

## Appropriate prescribing of thickeners for dysphagia in adults

This bulletin and accompanying briefing cover the prescribing of thickeners including the appropriateness of use, cost effectiveness and safety and efficacy of the different types of thickener available on the market. Nationally the prescribing of thickeners costs the NHS in England over £13.9 million per year (extrapolated from ePACT data November 2014 to January 2015).

### Recommendations

- Ensure the recommendation to prescribe a thickener has come from an appropriately trained healthcare professional, e.g. a Speech and Language Therapist (SLT) after a diagnosis of dysphagia has been made.
- Review the patient's record or management plan to ensure it contains clear documented details of the consistency the patient is able to manage. Consider specifying directions based on the recommended consistency on the prescription to help patients and carers at home and allow transcription to Medicines Administration Record (MAR) chart for patients in care homes.
- Review the patient's record or management plan to ensure it contains clear documented details of the duration of treatment as for some patients dysphagia can be a temporary condition. If this is the case ensure these patients receive a treatment review at the recommended time to assess whether to continue or discontinue the use of thickeners.
- Review quantities prescribed, too many per month can lead to stockpiling and waste; too little per month could mean patients are put at risk, care homes ordering mid-cycle and borrowing from other residents.
- If patients in care homes have clear documented details of the consistency required in their patient record or management plan, consider if bulk prescribing would be appropriate to avoid waste and reduce costs.
- Clear gum-based thickeners are the preferred choice as they are the most palatable and safest. The use of tins, not sachets or pre-thickened drinks is preferred as they are more cost-effective. Examples of clear gum-based thickeners are Nutilis® Clear and Resource® ThickenUp Clear.
- Review other medications to ensure they are suitable for a patient with dysphagia. If the swallowing difficulty is temporary could they be temporarily withdrawn or if dysphagia is long-term should they be permanently stopped if the risks outweigh the benefits. Liquid formulations are not always appropriate for patients with dysphagia as they may also require thickening to enable the patient to take them. Assess if an alternative formulation or route of administration might be more appropriate.

### Background

Dysphagia is the medical terminology used to describe eating, drinking and swallowing difficulties. It can lead to malnutrition, dehydration, reduced quality of life, choking and asphyxia.<sup>1</sup> It is a distressing condition for patients as eating and drinking is an essential everyday activity, which is fundamental for survival, and also generally enjoyable. However, for people who develop dysphagia it can make mealtimes a challenge rather than a pleasure.<sup>2</sup>

Dysphagia is usually caused by another health condition for example stroke, head injury, ageing or a progressive condition, e.g. Parkinson's disease or head and neck cancers. Symptoms include: <sup>1,3,4</sup>

- The inability to recognise food.
- Difficulty placing food in the mouth.
- Inability to control food or saliva in the mouth.
- Difficulty in initiating a swallow.
- Food sticking in the throat or chest.
- Discomfort or severe pain.
- Frequent chest infections.
- Unexplained weight loss.
- Regurgitation, vomiting, coughing and choking.

Thickeners are approved by the Advisory Committee on Borderline substances (ACBS) for the treatment of dysphagia; they are used to thicken both liquids and foods to various consistencies.<sup>5</sup> The passage of liquids and foods consumed tends to be fast and turbulent; the thickener helps to slow down transit to allow the patient more time to co-ordinate the swallowing process safely. This helps to prevent the liquid or food from entering the lungs, which can cause serious complications such as chest infections and death due to choking or aspirational pneumonia, and therefore reduces hospital admissions, length of hospital stays or risk of death.<sup>6</sup>

There are many different brands of thickeners available on the market; some contain starch whilst others contain gums. The recommendation to prescribe a thickener should come from a SLT and should be based on the patient's degree of dysphagia, the desired consistency required, the texture required, palatability and cost-effectiveness amongst other considerations.<sup>7,8</sup>

## National guidance

The National Patient Safety Agency (NPSA) Dysphagia Expert Reference Group in association with Cardiff and Vale University Health Board developed descriptors to detail the types and textures of foods required by patients with dysphagia. The need for descriptors was identified due to concerns about patient safety and requests from industry and in-house NHS caterers. The Dysphagia Diet Food Texture Descriptors use common language and standardise the terminology used to describe dysphagia diets. They are intended to be used by all healthcare professionals when discussing an individual's requirement and when training catering staff and carers.<sup>9,10</sup>

The food textures are:

|          |                              |
|----------|------------------------------|
| <b>B</b> | Thin Purée Dysphagia Diet    |
| <b>C</b> | Thick Purée Dysphagia Diet   |
| <b>D</b> | Pre-mashed Dysphagia Diet    |
| <b>E</b> | Fork Mashable Dysphagia Diet |

Fluids are not included in these descriptors; however the following is guidance for the thickening of fluids:

|                |  |
|----------------|--|
| <b>Stage 1</b> | Syrup (should pour like single cream)                            |
| <b>Stage 2</b> | Custard (should easily drop off, not pour, from a teaspoon)      |
| <b>Stage 3</b> | Pudding (should stay on a spoon like whipped cream) <sup>8</sup> |

The NPSA have also produced a number of patient safety resources to ensure safer practice for adults with learning disabilities who have dysphagia. The resources highlight best practice and provide materials to give practical help. The resources include information for healthcare professionals, patients and carers, care plans and mealtime information sheets. The tools can be adapted for local use and for any adult who has dysphagia.<sup>1</sup>

The Francis report states that patients should have “*food and drink that is, so far as is possible, palatable to patients, and this must be made available and delivered to them at a time and in a form they are able to consume.*” The final report of the Mid Staffordshire NHS Foundation Trust was written in response to the findings of the public inquiry which identified that at Stafford:

- Some patients were left food and drink, but were offered inadequate or no assistance in consuming it.
- Even water or the means to drink it was not made available to patients.<sup>11</sup>

The experiences at Stafford to which witnesses testified are by no means unique in the NHS, as demonstrated in the Care Quality Commission dignity and nutrition reports.

The National Institute for Health and Care Excellence (NICE) Clinical Guideline (CG) 68 Stroke: Diagnosis and initial management of acute stroke and transient ischaemic attack (TIA) looks at the avoidance of aspiration pneumonia as part of the initial patient management. It recommends that for patients with dysphagia, food and fluids should be given in a form that can be swallowed without aspiration, following specialist assessment of swallowing.<sup>12</sup> NICE CG 162 covers the long-term rehabilitation for patients who have suffered a stroke.<sup>13</sup> This guideline covers swallowing as a key priority for implementation. It recommends:

- Swallowing is assessed after stroke in line with recommendations in Stroke - NICE CG 68.<sup>12</sup>
- Swallowing therapy is offered at least three times a week to people with dysphagia who are able to participate, for as long as they continue to make functional gains. Swallowing therapy could include compensatory strategies, exercises and postural advice.
- Ensure that effective mouth care is given to people with difficulty in swallowing after a stroke, in order to decrease the risk of aspiration pneumonia.
- Healthcare professionals with relevant skills and training in the diagnosis, assessment and management of swallowing disorders should regularly monitor and reassess people with dysphagia after stroke who are having modified food and liquid until they are stable.<sup>13</sup>
- Provide nutrition support to people with dysphagia in line with recommendations in Nutrition support in adults (NICE CG 32)<sup>14</sup> and Stroke (NICE CG 68).<sup>12</sup>

The Scottish Intercollegiate Guidelines Network (SIGN) has developed a national clinical guidance (119) for the management of patients with stroke: identification and management of dysphagia. The guideline states that diet modification (the alteration of the texture or viscosity of foods and fluids) and use of postures or manoeuvres have been shown to be effective and are standard management of dysphagia following stroke. However it also suggests that the nutritional content of texture modified food could be reduced in the processing and it may also look unappetising leading to poor adherence to such diets.

The guidelines make the following recommendations:

- Advice on diet modification and compensatory techniques (postures and manoeuvres) should be given following a full swallowing assessment.
- Texture modified food should be attractively presented and appetising.
- Patients should have a choice of dishes.
- Texture modified meals may be fortified to enable patients to meet nutritional requirements.
- Food and fluid intake should be monitored and, if indicated, a referral made to the dietitian.<sup>15</sup>

## Clinical effectiveness

There are a number of commercially available thickeners on the market. Some are starch-based and some are gum-based, some are used to thicken food only and others are indicated to thicken both foods and fluids.<sup>5</sup> When thickening foods and fluids it is important that only the scoop provided with the thickener is used as these can vary between different products. Using the correct scoop will enable the correct amount of thickener to be mixed with the correct amount of foods and fluids. Always follow the manufacturer's instructions to enable the correct texture to be achieved. Consider adding the directions for use to enable the correct consistency to be achieved to the prescription. This will help patients and carers at home mix the thickener correctly and also ensure the instructions are added to MAR charts for patients in care homes.

Thickened foods and fluids make swallowing easier and safer for patients with dysphagia. Starch-based products thicken foods and liquids by swelling up, whilst gum-based thickeners form a mesh in which water molecules become entangled.<sup>6</sup> Starch-based thickeners are commonly prescribed as they have been available longer and are cheaper, however studies have demonstrated that they tend to have an undesirable "starchy" flavour, a grainy texture and can form lumps when mixed with fluids. This makes them less likely to be tolerated and reduces compliance.<sup>8</sup> Fluids thickened with a starch-based thickener tend to be unstable and continue to thicken over time.<sup>6</sup> Alternatively if they are mixed with saliva they can become thinner as they are broken down by the enzyme amylase found in saliva, which reduces the effectiveness of the thickened food or fluid and poses a safety risk to the patient.<sup>8</sup> Gum thickeners are more stable over time, but may need to be shaken vigorously when mixing.<sup>2</sup> They maintain their thickness as they are resistant to amylase which makes them safer for patient use. Gum thickeners have a smoother texture; they are less grainy and tend to be preferred by patients as they are more palatable which improves adherence and hydration.<sup>8</sup>

Thickeners are an effective way to help patients with dysphagia swallow fluids and eat foods safely; however increasing the viscosity by thickening foods and liquids can reduce the dissolution, disintegration and therefore the bioavailability of other medications. A study has shown that a 150 mPa.s (one millipascal-second) viscosity solution thickened with hydroxypropyl methylcellulose impeded the dissolution of paracetamol. At 60 minutes less than 40% of the drug had been dissolved, although drug solubility was not affected. The study also demonstrated the effect of a film coating resulted in only 30% of the paracetamol being dissolved after one hour in a viscous solution.<sup>6</sup> Additionally the electrical charge associated with the thickener can also reduce drug dissolution.<sup>6</sup> Further in vivo studies are required to examine the true effect thickeners have on the availability of other medications.

## Safety

For adult use thickeners in the diet are generally considered benign;<sup>6</sup> however it should be noted that they can contain high sodium content.<sup>16</sup> There have been a small number of reports of gum-based thickened fluids causing infant death due to necrotising enterocolitis and there is potential for both types of thickeners to cause physiological changes which are unintended.<sup>6</sup>

Care home staff will require training in the correct use of thickeners to ensure residents' safety.

Many elderly patients tend to take medications for other conditions and dysphagia will affect the ability to swallow medication as well as foods and fluids. Therefore prescribers should ensure that the minimum thickness is used so the patient can swallow safely, but the effect on bioavailability of other medications is minimised.<sup>6</sup>

There have been concerns about the use of thickeners and their effect on water binding due to the high prevalence of dehydration in patients with dysphagia. However it has been shown that thickeners do not affect the bioavailability of water.<sup>17</sup> Therefore dehydration must be caused by other factors, for example insufficient access to liquids, patients unable to open drinks containers and no assistance with drinking.<sup>6</sup>

Satiety relates to the state of being full to, or beyond capacity. It has been hypothesised that one of the reasons why patients with dysphagia tend to be dehydrated and drink insufficient liquids is because

the thickened liquids trigger the gastric stretch receptors more than thin liquids.<sup>6</sup> No studies that have looked specifically at the effect of thickened liquids on patient satiety, but the literature from the field of obesity and food technology suggests that dehydration in dysphagia patients may be due a number of other reasons:

- The physiological expectations of patients that thick fluids will make them feel full.
- Lack of flavour which is associated with increasing thickness gives the patient little motivation to drink.
- Many thickeners can leave the mouth feeling sticky due to their mucoadhesive qualities which can result in a feeling of constant thirst.
- Clinical recommendations to take small amounts of thickened fluids could result in less being consumed.
- Neuromuscular impairment that results in delayed oral transit further compounds the effect of reduced intake.<sup>6</sup>

A literature review suggests that patients prescribed very thick liquids will struggle to meet hydration needs and patients receiving moderately thick fluids will perceive their drinks to be more filling and will consume less than those on unthickened fluids.<sup>6</sup>

The NPSA have produced resource materials that ensure safer practice for adults with learning disabilities who have dysphagia. They also make several recommendations for best practice; both could be applied to all patients with dysphagia:

- Best practice would be to have a local policy in place for adults with dysphagia.
- To improve the safety of patients with dysphagia the introduction of an individual patient management plan which is regularly monitored and updated can reduce the risks associated with the condition.
- It is important that information on dysphagia management including advice on how to prepare food is made available to patients, carers and family members.
- Patient safety incidents are reported accurately and systems are in place to enable this to happen.
- Carers and staff working with patients with dysphagia should be aware that a change in the patient's medication can cause side effects which could worsen their condition and changes should be checked with a GP or a pharmacist.
- There should be local liaison and care transfer procedures in place between hospital and community services.
- Consider the benefit of having a lead clinician responsible for dysphagia services.
- Where possible, care from trained staff should be available for patients with learning difficulties who have dysphagia.
- All staff and carers in direct contact with patients should have the knowledge of how to deal with choking incidents.<sup>1</sup>

## Costs

The amount of thickener required by each patient per month will vary, and so will the cost, depending on the quantity of fluid they drink and which consistency is required.<sup>7</sup>

**Table 1: Thickeners price comparison table<sup>5,18-26</sup>**

| Product                      | Indication                      | Type                       | Gluten Free (GF)/<br>Lactose Free (LF)              | Net price/pack size         | Quantity per<br>serving         | Cost per serving* |
|------------------------------|---------------------------------|----------------------------|---|-----------------------------|---------------------------------|-------------------|
| Multi-thick®                 | Liquids and foods               | Starch                     | GF & LF   | 250g/£4.83                  | 4 - 5 scoops<br>(10.8g - 13.5g) | 21p - 26p         |
| Nutlis® Clear                | Liquids and foods               | Gum                        | GF & LF   | 175g/£8.46                  | 2 scoops (6g)                   | 29p               |
| Nutlis® Powder               | Foods                           | Starch & gum <sup>20</sup> | GF & LF   | 300g/£4.92                  | 3 - 4 scoops<br>(12g - 16g)     | 20p - 26p         |
|                              |                                 |                            | GF & LF   | 20 x 12g sachets/<br>£6.40  | 1 sachet (12g)                  | 32p               |
| Resource®<br>Thickened Drink | Ready mixed starch-based drinks |                            | GF & LF   | 12 x 114ml/£7.80            | 1 x 114ml drink                 | 65p               |
| Resource®<br>ThickenUp®      | Foods                           | Starch                     | GF & LF   | 227g/£4.55                  | 3 scoops (13.5 g)               | 27p               |
|                              |                                 |                            | GF & LF   | 75 x 4.5g sachet/<br>£17.44 | 3 sachets (13.5g)               | 70p               |
| Resource®<br>ThickenUp Clear | Liquids and foods               | Gum                        | GF & LF   | 125g / £8.46                | 4 scoops (4.8g)                 | 32p               |
|                              |                                 |                            | GF & LF   | 24 x 1.2g<br>sachet/£5.28   | 4 sachets (4.8g)                | 88p               |
| SLO Drinks®                  | Ready mixed starch-based drinks |                            | GF & LF<br>(tea, coffee & hot<br>chocolate GF only) | 25 x 115ml/£7.50            | 1 x 115ml drink                 | 30p               |

\* A serving is 200ml of thin fluid thickened to stage 2 custard consistency.

## B100. Thickeners for dysphagia 2.0

| Product  | Indication | Type   | Gluten Free (GF)/<br>Lactose Free (LF) | Net price/pack size        | Quantity per<br>serving    | Cost per serving* |
|--|------------|--------|--|----------------------------|----------------------------|-------------------|
| Thick and Easy®  | Foods      | Starch | GF & LF <sup>23</sup>                  | 225g/£4.93                 | 3 scoops (13.5g)           | 30p               |
|  |            |        | GF & LF <sup>23</sup>                  | 100 x 9g sachet/<br>£30.00 | 1 & 1/2 sachets<br>(13.5g) | 45p               |
|  |            |        | GF & LF <sup>23</sup>                  | 4.45kg/£ 82.56             | 3 scoops (13.5g)           | 25p               |
| Thicken Aid®   | Foods      | Starch | GF & LF                                | 225g/£3.71                 | 3 scoops (13.5g)           | 22p               |
|  |            |        | GF & LF                                | 100 x 9g sachet/<br>£22.40 | 1 & 1/2 sachets<br>(13.5g) | 34p               |
| Thixo-D®   | Foods      | Starch | GF & LF <sup>25</sup>                  | 375g/£7.15                 | 2.5 scoops (12.5g)         | 24p               |
| Please note THIXO-D® Cal-Free is <b>not</b> prescribable according to the ACBS |            |        |  |                            |                            |                   |
| Vitaquick®   | Foods      | Starch | No                                     | 300g/£6.87                 | 3 scoops (15g)             | 34p               |
|  |            |        | No                                     | 2kg/£37.93                 | 3 scoops (15g)             | 28p               |
|  |            |        | No                                     | 6kg/£98.22                 | 3 scoops (15g)             | 25p               |

\* A serving is 200ml of thin fluid thickened to stage 2 custard consistency.

- Thickeners should be prescribed by the tin as this is the most cost effective option rather than sachets or pre-thickened drinks. £2.3 million is spent on sachet thickeners or pre-thickened drinks annually in England (extrapolated from ePACT data November 2014 to January 2015).
- In addition to cost, the choice of thickener should be based on the individual patient preference regarding flavours and textures, the food and fluids should look appetising and taste palatable to encourage compliance and avoid dehydration. Gum-based clear thickeners tend to be preferred by patients as they are more palatable, stable and safe. This improves compliance and therefore reduces both waste and costs. Nutilis® Clear and Resource® ThickenUp Clear are examples of gum-based thickeners. Nutilis Clear is currently the least costly gum based thickener based on cost per serving.
- If patients in care homes have clear documented details of the consistency required in their patient record or management plan, consider if bulk prescribing would be appropriate to avoid waste and reduce costs.

## Summary

- Thickeners are indicated for the treatment of dysphagia, difficulty in swallowing, eating and drinking.<sup>5</sup> They act by slowing down the transit of food and fluids to allow the patient more time to co-ordinate the swallowing process safely. This helps to prevent the liquid or food from entering the lungs which can lead to serious complications such as chest infections and death due to choking or aspirational pneumonia.<sup>6</sup>
- The recommendation to prescribe a thickener should come from an appropriately trained healthcare professional, e.g. a Speech and Language Therapist. The choice of thickener should be based on the patient's degree of dysphagia, desired consistency required, the texture required, palatability and cost-effectiveness amongst other considerations.<sup>7,8</sup> Clear gum-based thickeners (Nutilis® Clear and Resource® ThickenUp Clear) are the preferred choice as they are the most palatable and safest. The most cost effective product is tins rather than sachets or pre-thickened drinks. Thickeners should be prescribed in appropriate quantities to avoid over-ordering leading to stockpiling and waste or under-ordering, which could put patients at risk, cause care homes to order mid-cycle and borrow from other residents. Bulk prescribing of thickeners could be considered for care homes if patients have clear documented details of the consistency required in their patient record or management plan to avoid waste and reduce costs.
- A patient's record or management plan should be reviewed to ensure it clearly documents the consistencies the patient is able to manage and duration of treatment as dysphagia can be a temporary condition. Consider adding directions for use based on the recommended consistency on the prescription to help patients and carers at home and allow transcription to Medicines Administration Record (MAR) charts. The patient's other medications should be reviewed to ensure they are suitable for a patient with dysphagia, discontinuation, alternative formulations or routes of administration should be considered. Liquid formulations may not be appropriate as they may also require thickening to enable the patient to take them.

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## Additional PrescQIPP resources



Briefing



Data pack

Available here: <http://www.prescqipp.info/resources/viewcategory/339-thickeners-for-dysphagia>

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