An Introduction to the International Dysphagia Diet Standardisation Initiative

Dysphagia affects...
- ~ 8% of the world's population → 560 million
- In US & Canada, 55-68% reported in nursing homes
- In Japan, up to 55% in aged person facility
- Short or long term problem
- Adults and Children

“Thickening liquids has been and continues to be one of the most frequently used compensatory interventions [for dysphagia] in hospitals and long-term care facilities.”

Robbins, Nicosia, Hind, Gill, Blanco & Logemann, 2002

Errors in diet texture = safety risk
What did IDDSI set out to do?

- Establish the number of food texture and fluid thickness levels needed for international standardized use (adult + paediatric)
- Develop standard names/identifiers for each food and fluid level AND measurement guidelines
- Identify examples of foods appropriate for each level, including culturally specific foods
- Collect input + consensus from international key stakeholders
- Publish + communicate the international standards

Clinical Questions (examples)

- How thick is nectar?
- Are nutritional supplements (already) nectar-thick?
- Is barium (already) a nectar-thick liquid?
- How much thickener do I need to add to make a nectar-thick liquid?
- Is ice-cream a thin liquid when it melts?
- How do I know if a liquid is TOO thick for my patient?

What’s in a name?

In Australia...
- 39 different names for 4 levels of liquid thickness
- 95 different labels for 4 different levels of texture modified food

Atherton et al. (2007) Nutrition & Dietetics, 64 Suppl 2: S53-S76
Why do we need a standardised system?

- **Safety**
  - Multiple labels and definitions cause confusion
- **Clinical efficiency**
  - Avoid re-assessment as patients move through the system
- **Development of clinical and research evidence**
  - Research needs to map to terminology used clinically
- **Commercial implications**
  - Consistent items from manufacturer/supplier to manufacturer/supplier across hospital and community sectors

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Four stage plan...
2013-2015

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Collection + consolidation of existing data (Completed August 2013)</th>
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</table>
| Stage 2 | Gather the evidence  
           Stakeholder Surveys (completed, 2013)  
           Systematic Review (completed Nov., 2014) |
| Stage 3 | Interlace technical + research evidence with  
           clinical and cultural needs  
           Task force meeting to develop framework (Jan, 2015)  
           Feedback survey on draft framework (May, 2015) |
| Stage 4 | Consolidation + dissemination  
           (July-December, 2015)  
           Publication planned for 2016 |

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What Do We Know So Far?

The Need for International Terminology and Definitions for Texture-Modified Foods and Thickened Liquids Used in Dysphagia Management: Foundations of a Global Initiative

Julie A. Y. Clemons • Caterina Nudo • Janice D’Abravina • Pete Clavé •  
Jiarong Chen • Jun Kayashita • Roberto Buntas • Caroline Lecko •  
Renee Speyer • Peter Lane • Joseph Murray

[http://tinyurl.com/q54terf](http://tinyurl.com/q54terf)

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Current Practice Survey

August 2013 – January 2014

- **Health Professionals & Food Services**
- **Persons with Dysphagia, Carer & Care Organisations**
- **Researchers**
- **Industry Partners – Texture Modified Foods & Thickened Liquids**
Names of thickened liquids
27 different terms for regular + 4 levels of thickened liquids

Thin/Normal/Regular
  - Syrup/Slightly thick/Naturally thick
  - Nectar/Mildly thick/Grade 1/stage 1/Level 150
  - Honey/moderately thick/custard/Grade 2/Stage 3/Level 400
  - Pudding/Level 3/Level 4/Extremely thick/Level 900/Spoon thick

Names of Texture Modified Foods
54 different terms for regular + 5 levels of texture modified foods

Regular/Normal/Full/standard/solid
  - Soft (dental soft/mechanical soft/chopped/diced/cut up)
  - Mashed (fork mashed, pre-mashed)
  - Minced/mechanically altered/Ground/shredded
  - Puree
  - Liquidised

Systematic Review

The Influence of Food Texture and Liquid Consistency Modification on Swallowing Physiology and Function: A Systematic Review


Systematic Review

- There IS evidence that thickening helps those who aspirate thin liquids
- There is ALSO evidence that there is such a thing as “too thick”, where residue begins to accumulate
- There is NO specific evidence to point to particular rheological values that define the boundaries of effective thickening (either just thick enough or too thick)

Putting all together...

Developing a culturally-sensitive, age-span relevant framework for classifying food and liquid consistency

IDDSI Framework

IDDSI Framework

Detailed Descriptors and Testing Methods

MILDLY THICK

Description/Characteristics
- Flows off a spoon
- Sippable; pours quickly from a spoon, but slower than thin drinks
- Effort is required to drink this thickness through standard bore straw (standard bore straw = 0.200 inch or 5.3 mm diameter)

Physiological rationale for this level of thickness
- If thin drinks flow too fast to be controlled safely, these Mildly Thick liquids will flow at a slightly slower rate.
- May be suitable if tongue control is slightly reduced.

Testing method
- IDDSI Flow Test*
- Test liquid flows through a 10 ml slip tip syringe leaving 4 to 8 ml in the syringe after 10 seconds (see IDDSI Flow Test instructions*)
The Measurement Dilemma

• Measuring viscosity is TOO complicated to use in kitchens as the basis for classifying consistency
• We need a simpler, but valid and reliable method for measuring consistency at the point-of-use

Testing methods for Level 4

- Fork Pressure test
  - Fork will leave a pattern on the surface
- Fork Drip test
  - Sample will sit in a mound on a fork
  - A small amount may fall through but there is no dripping
- Spoon Tilt test
  - Holds shape on a spoon
  - Bolus will “plop” off spoon when tilted
- Figure test
  - It is just possible to hold a sample between fingers

Measurement for Foods

Particle Size:
For hard and soft solid foods, a maximum food sample size of ~1.5 x 1.5 cm is recommended, which is the approximate size of the adult human thumb nail (Murdan, 2011).

For minced and moist foods, a maximum particle size of 4 mm is recommended.
Measurement for Foods

IDDSI Fork Pressure Test:
• The slots/gaps between the tines/prongs of a standard metal fork typically measure 4 mm.
• This provides a useful compliance measure for particle size of foods at Level 5 - Minced & Moist.

Measurement for Foods

IDDSI Fork Pressure Test:
• A fork can be applied to the food sample to observe its behaviour 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.

Measurement for Foods

What are Transitional Foods?
• Foods that start as one texture and change into another with moisture or temperature.
• Minimal chewing required.
• Tongue pressure may be sufficient to break food down after alteration in moisture or temperature.
IDDSI Apps

Android & iOS
- for Smartphones & Tablets

IDDSI Apps

Creative Commons License

Allows translation...
Translations Underway
Belgium... Brazil...
French Canada...
China... France...
Germany... India...
Israel... Japan... Korea...
Netherlands...
Norway... Poland...
Slovenia... Sweden...
South Africa...
Thailand... Turkey...

Allows cultural fine tuning...

Porridge... vs
Oatmeal... vs
Grits... vs
Kanji

Recommended foods and those to avoid (examples) can be generated

Where is IDDSI being implemented?

IDDSI Community

In the near future, we hope to connect those who are in the process of implementing IDDSI to experience and lessons. See where IDDSI is currently in progress, learn from you can get involved and share your story.

Monitor-Aware-Prepare-Adopt Model for Implementation

Aware
- Build awareness across facilities/sectors to all impacted clinicians, professional associations and their boards, industry, administrators, government, supply chain and support staff
- Communicate who, what, where, when, why & how impacted

Prepare
- Assess processes and protocols that may need to change
- Approve product changes, prepare materials/inventory/computer management
- Train clinicians, staff involved (e.g. IDDSI Flow test etc.)

Adopt
- Introduce new IDDSI system to pre-packaged goods and at facility level in food service chain
- Transition and integration
What can you do to get ready for implementation?

- Take an inventory of your current system of texture modified food and thickened drinks
  - Find a supply of 10 ml slip tip syringes and begin confirming the flow characteristics of liquids in your diet system using the IDDSI flow test
  - Begin testing the particle size and hardness of foods in your diet system using the IDDSI fork test
  - Register on the IDDSI website to let us know you are preparing for implementation

What can you do to get ready for implementation?

- Gather together stakeholders in your agency who will be affected by any changes to names/colours/definitions for food texture modified foods and thickened drinks (e.g. Clinicians, Food Service Staff, Nurses and others)
  - Build awareness and begin discussing the steps that will be needed for implementation
  - As a group, map your current terminology to the IDDSI terminology

Currency Converter - Drinks

<table>
<thead>
<tr>
<th>National Dysphagia Diet (US)</th>
<th>Current UK Standards</th>
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<tbody>
<tr>
<td>Thin (Naturally thick liquids, e.g. infant formula, supplements)</td>
<td>Regular</td>
</tr>
<tr>
<td>Nectar-thick 51-150 mPa.s ✔</td>
<td>Texture E Fork mashable ✔</td>
</tr>
<tr>
<td>Honey-thick 351-1750 mPa.s ✔</td>
<td>Texture D Pre-mashed ✔</td>
</tr>
<tr>
<td>Spoon-thick &gt;1750 mPa.s ✔</td>
<td>Texture C Thick puree ✔</td>
</tr>
<tr>
<td></td>
<td>Texture B Thin puree ✔</td>
</tr>
<tr>
<td></td>
<td>7 Regular</td>
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<tr>
<td></td>
<td>6 Soft</td>
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<tr>
<td></td>
<td>5 Minced &amp; Moist</td>
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<tr>
<td></td>
<td>4 Pureed</td>
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<td>5 Liquidised</td>
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<tr>
<td></td>
<td>Transitional Foods</td>
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