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## FEEDING AND SWALLOWING EXPERT REVIEW GROUP EXECUTIVE SUMMARY

### NOTICE:

**As of April 24, 2019, the decisions around food texture diets are not yet completed due to evolving information and feedback from IDDSI, other Canadian jurisdictions and from clinicians within WRHA. The shaded items are not final and should not be considered at the current time.**

### GOALS AND PURPOSE:

1. To update the literature from 2008, using evidence-based research to determine if practices re: texture modification and liquid consistency have changed since 2008.
2. To update the continuum of diet textures that accommodates the needs of the spectrum of adult clients/patients/residents in the WRHA, including individuals with dysphagia based on available evidence.

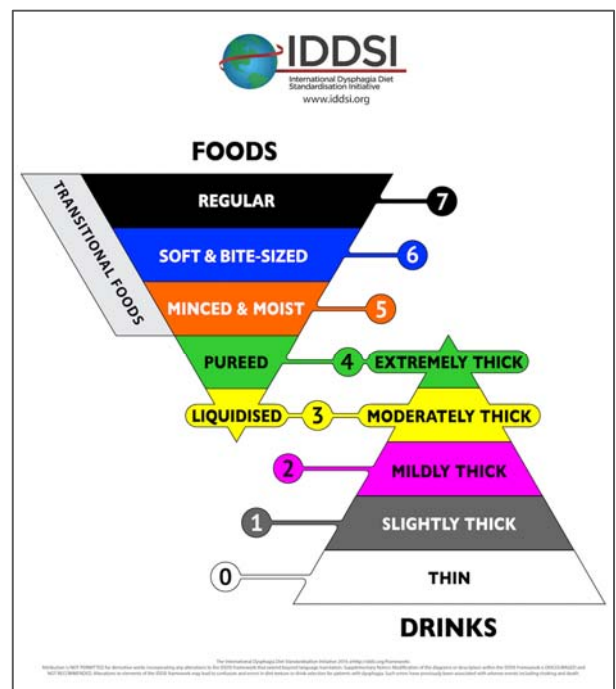
### Rationale for Texture Modification

The goal of diet texture modification is to improve safety and ease of swallowing food and liquid. It may also enhance nutrition status for people with dysphagia by providing a way to maintain nutritional needs orally. Not all people with dysphagia are receptive to modified textures and some may continue to eat and drink items that pose risks. 2,9. In a client-centered approach, balancing safety and quality-of-life, and including the individual/family in developing the care plan is paramount.

Use of standardized diet texture and liquid-modification classifications is critical in ensuring consistency and minimizing errors surrounding diet textures. Standardized terminology and definitions allow for consistent communication among health professionals, care providers, clients, family, researchers and industry partners. The International Dysphagia Diet Standardisation Initiative (IDDSI) is based on the most current evidence. The Feeding and Swallowing Expert Review Group recommends adoption of this framework.

### The IDDSI Framework:

Although food texture and liquid modification for dysphagia management occurs throughout the world, the terminology and definitions of these diets varies. To address this issue, the International Dysphagia Diet Standardisation Initiative (IDDSI) group was formed in 2012. After 3 years of work by this inter-professional group of experts, the IDDSI framework was established in November 2015, providing the most current evidence-based framework available. The framework consists of a continuum of 8 levels (0-7), where drinks are measured from Levels 0-4, while foods are



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measured from Levels 3-7. It is important to note that for levels 3 and 4, both liquids and solids may carry the same number and colour designation. The [IDDSI website](#) provides detailed descriptors, testing methods, and outlines the evidence that was reviewed in developing the framework.

**Benefits of the IDDSI framework:**

- The framework is based on a comprehensive review of worldwide standards, available evidence, and broad stakeholder feedback from around the globe.
- It is culturally sensitive
- It is measurable
- It includes objective, simple testing methods, which support quality assurance.
- It is applicable to individuals of all age groups in all care settings.
- It has received buy-in from the Canadian food industry, with labels for thickened liquids that are IDDSI-compliant anticipated in January 2019.
- The framework is being rolled out nationally and provincially, thereby supporting standardization in terminology and diet criteria within and across jurisdictions.

**Adoption of IDDSI in the WRHA:**

The WRHA Feeding and Swallowing Expert Review Group has reviewed the IDDSI Framework and recommends moving toward adopting the IDDSI Framework, with implementation of most but not all diets within the framework. The need for additional diets outside the framework is yet to be determined.

Diet Category Recommendations (numbers in parentheses reflect IDDSI levels):

Proposed 2019 WRHA Diet Compendium	Current WRHA Diet Compendium (2008)	Comments
Standard/Regular (7)	Standard	IDDSI terminology is “Regular, Level 7”
Easy to Chew	Soft	Subset of IDDSI “Regular, Level 7”
	Soft / Minced	
TBD	Minced	Non IDDSI diet may be needed
Minced & Moist (5)	Total Minced	
Pureed (4)	Pureed	IDDSI level 4 (Pureed Foods and Extremely Thick Drinks), IDDSI level 3 (Liquidised Foods and Moderately Thick Drinks) are presented on the IDDSI framework as connected because the flow property and behaviour is similar. It does not mean that
Liquidized (3)	Blenderized	
Moderately Thick (3)	Honey Thick	
Mildly Thick (2)	Nectar Thick	

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		they need to be prescribed together. Clinicians need to assess the patient's ability to manage foods and drinks independently. For example: a patient may require liquids thickened to Level 3 but can manage minced and moist foods Level 5. In this case, they would be prescribed Level 5 Minced & Moist, Level 3 Moderately Thick.
TBD - No thin liquids mixed with solids	No thin liquids mixed with solids	Non-IDDSI diet
TBD - Finger Foods	Finger Foods	Non-IDDSI diet

The following IDDSI diets are **not** included in the revised WRHA compendium, with rationale provided:

- Level 6, Soft & Bite Sized: This level refers to foods that can be mashed/broken down with pressure from a fork, spoon, or chopsticks and are chopped into pieces no larger than 1.5 cm. Ease in implementation is supported through production of food products that meet the requirements of this diet (e.g. frozen vegetables no larger than 1.5 cm). Once industry produces foods which meet the requirements of this category implementation of this diet may be considered.
- Level 4, extremely thick: This diet is rarely used, and liquids are not available from industry that meet this requirement. It is a nutritionally inadequate diet. When required, it may be provided via exception (e.g. exclusion of liquids).
- Level 1, Slightly thick: This category is intended for use in the pediatric population. Furthermore, industry does not provide slightly thick liquids for the non-pediatric population. Mildly thick liquids are of a thinner consistency than the current nectar thick liquids. Therefore there is the potential that mildly thick liquids will meet the need for a slightly thinner consistency than the current nectar thick liquid.
- Level 0, Thin: This category is the default liquid viscosity, and will be provided through an absence of a liquid-consistency order or a discontinuation of a thick liquid order. Therefore, no order for liquid viscosity means no restriction in any liquids provided (i.e. all liquid viscosities are allowed). When a thick liquid diet is discontinued, an order to communicate this change will be written on the order sheet. The majority of individuals do not require modification in viscosity of liquids (approximately 90% of residents in LTC facilities do not require this modification). Requiring the addition of "thin" liquids to all diet orders will add unnecessary time for implementation of diet orders and create confusion.

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#### Additional Recommendations:

1. Requirement for Non-IDDSI Diets within the WRHA needs to be determined.
2. Consideration of nutritional content of texture modified foods is required with the goal of providing comparable nutritional value as the standard diet. Where challenges exist in regards to nutritional content, fortification should be considered.
3. Appropriate liquid consistencies may be provided by ready to use commercially thickened products, which are advantageous as they provide a consistent product. Where thickened liquids are being prepared on-site, care should be taken to facilitate the most appropriate thickness level. This can be achieved by following IDDSI guidelines/directions "".
4. A nutritionally adequate and consistent texture modified diet requires the use of specially developed, standardized recipes.
5. Monitoring hydration status is important. If appropriate, consider additional ways to increase liquid intake, for example, liquids between meals program and/or alternate sources of liquid. Consideration of aspiration risk and hydration status is important in the determination of thickened liquids.

#### Practice Changes:

Practice changes will be considerable including:

1. **New terminology.** IDDSI defines diets by name, IDDSI number designation, and colour classification. This three part identification reduces the risk of error and is a means to identify different diets. The IDDSI website @ [www.iddsi.org](http://www.iddsi.org) provides information to assist with practice change.
2. **New methods for identifying and testing food and liquid categories.** Testing methods are simple and cost-effective enough to be used in all care settings. Staff and family will have increased capacity to do on-site testing as to whether a food or liquid is compliant with a given category.
3. **Changes in labels from Industry.** Manufacturers of foods and liquids intended for IDDSI diets are reformulating products and developing educational resources to follow IDDSI standards in 2019 for liquid products.

#### Anticipated Impact:

Adoption of a new diet texture framework will result in changes in most of the diet names and some of the criteria within those diets; therefore **there will be an impact in all areas where meals and snacks are prepared and provided.** All members of the health care team will be required to have some level of familiarity with the new framework. It will particularly impact those preparing and serving food (food service, health care aids, recreation staff, nurses, volunteers) and those assessing and making nutrition and diet texture recommendations (dietitians, speech-language pathologists). Familiarity of the new terminology and descriptors will be critical in ensuring clients receive the prescribed diet.

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### **Evidence Review:**

This evidence is not all inclusive. This review contains select relevant evidence pertinent to the use of diet texture modifications in providing care to adults with dysphagia, including nutritional considerations, as well as providing the rationale for recommended diets.

### **Dysphagia**

Conservative estimates suggest that dysphagia affects approximately 8% of the world's population and 30-60% of the institutionalized elderly population (A Novel Dysphagia Diet Improves the Nutrient Intake of Institutionalized Elderly. Journal of the American Dietetic Association. Oct. 2009. Vol 106. Issue 10).

Dysphagia is associated with malnutrition, dehydration, aspiration, aspiration pneumonia and potentially death (9). It may also have a negative impact on social participation in eating and drinking and quality of life in general.

Research has linked dysphagia to under nutrition(11,32) and there is likely a bidirectional relationship between malnutrition and dysphagia (8).

Dysphagia is associated with many diseases and conditions including stroke, head and neck cancer and progressive neurological disorders (e. g., Parkinson's Disease, Multiple Sclerosis, Dementia, etc.).

Physiological changes with age (e. g., tooth loss, oral motor weakness, decreased salivation) may contribute to swallowing difficulties. Dysphagia becomes increasingly common with age and the frail elderly.

The modification of food texture and liquid thickness has become a cornerstone of dysphagia management.

### **Chewing**

Poor dentition is a common reason for use of texture modified foods. It is estimated that 44% of older adults have some level of dentition problems that influence consumption of food (24,28).

Inefficient chewing can be a choking risk. Foods require sufficient chewing strength and stamina to ensure the food is adequately broken down to avoid choking. Denture wearers reach only 25% of dentate chewing performance and chewing efficiency of dentures is less than one-sixth that of subjects with natural dentition.

In a small study that looked at the impact of dentures on chewing, swallowing and choking, it was shown that more than 80% had chewing difficulties and 40% reported swallowing difficulties (3).

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Individuals who wear dentures have a different oral experience than those with teeth. Intact teeth are sensitive to vibration, in addition to force and pressure (7). This tactile sensation allows us to appreciate crisp and crunchy food. A loss in this specific tactile sensation impacts on the perception of the force required for chewing.

Reduced dentition may affect nutritional adequacy by limiting variety and palatability of foods.

### **Nutritional Value Texture Modified Foods**

Relatively little research has been conducted on how to modify the texture of foods while preserving sufficient nutritional and sensory quality, on the prevalence of undernutrition.

Dahl et al. (2007) directly analyzed pureed foods from 20 facilities in two provinces and found an inadequacy and lack of consistency in protein content across facilities and between provinces. This demonstrates that system level differences (e.g. provincial standards) as well as facility level differences (e.g. recipes, training, preparation techniques) affect the nutritional quality of texture modified foods (12,24).

### **Hydration/Thickened Liquids**

Through a systematic review conducted by the IDDSI committee, it was determined that thicker liquids:

- reduce the risk of penetration and aspiration,
- increase residue in the pharynx.
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IDDSI reports that the available literature was not able to support the delineation of specific viscosity boundaries, pointing to an urgent need for quality research to determine thickness levels. The numbers of levels of drink thickness included in the framework is recommended for best practice and is based on clinical experience, stakeholder consensus and expert opinion.

Thin liquids such as water pose safety challenges for people with dysphagia because they flow quickly (11,27,34) Thickened liquids are frequently recommended with the goal of slowing down the flow of liquids to allow more time for airway closure (34)

Small amounts of aspiration are normal in healthy adults. Aspiration alone, whether related to dysphagia or not, does not cause aspiration pneumonia (Langemore, 1998). Multiple risk factors including dependency for feeding, mobility, oral care and others have been identified as important contributors to the development of aspiration pneumonia.

Several studies showed a heightened risk of post-swallow residue in the pharynx for liquid with high viscosities. This is an important clinical challenge in terms of identifying suitable and safe consistencies for patients with dysphagia; namely that of identifying liquids that are thick enough to be swallowed safely while avoiding the pitfall of post swallow residue (34). Clinically, however, it may be difficult to determine whether or not aspiration is occurring and whether or not there is a benefit to thickening liquids. Silent

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aspiration, common in some progressive neurological disorders such as Parkinson's Disease, may be occurring but is not detected during a clinical swallowing assessment.

Use of thickened liquids reduces videofluoroscopic evidence of aspiration in older adults with dementia (34), but does not reduce the 3-month risk of pneumonia in the same population.

Use of thickened liquids has also been linked to a higher incidence of dehydration, urinary tract infection and fever.

### **Acceptance of Modified Foods and Liquids**

Low acceptability and resulting poor adherence with modified foods and liquids can contribute to increased risk of inadequate nutrition.

Although taste is paramount, appearance is also believed to influence consumption and thus nutrient intake -- if the food is visually appealing it will be perceived more positively by staff, family and persons with dysphagia.

### **Feeding Independence**

Dependence with feeding poses a risk for aspiration and related complications in patients with dysphagia due to factors such as rapid and uncontrolled presentation of food by feeders.

Environmental modifications such as reducing noise levels, increasing lighting and removing extraneous, distracting utensils may aid in patient feeding independence.

Prescription of adaptive equipment like cups without rims and angled utensils may be necessary to aid in feeding dependence.

Provision of verbal, visual and or tactile cues by staff may assist a patient to self feed at least part of the meal. Consider seating arrangements, Patients who require these cues may have more success self-feeding and may consume more when paired with more independent table mates.

### **Social, Psychological and Emotional Aspects of the Dining Experience**

Mealtime is a social experience. It is important to consider how dysphagia and or self-feeding challenges impact a patient's or resident's enjoyment of meals. Patient embarrassment either with the texture of their food or their need for assistance may reduce oral intake or lead to social isolation (21, 24, 25, 29). Eating with others in a calm relaxing environment maximizes swallowing safety, consumption of food and enjoyment of meals.

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