

Management of Dysphagia with Texture-modified Foods and Thickened Fluid



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The term dysphagia is used to describe difficulties swallowing resulting from neurological or physical impairment of the oral, pharyngeal or oesophageal mechanisms.¹ Dysphagia is associated with increased morbidity and mortality and decreased quality of life¹ due to increased risk of aspiration, chest infections, pneumonia, choking, asphyxia, dehydration and malnutrition.¹

Dysphagia affects 99 million people worldwide, i.e. approximately eight per cent of the global population.² Dysphagia can occur at all ages but infants and the elderly are most affected.² In the over 65 year-olds 10-30 per cent may have dysphagia,³ along with 50-75 per cent of nursing home residents⁴ and 10 per cent of acute hospitalised elderly patients.⁵ This article will concentrate on dysphagia in adults and one management approach, using texture-modified foods and/or thickened fluids.

Dysphagia may be transient or persistent. In some conditions, progressive deterioration in swallow function is part of the disease process. Following acute stroke, 25-64 per cent of patients may develop dysphagia but nearly half will recover within two weeks.⁶ One study reported that one month after stroke 15 per cent of patients had dysphagia.⁷ For neurological conditions, such as Parkinson's, motor neurone disease (MND) or multiple sclerosis (MS), dysphagia may be an initial symptom in a minority of patients but swallow function will deteriorate in the majority with disease progression, with 90 per cent of MND patients developing dysphagia.¹ Of adults in care homes for dementia, 68 per cent were found to have dysphagia.⁸ Swallowing difficulties may be present in 5.3 per cent of adults with learning disabilities.¹ Dysphagia may occur in 27 per cent of patients with chronic obstructive pulmonary disease (COPD)⁹ and in those with head and neck cancer,¹⁰ or brain injury.¹

Assessment of dysphagia

Dysphagia is identified using bedside swallow assessments and instrumental investigations (e.g. barium swallow, videofluoroscopy and fibre-optic endoscopic evaluation [FEES]) to visualise some or all three of the swallow stages. The National Institute for Health and Care Excellence (NICE) guidelines recommend all patients with acute stroke have their swallow function screened by a suitable trained healthcare professional (HCP) before being given anything to eat or drink.¹¹ NICE advises that those who show signs of dysphagia should

have a specialist assessment within 24-72 hours of admission.¹¹ Usually, speech and language Therapists (SLT) conduct specialist assessments. Bedside assessments are relatively quick, easy to perform and safe for patients, and are often completed by appropriately trained nurses.¹ However, silent aspiration may be missed.¹ FEES only visualise the pharyngeal stage but all instrumental assessments can be used to assess the effectiveness of different management strategies, such as compensatory swallow techniques and variations in food and fluid consistency.¹

Considering the regular movement of HCPs across national borders, consistent usage of terms is becoming more pertinent to safe practice.

Managing dysphagia with texture-modified foods and thickened fluids

Texture-modified foods and thickened fluids may be given to reduce the risk of choking and aspiration.² Choking is defined as the inability to breathe because an airway is blocked, constricted or swollen shut. Thus, supplying foods of a texture that are more easily chewed and swallowed may avoid choking.² Aspiration is the breathing in of a foreign object into the airway. Thickened fluids that flow more slowly, thereby allowing better-controlled swallowing, may reduce aspiration of fluid into the lungs.²

Cichero *et al.*² highlight the need for internationally agreed terminology and descriptors of texture-modified foods and fluids. There are reports that confusion amongst staff in care settings over food textures has been a contributing factor in patient deaths¹² and that foreign body asphyxiation is a preventable cause of death in the elderly.¹³

Cichero *et al.*² comments that even within countries there can be a huge variety of terms that describe foods of different textures.² In 2011, in the UK, the National Patient Safety Agency (NPSA), in conjunction with the Royal College of Speech and Language Therapist (RCSLT), British Dietetics Association (BDA), Hospital Caterers Association (HCA) and National Nurses Nutrition Group (NNNG), published Dysphagia Diet Food Descriptors¹⁴ (see **Table One**). This was an update of the BDA and RCSLT National Descriptors for Texture Modification in Adults (2002).¹⁵ The NPSA Descriptors are for food and we still await the NPSA recommended review of

fluid descriptors (see **Table Two**).¹⁴ Cichero *et al.*² has described a project to develop international standard descriptors and terminology for foods and fluids; with a plan for endorsement by regulatory and professional bodies by January 2015. There are many challenges in achieving this goal when you consider cultural and linguistic differences, and the safety of patients with dysphagia should be paramount.² Ensuring patients receive continuity of care from acute to community settings, and across national and international boundaries, is a key aim.² Considering the regular movement of HCPs across national borders, consistent usage of terms is becoming more pertinent to safe practice. In addition, research will be aided by standardised terminology, as outcomes of studies using different texture-modified foods and thickened fluids will be more directly comparable.²

Stage 1-3 thickened fluids are achieved by adding increasing quantities of commercially available thickeners, as specified by the manufacturer and vary from brand to brand. To illustrate the need for clarification of fluid descriptors in the UK, the author is aware that in some hospital trusts an intermediate stage between naturally thin fluids and Stage 1, sometimes referred to as 'Stage 0' or 'mildly thick', is also employed. In the US, terms such as 'nectar', 'honey' and 'pudding' are used to describe thickened fluids.² The Dietitians Association of Australia and Speech Pathology Association of Australia (2007) agreed terms are 'Mildly Thick Level 150', 'Moderately Thick Level 400' and 'Extremely Thick Level 900', with the numbers referring to a measure of their viscosity.² Products available in the UK may use international descriptors on packaging.

Table One: The NPSA¹⁴ Descriptors for Food

Texture	Description
B	Thin Purée Dysphagia Diet
C	Thick Purée Dysphagia Diet
D	Pre-mashed Dysphagia Diet
E	Fork Mashable Dysphagia Diet

Table Two: BDA/RCSLT¹⁵ Descriptors for Fluid Awaiting Review

Stage	Example/Description
Naturally thin fluids	Water, tea, coffee without milk, diluted squash, spirits, wine
Naturally thick fluids	Full cream milk, cream liqueurs, Complan, Build Up (made to instructions), Nutriment, commercial sip feeds
Stage 1	Can be drunk through a straw; Can be drunk from a cup if advised or preferred; Leaves a thin coat on the back of a spoon
Stage 2	Cannot be drunk through a straw; Can be drunk from a cup; Leaves a thick coat on the back of a spoon
Stage 3	Cannot be drunk through a straw; Cannot be drunk from a cup; Needs to be taken with a spoon

Providing texture-modified food and/or thickened fluids to patients in the acute and community setting

So what are the challenges of providing texture-modified food and/or thickened fluids to patients in the acute and community setting? Food needs to be nutritious, appealing, satisfying and safe – texture modification can provide challenges in meeting all of these criteria. The nutritional content of texture-modified foods, especially puree, may be lower than standard foods. Thus, patients with dysphagia may struggle to meet their nutritional requirements putting them at risk of malnutrition. A study of hospital patients receiving texture-modified foods compared to normal diet found that none of the texture-modified group met their energy requirements compared with nearly half in the normal diet group, and 93 per cent failed to meet their protein requirements as compared to 40 per cent failing in the normal diet group.¹⁶

Hartwell *et al.*¹⁷ found that temperature and texture of food were important factors in patient satisfaction with hospital meal services. Thus, patients' compliance with texture-modified diets may be compromised by poor palatability. In addition, it is crucial that foods are of the correct consistency and do not contain high-risk foods such as skins, husks, hard lumps or crusts forming on foods.¹⁴ The NPSA¹⁴ document contains a checklist for each consistency.

Acute

In hospitals, ensuring patients with dysphagia receive the correct food and fluid to meet their requirements and maintain safety requires effective team working. Nurses, healthcare assistants, dietitians, speech and language therapists, catering and, potentially occupational therapists to provide specialist crockery or cutlery to aid feeding, all contribute. Hospital caterers need to provide suitable menu options that meet the four descriptors, with a minimum provision of Texture-C and -E.¹⁴ This allows for Texture-C puree to be made into Texture-B by adding sauce or gravy before serving and Texture-D is achieved by pre-mashing a Texture-E meal. Hospitals also need to have Texture-C and E options for culturally appropriate diets, e.g. vegetarian, Asian, Caribbean, halal, kosher, and vegan. For some options, demand may be small and thus challenging for mass catering suppliers.

Advances in catering, such as moulding technology for puree meals, have improved their visually appeal. A variety of companies providing food to hospitals and care settings uses this technique (Apetito, Brakes and Premier Foods). The Department of Health recently published *The Hospital Food Standards Panel's report on standards for food and drink in NHS hospitals*, which recommends that dietitians are involved in food and beverage services, "with a focus on ensuring optimal consumption of appropriate and enjoyable meals, snacks and drinks throughout the day."¹⁸ The report refers to the importance of food texture and highlights a case study of successful hospital provision.¹⁸ The HCA has a number of resources on its website, including *'Dysphagia: A Caterers Guide'*, which contains recipes for texture-modified meals.¹⁹ It discusses ways to fortify texture-modified foods and suggests alternatives for difficult to puree foods, such as rice.¹⁹

Community

For patients in the community, texture-modified meals will be provided by a variety of sources, family, carers, residential or nursing home kitchens, delivered via Meals-on-Wheels or commercial companies, such as Wiltshire Farm Foods, Simply Puree, Punjab Kitchen. If family, carers or chefs/cooks in care settings are providing food, support needs to be in place to ensure that it meets nutritional and safe standards. A study by Smithard *et al.*²⁰ of 474 nursing homes, in four strategic health regions in England, found that access to SLT and dietetic services was limited.

In recent years, Meals-on-Wheels services have changed. For example, Brent Council announced in 2013 that it was discontinuing providing Meals-on-Wheels services via a single large caterer and allowing residents to choose from a variety of small suppliers.²¹ This allows for the opportunity for local social enterprises (SE) to provide services that meet specific community needs, e.g. ethnic dysphagic meals. However, while large suppliers can have sophisticated quality and safety controls in place this may be more challenging for a SE.

The provision of thickened fluids can be equally problematic for patients in both acute and community settings. Sura *et al.*²² state that despite being a frequently used method of managing dysphagia there is very little evidence that it results in good clinical outcomes such as reduced incidence of aspiration pneumonia.²² Thickened

fluids are frequently disliked by patients and can result in reduced fluid intake leading to dehydration.²² A recent innovation is the 'Frazier water protocol' which allows dysphagic patients to drink water only between meals.²³ However, it is only suitable for certain patients but does result in improvements in quality of life and hydration.²³

There are a variety of commercially available powdered thickeners on the market (Multi-thick®, Nutilis Clear, Nutilis Powder, Resource® ThickenUp, Resource® ThickenUp Clear, Thick & Easy™, Thixo-D®, Vitaquick™).^{24, 25} However, achieving the correct consistency requires close attention to the manufacturers' instructions. Poor preparation and choice of thickened drinks may be a contributor to unpopularity with patients. A number of pre-thickened drinks (SLO Drinks®, Resource® Thickened Drinks)²⁵ are available. It has been shown that providing pre-thickened drinks does result in better hydration than with drinks made with powdered thickeners²⁴ but this would have significant cost implications, especially in the community setting. In addition, for patients requiring nutritional supplements there is a very limited supply of pre-thickened sip feeds (Fresubin® Thickened Stage 1 and 2; Nutilis Complete Stage 1, 2 and 3).²⁶ Using powdered thickeners in standard sip feeds may cause an unpalatable result. Thus, for some patients, dietitians and SLTs may work together to create fortified drinks of a suitable consistency like smoothies or yoghurt-/custard-based shakes.

Conclusion

Despite dysphagia being a common condition its management in the acute and community setting remains challenging. Recent updates in guidance and standardisation of terminology should contribute to improved care for patients requiring texture-modified foods and thickened fluids. Developing products and services that ensure patients meet their nutritional and hydration needs is an ongoing requirement.

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