# IDDSI: Challenges and Troubleshooting

Navigating, Implementing and Understanding IDDSI

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### Disclosure: Karen Sudders MS, RDN, CSO, LDN

**Relevant Financial Relationship** 

I receive a salary from Medtrition Inc as the Director of Nutrition





# Objectives





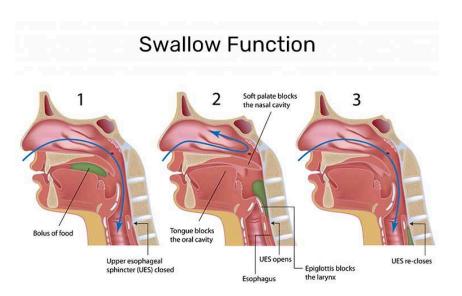
## What is Dysphagia

- Dysphagia is the medical term to describe difficulty in swallowing food and/or drink. A swallowing problem may arise as a side effect of many conditions.
- It is typically caused by an impairment of the epiglottis muscle which controls the flow of air to the lungs and food & liquids to the stomach.



# Swallowing Dysfunction

- Due to a weakness of the mouth and throat muscles there is a risk the food or beverages may go into the lungs instead of the stomach.
  - Aspiration increases the risk of pneumonia
  - It can be silent or overt
  - Can cause damage to the lung if left untreated





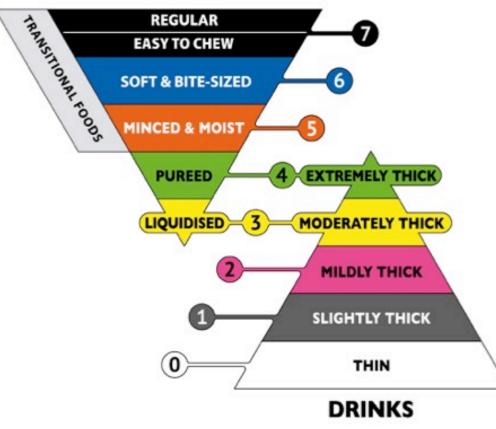
## Complications of Dysphagia

- Malnutrition and Weight Loss
- Impaired Immune System Function
- Dehydration
  - Constipation and Urinary Tract Infection
- Increase in Skin Breakdown





#### FOODS



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# Liquid Challenges

• Historically measuring viscosity was far too complicated for facilities to replicate

• There was a need for a simple, validated tool to reliably measure liquid thickness that was both cost effective and easily replicated in all care settings



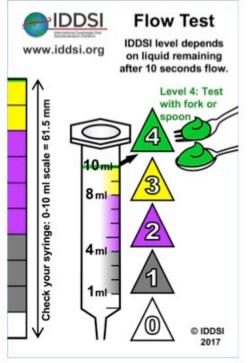
### **IDDSI Flow test** van Vliet et al. (2002), Food Quality and Preference, 13, 227-236; Kutter et al. (2011), 42: 217-227

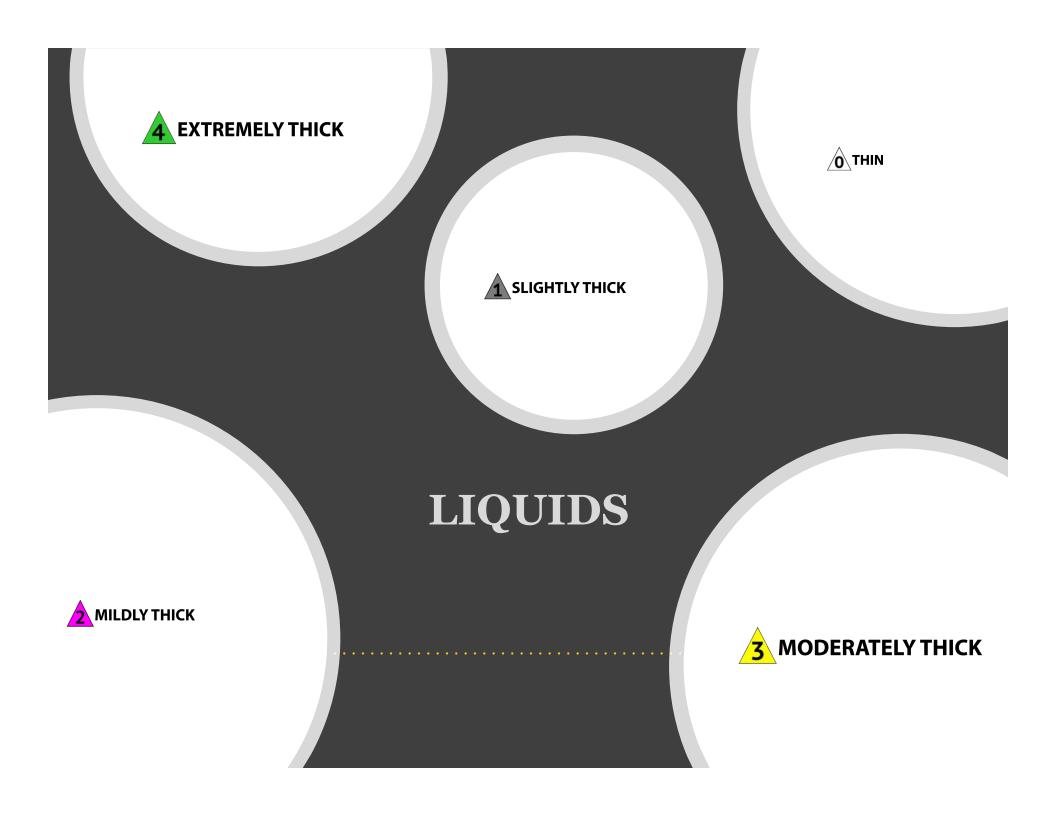
#### Similar to Posthumus Funnel used in dairy industry to measure liquid thickness

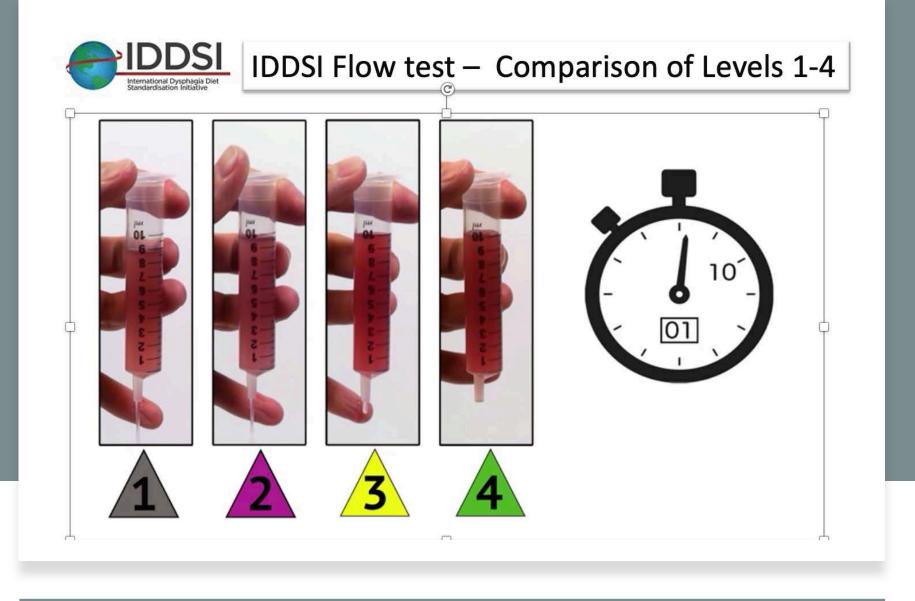
60 mm

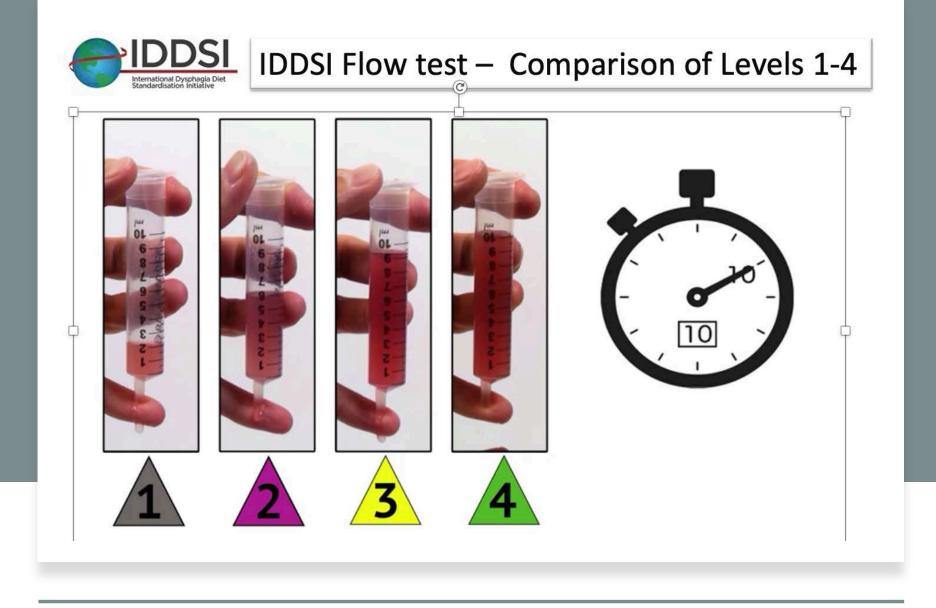
Schematic of Posthumus Funnel adapted from van Vliet et al. (2002) "Geometry allows for both shear and elongation that more closely matches flow conditions within the oral cavity"

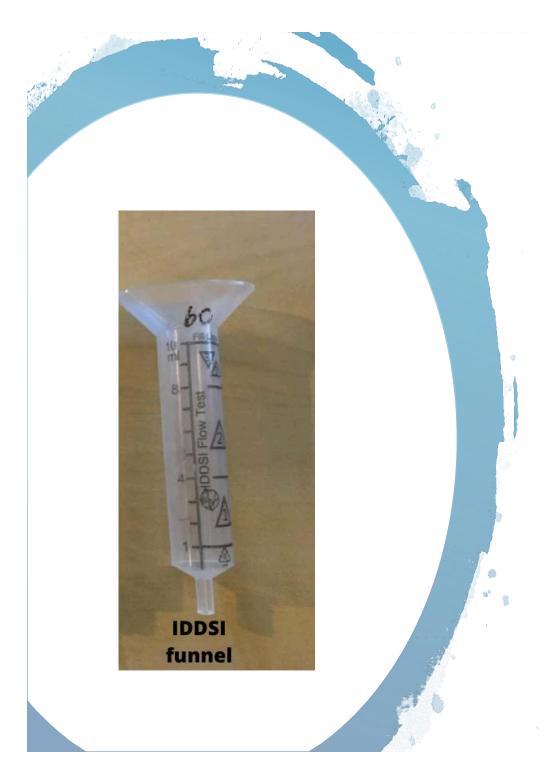
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### IDDSI Prototype Funnel

• Not all 10 mL syringes are created equal. There are a few that are recommended in the US at this time however IDDSI working on production of an IDDSI funnel to assist in the testing process. They encountered some challenges when trying to mass produce but are continuing to explore options to move forward.\*

This will soon be called...



### This will soon be called...

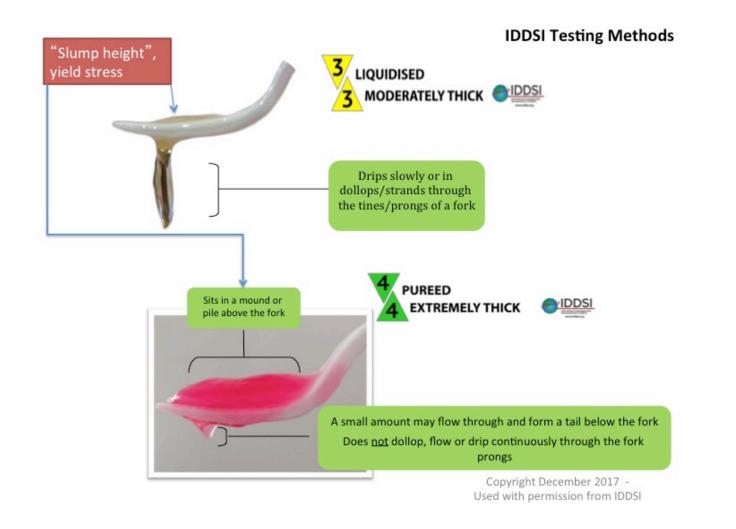
This will soon be called... SOFT & BITE SIZED

FOODS

This will soon be called... **EASY TO CHEW** 

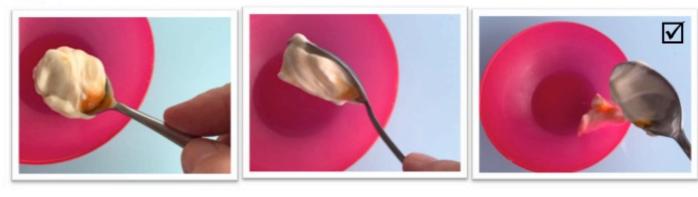






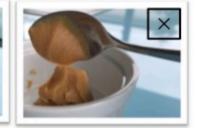


### **IDDSI Spoon Tilt Test**









IDDSI Spoon Tilt Test determines Cohesion (ability to hold together) and

For safety the bolus should be cohesive enough to hold





Product or food tested			
Heating method(s)			
Temperature when tested at:	□ time of service	15 mins after serving	30 mins after serving

#### Instructions:

Intended for

- Level 4 Pureed critical tests include Appearance + Fork Drip Test + Spoon Tilt Test OR if these are not available Finger Test. Chopstick test not appropriate.
- The food item must pass or meet criteria for any row marked \*.

Tests		Meets criteria at		
	Time of service	15 mins	30 mins	
Critical: Appearance		after serving	after serving	
* No lumps	□ Yes □No	□ Yes □No	□ Yes □No	
Critical: Fork Drip Test (metal dinner fork needed)				
* Food sits in a mound above dinner fork (a small amount may form a tail below the dinner fork)	□ Yes □No	□ Yes □No	□ Yes □No	
* Does <u>not</u> drip or flow continuously through dinner fork	□ Yes □No	□ Yes □No	□ Yes □No	
Critical: Spoon Tilt Test (teaspoon needed)				
* Holds shape on teaspoon	□ Yes □No	□ Yes □No	□ Yes □No	
* Food slides off teaspoon with little food left on teaspoon (i.e. <b>not</b> sticky)	□ Yes □No	□ Yes □No	□ Yes □No	
May spread or slump slowly on a flat plate	□ Yes □No	□ Yes □No	□ Yes □No	
Alternative if Fork or Spoon not available: Finger Test				
* Hold a sample on fingers without it dripping through continuously	□ Yes □No	□ Yes □No	□ Yes □No	
* Food slides smoothly and easily between fingers	□ Yes □No	□ Yes □No	□ Yes □No	
Food may leave noticeable residue on fingers but is <b>not</b> sticky	□ Yes □No	□ Yes □No	□ Yes □No	
Preferred but not critical: Fork Pressure Test				
Prongs of dinner fork make clear pattern on surface OR food briefly retains fork indentation marks	□ Yes □No	□ Yes □No	□ Yes □No	
OVERALL CONCLUSION: Does the sample meet the criteria for Level 4 Pureed?	□ Yes □No	□ Yes □No	□ Yes □No	

Notes: \* A puree needs to be able to be put in the mouth and swallowed whole. No chewing and no bolus formation skills should be needed to eat this consistency.

.... \* If you can pick the sample up in your hands and could bite a piece of it (e.g. moulded puree), the sample is not a puree and poses a choking risk.

\* Please see also http://iddsi.org/framework/food-testing-methods/









### **Texture Testing**



#### **IDDSI Fork Test**

The slots/gaps between the tines/prongs of a standard dinner fork typically measure 4 mm

Pediatrics 2mm; Adults 4mm

Compliance for particle size measurement (4mm)



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IDDSI tests – Level 5 Minced & Moist demonstration video

## Fork Pressure Test



¢



#### Testing intended for



Product or food tested			
Heating method(s)			
Temperature when tested:	□ at time of service	☐ 15 mins after serving	□ 30 mins after serving

#### Instructions:

• Level 5 Minced & Moist critical tests include Appearance + Fork Pressure Test + Spoon Tilt Test OR if these are not available Finger Test.

• For particle size: food intended to mimic a 'chewed bolus' – must be equal to or less than 4mm width and no longer than 15mm in length (adults); Equal to or less than 2mm width and no longer than 8mm length (pediatrics).

• The food item must pass or meet criteria for any row marked \*.

Tests		Meets criteria at		
	Time of service	15 mins	30 mins	
Critical: Appearance		after serving	after serving	
* Lumps less than or equal to 4mm (adults); 2mm (pediatrics)	□ Yes □No	□ Yes □No	□ Yes □No	
* No separate thin liquid	□ Yes □No	□ Yes □No	□ Yes □No	
Critical: Fork Pressure Test (metal dinner fork needed)				
* Food can be easily mashed with little pressure from a dinner fork	□ Yes □No	□ Yes □No	□ Yes □No	
[pressure should <u>not</u> make thumb nail blanch to white]				
* Easily separates and comes through prongs of a dinner fork	□ Yes □No	□ Yes □No	□ Yes □No	
Critical: Spoon Tilt Test (teaspoon needed)				
* Holds shape on teaspoon	□ Yes □No	□ Yes □No	□ Yes □No	
* Food slides off spoon with little food left on teaspoon (i.e. <u>not</u> sticky)	□ Yes □No	□ Yes □No	□ Yes □No	
May spread or slump slowly on a flat plate	□ Yes □No	□ Yes □No	□ Yes □No	
Alternative if Fork or Spoon not available: Finger Test				
* Small soft smooth rounded particles can be easily squashed between fingers	□ Yes □No	□ Yes □No	□ Yes □No	
* Food feels moist and will leave fingers wet	□ Yes □No	□ Yes □No	□ Yes □No	
Optional: Chopstick Test				
Chopsticks can scoop or hold this texture if food is moist and cohesive	□ Yes □No	□ Yes □No	□ Yes □No	
OVERALL CONCLUSION: Does the sample meet the criteria for Level 5 Minced & Moist?	□ Yes □No	□ Yes □No	□ Yes □No	

Notes: \* Minimal chewing should be needed to eat this food texture (e.g. tongue force should be able to squash/break food).

\* Please see also http://iddsi.org/framework/food-testing-methods/









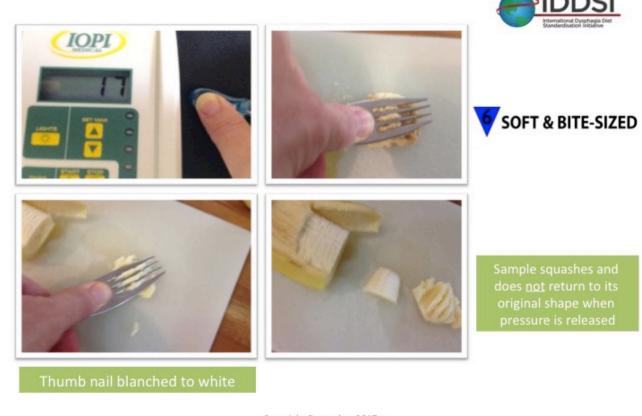
### **Texture Testing**

#### **IDDSI Fork Pressure Test:**

- A fork can be applied to the food sample to observe its behavior when pressure is applied.
- Pressure applied to the food sample has been quantified by assessment of the pressure needed to make the thumb nail blanch noticeably to white.



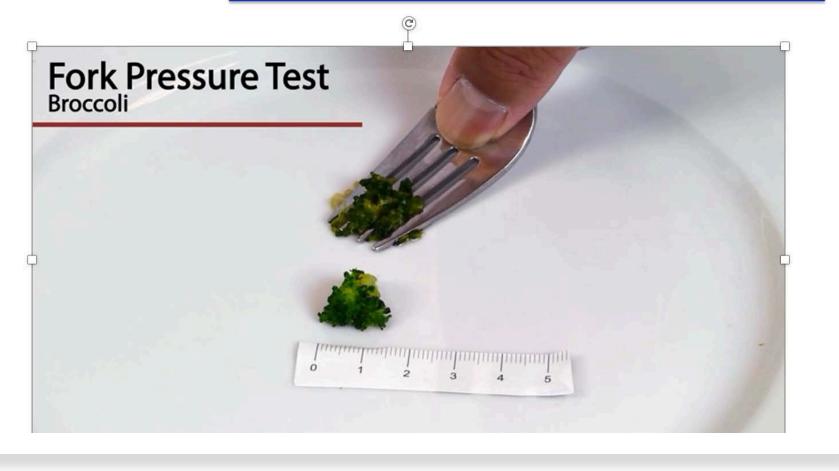
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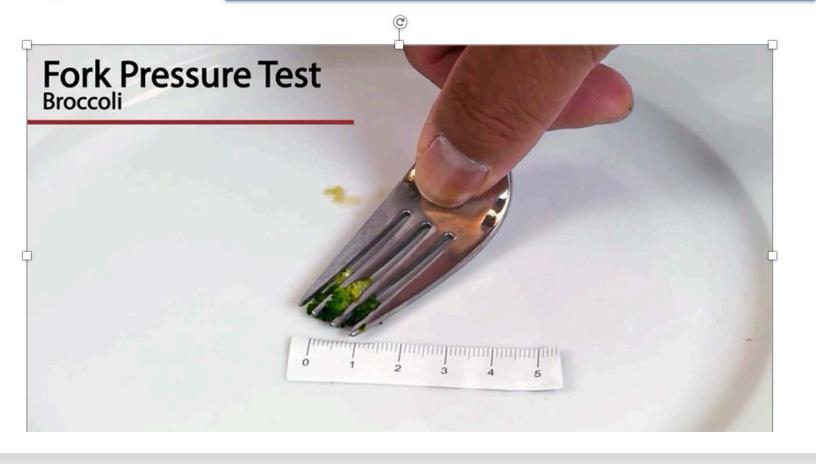


IDDSI tests – Level 6 Soft & Bite-Sized demonstration video – particle size





IDDSI tests – Level 6 Soft & Bite-Sized demonstration video – particle size







Product or food tested			
Heating method(s)			
Temperature when tested at:	□time of service	☐15 mins after serving	□B0 mins after serving

#### Instructions:

Testing intended for

- Level 6 Soft & Bite-Sized critical tests include Appearance + Fork/Spoon Pressure Test OR if these are not available Finger Test.
- For particle size: food intended to mimic a 'bite of food' must be equal to or less than 15mm x15mm (adults); equal to or less than 8mm x 8mm (pediatrics).
- The food item must pass or meet criteria for any row marked \*.

Tests	Meets criteria at		
	Time of service	15 mins	30 mins
Critical: Appearance		after serving	after serving
* Pieces less than or equal to 15mm x 15mm (adults); 8mm x 8mm (pediatrics)	□ Yes □No	□ Yes □No	□ Yes □No
* No separate thin liquid	□ Yes □No	□ Yes □No	□ Yes □No
Critical: Fork/Spoon Pressure Test (metal dinner fork or teaspoon needed)			
* When pushing down on a 15mm x 15mm sample with a dinner fork or teaspoon, with enough pressure that the thumb nail turns white, the food can be squashed and will not return to original shape	□ Yes □No	□ Yes □No	□ Yes □No
* Food can be separated into smaller pieces using pressure from a dinner fork or teaspoon held on its side	□ Yes □No	□ Yes □No	□ Yes □No
Alternative if Fork or Spoon not available: Finger Test			
* When pushing down on a 15mm x 15mm sample using thumb, with enough pressure that the thumb nail turns white, the food can be squashed and will not return to original shape	□ Yes □No	□ Yes □No	□ Yes □No
* Food feels moist	□ Yes □No	□ Yes □No	□ Yes □No
Optional: Chopstick Test			
Chopsticks can break 15mm x 15mm pieces into smaller pieces	□ Yes □No	□ Yes □No	□ Yes □No
OVERALL CONCLUSION: Does the sample meet the criteria for Level 6 Soft & Bite-sized?	□ Yes □No	□ Yes □No	□ Yes □No

Notes: \* Chewing ability is needed for this texture, although biting is not required. Pieces should be 'bite-sized' at time of serving.

\*\*\*\*\* Please see also http://iddsi.org/framework/food-testing-methods/ \*\*\*







# Dysphagia vs Chewing Problems

#### Dysphagia

- Related to swallowing problems
- May require modified texture foods
- May require modified consistency liquids
- Left untreated could cause life threatening complications

#### **Chewing Problems**

- Related to chewing problems
- May require modified texture foods
- Does not require modified consistency liquids
- May result in weight loss and possibly malnutrition but usually not life threatening



## Level 7 Regular: Easy to Chew

- Subcategory identified Level 7 Regular: Easy to Chew.
- Designed to meeting the needs of those not suffering from dysphagia but may benefit from softer foods
- Additional details will be available shortly regarding testing method
- As a preview, here is some information about Level 7 Regular Easy to Chew:
  - It is not a "new level" in the IDDSI framework but is considered a subcategory of Level 7
  - This level is suitable for individuals who have the ability to regulate bite size and their pace of eating and do not exhibit mealtime behaviors that might increase their choking risk
  - Foods should be soft and tender and can be cut or separated easily with the side of a fork or spoon.
  - Foods do not need to be cut or presented in any specific particle size.





#### Testing intended for



Product or food tested			
Heating method(s)			
Temperature when tested at:	□ time of service	□ 15 mins after serving	□ 30 mins after serving

#### Instructions:

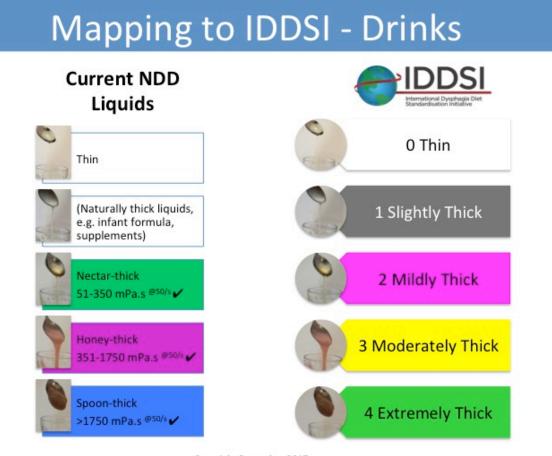
- Level 7 Easy to Chew critical tests include Fork/Spoon Pressure Test OR if these are not available Finger Test.
- The food item must pass or meet criteria for any row marked \*.
- Meets criteria means answers 'Yes' to all critical tests.

Tests		Meets criteria at		
Critical: Fork/Spoon Pressure Test (metal dinner fork or teaspoon needed)	Time of service	15 mins after serving	30 mins after serving	
<ul> <li>Must be able to break food apart easily with just the side of a fork or spoon</li> </ul>	□ Yes □No	□ Yes □No	□ Yes □No	
* When pushing down on a 15mm x 15mm sample with a dinner fork or teaspoon, with enough pressure that the thumb nail turns white, the food breaks apart, can be squashed and will not return to original shape	□ Yes □No	□ Yes □No	□ Yes □No	
Alternative if Fork or Spoon not available: Finger Test				
* Must be able to break food apart easily with fingers	□ Yes □No	□ Yes □No	□ Yes □No	
* When pushing down on a 15mm x 15mm sample using thumb, with enough pressure that the thumb nail turns white, the food can be squashed and will not return to original shape				
* Food feels moist	□ Yes □No	□ Yes □No	□ Yes □No	
Optional: Chopstick Test				
Chopsticks can easily break Easy to Chew food into smaller pieces	□ Yes □No	□ Yes □No	□ Yes □No	
OVERALL CONCLUSION: Does the sample meet the criteria for Level 7 Easy to Chew?	□ Yes □No	□ Yes □No	□ Yes □No	

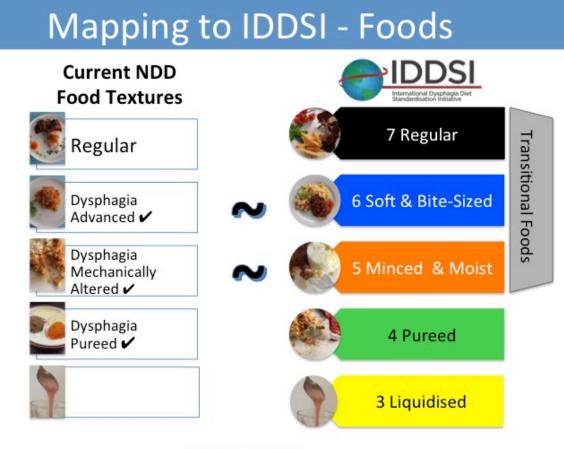
Notes: \* Some biting ability may be required for this texture. Chewing ability is needed for this texture.

\* Please see also http://iddsi.org/framework/food-testing-methods/





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## Challenges with IDDSI

With change comes resistance

Clinical Changes
Practical Changes
Industry Changes
Process Changes





- Description vs Prescription
- Diet Identification Change
  - Who needs to know
  - Front Line
    - RDs, SLPs, DTRs, Food Service
  - Secondary
    - Nursing, CNAs, Physicians etc



Clinical Change



- Identification
  - How will you identify these changes in your system
- Education
  - How will you educate those impacted
- Understanding
  - Who else should be educated on the change
- Order writing
  - EHR and Menu ordering

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### Practical Change

#### **IDDSI** Abbreviations



7 Regular	RG7
6 Soft & Bite-Sized	SB6
5 Minced & Moist	MM5
4 Pureed	PU4
4 Extremely Thick	EX4
3 Liquidised	LQ3
3 Moderately Thick	МОЗ
2 Mildly Thick	MT2
1 Slightly Thick	ST1
0 Thin	TN0

Abbreviations suitable for use with Foodservice Computer Software

#### About the IDDSI abbreviations...

The IDDSI abbreviations have been checked against and are in accordance with the advice from the Institute for Safe Medical Practices List of Error-prone abbreviations, symbols and dose designations.

Potentially confusing abbreviations have been avoided (e.g. MD = Medical Doctor; ML = millilitre)

Numbers occur at the end of the abbreviations to ensure that they are not confused for 'number of meals or drinks ordered'.

Abbreviations retain the core of the IDDSI label - e.g. SB6 acknowledges both 'Soft' &'Bite-Sized'.

IDDSI is grateful to the Foodservice Computer Software, hospital, aged care and health professional stakeholders who reviewed and provided feedback on the abbreviations.

International Dysphagia Diet Standardisation Initiative www.iddsi.org

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Industry Change

- Labeling efforts
  - Not required but encouraged
- IDDSI self governed
  - No approved 3<sup>rd</sup> party testing affiliated with IDDSI
- Dual labeling
  - What does this mean



## Example of Dual Labels







\*Not an exhaustive list







Also suitable for MINCED & MOIST SOFT & BITE-SIZED



## Process Change

- Current Practice is generalized
  - Category testing subjective
- IDDSI is measurable
  - Category testing is objective



### EXAMPLE

Mechanical Soft, Ground	Minced and Moist Level 5
<ul> <li>Foods should be soft, moist and cohesive in texture</li> <li>Finely chopped meats</li> <li>Foods should be soft</li> <li>Vegetables should mash easily</li> <li>Sauces and gravies should be added</li> </ul>	<ul> <li>Particle size 4x4mm width and no more than 15mm in length</li> <li>Easily mash able with fork without blanching thumbnail</li> <li>Holds shape on spoon without rolling off</li> </ul>
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### Changes in consistency with time and temperature

#### Key takeaways

- IDDSI testing should be conducted at intended temperature of service
  - Focus on maintaining appropriate serving temperatures
  - Minimize turnaround time
  - Evaluate preparation methods to minimize hold holding times
    - Determine best practice to maintain moisture
      - Delivery carts
      - Turnaround time
      - Prep Methods



Facilities struggle with MM5 and SB6

### Key Takeaways

- Evaluate current NDD practice
  - Where do your current menus and recipes align?
  - What gaps do you see in service
  - Evaluate service needs
- How many dysphagia patients are you serving each meal
  - Evaluate opportunities for service standard alignment
- Do you need all 7 levels of food and beverages?
  - What convenience products are available to better serve this population

## Oral Nutrition Supplements

### Key takeaways

- Evaluate current practice compared to IDDSI standards
  - Where does your formulary currently align
  - Some oral nutrition supplements do not stay in suspension when thickened, particularly the clear supplements
- Evaluating where your gaps in service may be
  - Discuss fortification vs supplementation
  - Review availability of supplements that already align with IDDSI standards



## Bread and IDDSI

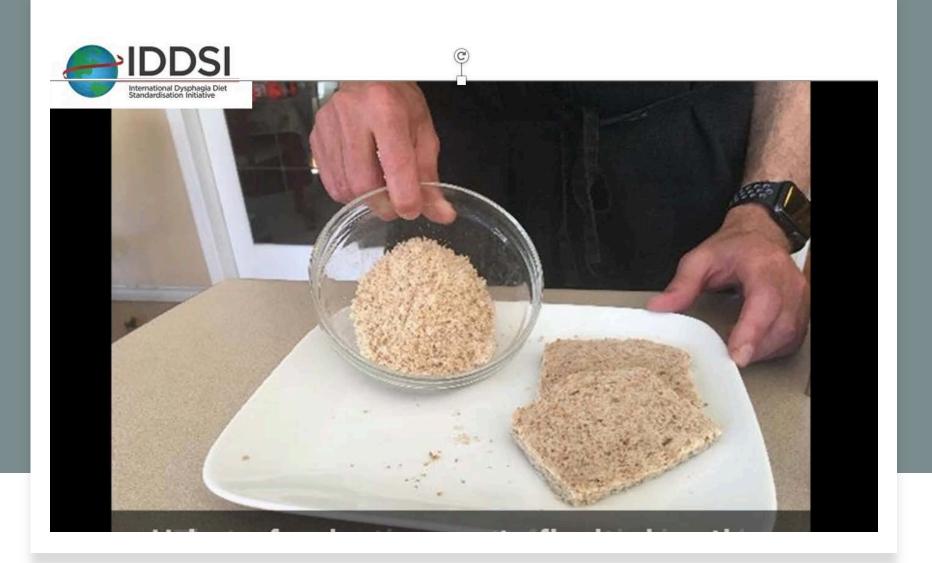
#### FAQ Category: Foods; Choking

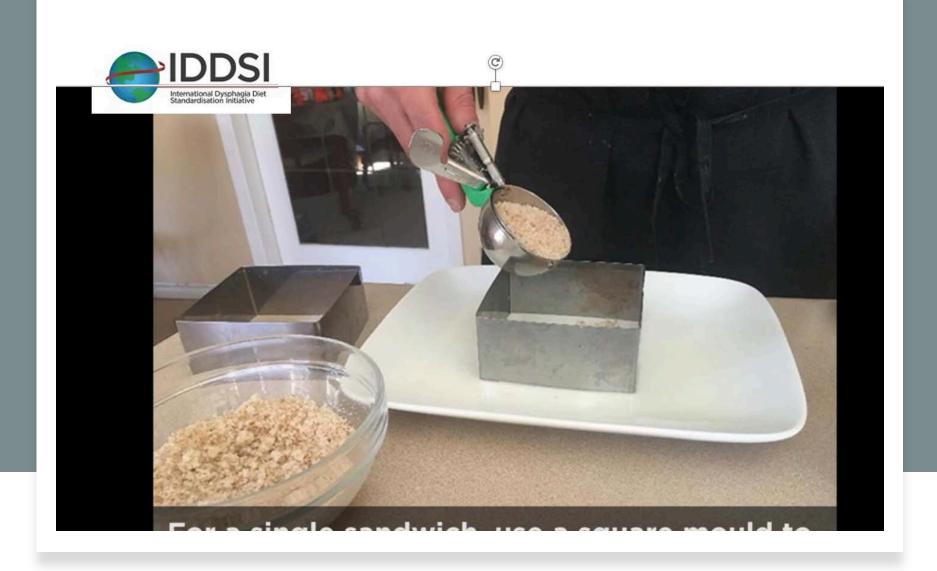
### Q: Bread provides an opportunity to offer patients variety. Why is it considered a choking risk?

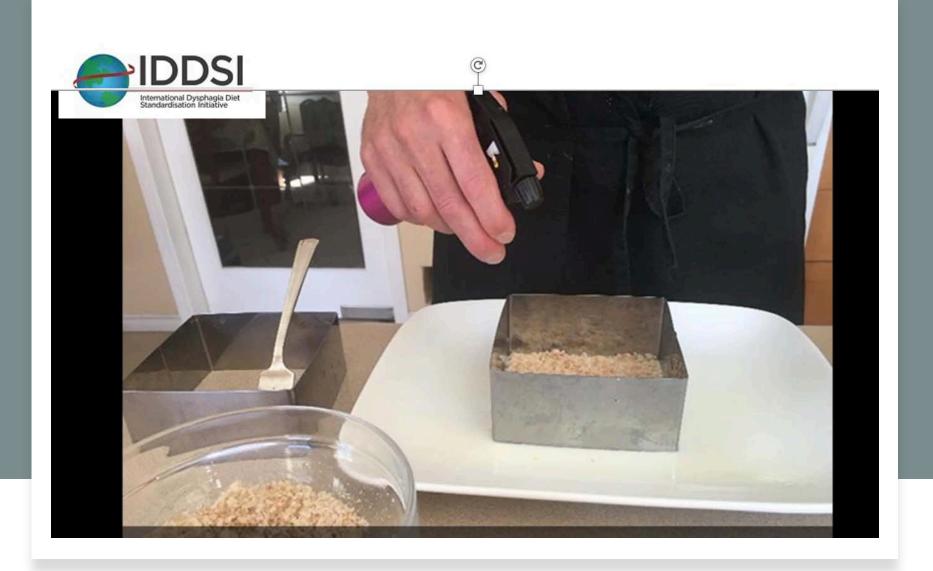
A: As a general rule bread products are considered a regular food texture (Level 7). This decision is based on the choking literature where bread is often identified as a cause of choking (Irwin et al., 1977; Ekberg & Feinberg, 1992; South Australia Coronial Inquest, 1997; Wick et al., 2006; Berzlanovich et al., 1999, 2005; Food Safety Commission of Japan, 2010; Licea, 2016). Bread and sandwiches require the ability to both bite and chew. Although bread looks and feels soft, it cannot be easily mashed or broken down into particles of 4mm or smaller due to its fibrous nature. In fact the number of chewing strokes, chewing strength and stamina required to make bread swallow-safe are about the same as those required to chew and swallow peanuts safely (Hoebler et al., 2000; Koyama et al., 2003). Individuals who tire easily while chewing may find bread difficult to chew to a small enough size to be swallow-safe. Bread also requires softening with saliva for effective chewing (Hoebler et al., 2000). For individuals with dry mouth (e.g. medication side effects, post radiotherapy etc.) bread is often not adequately wetted for swallowing resulting in food sticking in the throat. Bread does not dissolve when wet but does become sticky. Sticky or adhesive foods are also considered a choking risk (Irwin et al., 1977; Ekberg & Feinberg, 1992; Wick et al., 2006; Berzlanovich et al., 1999, 2005). The ability to safely manage bread and sandwiches should be assessed on a case-by-case basis by a dysphagia specialist.



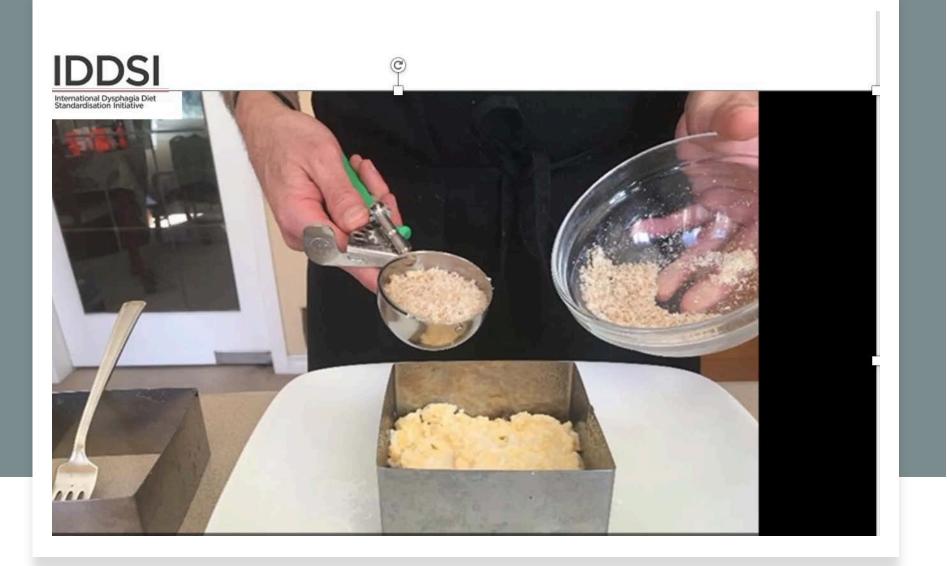
### Steps to Preparing a Minced & Moist (IDDSI Level 5) Sandwich

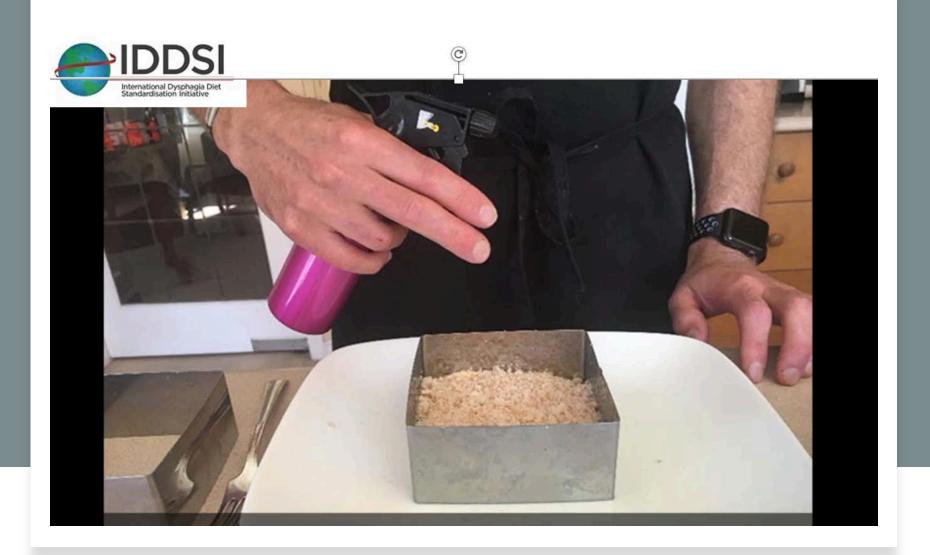


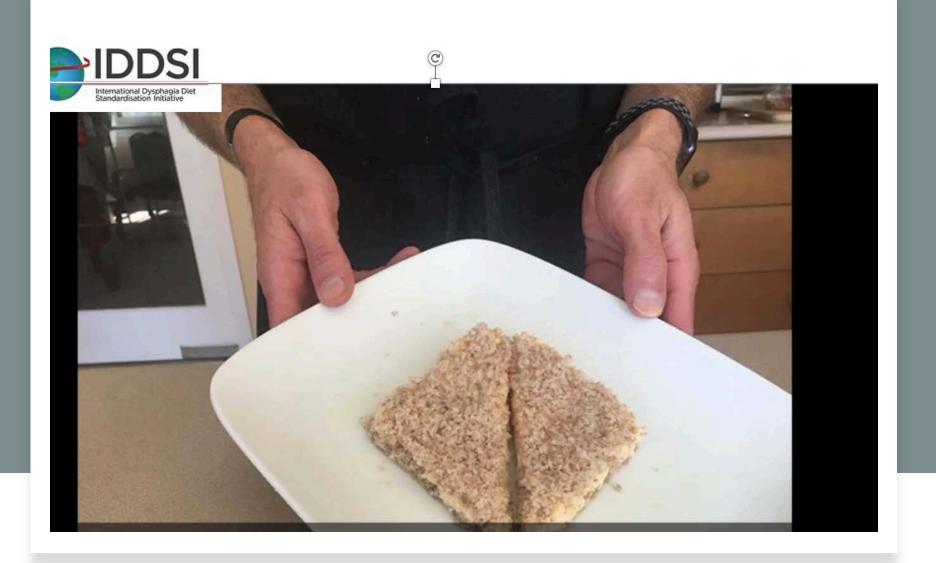


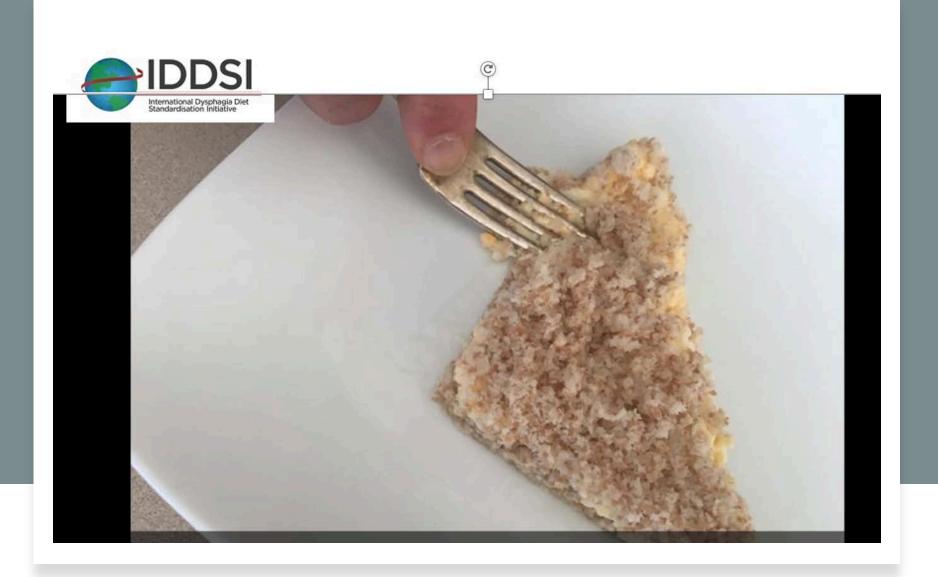












### Bread Takeaways

- Traditional bread is highly discouraged according to IDDSI guidelines and recommendations
- Bread will need to be modified as stated in the video for use in levels 5-7
- Manipulated bread/ bread products may be considered appropriate **IF** they pass the appropriate testing parameters



### Key takeaways

- Mixed textures are not permitted within the IDDSI framework as they are considered a choking risk
- Mixed textures are considered those that had both liquids and solids included in the same offering
  - Examples: Traditional beef stew, chicken noodle soup and cold cereal



### IDDSI Compliance

- IDDSI is not a mandatory regulation
- It is considered "best practice" on a national level

#### Regulated by State

- Many menu items will already have cross over and align with both NDD and IDDSI guidelines
- Utilization and Implementation of the process BEFORE IDDSI is required will ease the burden of transition





#### Full Nutrition Care Management (NCM)® Transition to IDDSI Framework by October 2021

Jan 19, 2021

The International Dysphagia Diet Standardization Initiative (IDDSI) created global standardized terminology and definitions for texture-modified foods and thickened liquids to improve the safety and care for individuals with dysphagia, a swallowing disorder, which affects an estimated 560 million people worldwide. The Academy of Nutrition and Dietetics and the American Speech-Language-Hearing Association jointly supported May 1, 2019 as the official launch date for IDDSI implementation in the United States.

It is imperative that all healthcare providers globally implement IDDSI, both to ensure patient safety and to maintain current standards of practice. The Academy of Nutrition and Dietetics is pleased to announce beginning October 2021, IDDSI will be the only texture-modified diet recognized by NCM®. The National Dysphagia Diet (NDD) and associated resources will no longer be included in the NCM® past October 2021.







# **Questions?**