Commercially prepared TMD foods
Current Challenges: Separation

Some pureed foods are not stable!

- Carrot
- Beef stew
Current Challenges: Stabilisation

Food Products

Nutritional Products
Current Challenges: Nutritional Inadequacies

- **Energy**  
  (Wright et al, 2005, Nowsen et al, 2003)

- **Protein**  
  (Wright et al, 2005, Nowsen et al, 2003)

- **Micronutrients**  
  (Lengyel et al, 2008)

- **Fluid**  
  (Finestone et al, 2001)
**Strategies:** Nutrition - Food Fortification & Enriching Normal Diet

- **Small/frequent meals**  
  (Taylor & Barr, 2006)

- **Nutrient-dense meals**  
  (Lorefalt et al, 2005)

- **Mealtime assistance**  
  (Wright et al, 2008)

- **Food fortification**  
  (Adolphe et al, 2009)

- **Oral Nutritional supplement**  
  (Baldwin & Parson, 2004)

- **Enteral Nutrition**  
  (Nice 2011, Foley et al, 2008)
### Strategies: Nutrition - Food Fortification & Enriching Normal Diet

#### Energy

- Adding double cream to soups, mashed potatoes, sauces or desserts
- Adding butter or margarine to vegetables, pasta, scrambled egg or in cooking
- Adding jam/honey/syrup to breakfast cereals or puddings
- Adding glucose or glucose polymers to drinks and foods

#### Protein

- Adding extra skimmed milk powder to milk
- Adding extra egg to mashed potatoes/puddings
- Adding cheese to potatoes, soups and savoury dishes
- Oral nutritional supplements especially for dysphagia
**Consistency UK / US** | Description | Examples of naturally thick fluids |
--- | --- | --- |
**Syrup / Nectar** | Can be drunk through a straw/cup if preferred. Leaves thin coat on back of spoon | Strained thick smoothie, e.g. Innocent UK |
**Custard / Honey** | Cannot be drunk easily through a normal straw. 
Can be drunk from a cup 
Leaves thick coat on back of spoon | McDonald’s milkshake |
**Pudding / Spoon thick** | Thickened to stage that needs to be taken from a spoon | Thick custard |
Strategies: Fluid Texture Modification – Understanding Thickeners

STARCH
✓ Particles expand like a balloon capturing the fluid
✓ Can be added to hot or cold drinks
✓ Less effective water binding than gum
✓ Starchy/grainy flavour and texture
✓ Metabolism and water absorption in the small intestine
✓ More prone to chemical reactions with base fluids
✓ Starch/grainy flavour and texture**

GUMS
✓ Interact with liquid by forming “nets” that trap liquid
✓ Hot liquids may need to be cooled then re-heated
✓ Excellent water binding properties.
✓ More stable
✓ Metabolism and water absorption in the large intestine
✓ Sensory perceptions slick/oily flavour and texture**

Strategies: Fluid Texture Modification – Consistency Challenges

Achieving fluid viscosity
(Goulding & Bakheit, 2000, Garcia et al, 2010)

Effect of time on viscosity
(Garcia et al, 2008, 2005, O'Leary et al 2011)

Saliva (Hanson et al, 2011)
Strategies: Fluid Texture Modification – Achieving Hydration

- Patients requiring thickened fluids are less likely to meet fluid requirements
  (Finestone et al, 2001, Vivanti et al, 2009)

- Fluid content from foods
  (Vivanti et al, 2009)

- Standard protocols for mixing

- Pre-thickened drinks
  (Wheelan, 2001)

- Free fluid
  (Panther, 2005, Garon et al, 1997)

- Enteral Hydration
  (Vivanti et al, 2009)
Strategies: Ethical Issues

- **Respect for autonomy**
  - Advanced decisions/end of life wishes

- **Beneficence**
  - Benefit and risks

- **Non-maleficence**
  - Avoidance of harm-physical/psychosocial

- **Justice**

  Disease trajectory/expected outcome
Summary

- Evidence exists to support TMD

- Nutrition and hydration is very often compromised

- Consistency may not always be achieved.

- MDT/Interdisciplinary management.
References


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