Introducing the new International Dysphagia Diet Standardisation Initiative (IDDSI) Framework

Julie Cichero, IDDSI Co-Chair
On behalf of IDDSI Committee
Supported by Nestle Health Science
FINDING OF INQUEST

An Inquest taken on behalf of our Sovereign Lady the Queen at Adelaide in the State of South Australia, on the 7th day of April, and 8th day of May, 1997, before W C Chivell, a Coroner for the said State, concerning the death of G M.
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

- eating ... drinking... swallowing...
- chewing ... sucking... controlling saliva ...
- taking medication ...
- protecting the airway...
Dysphagia

Two primary functional concerns:

• Ability to swallow safely, without material entering the airway (penetration-aspiration);

• Ability to swallow efficiently, without leaving residue behind in the throat and taking sufficient by mouth to meet nutritional needs
Reasons for modifying food and liquids:


- **Foods** = ↓ choking risk
  - Autopsy results: 69% choked at home; 9.5% in hospital
  - Types of food choked on:
    - 35% = Sausage in bun, sandwich, meat, vegetables, noodles
    - 61% = puree, ground meat, mashed fruit

- **Liquids** = slower flow, increased control
Reasons for modifying foods and liquids: **Efficiency**

- Fatigue/Weakness
- Poor muscle movement/coordination
- Sufficient **nutrients** and adequate **hydration** to support
  - recovery
  - maintain health
What do we call it?

Runny, viscous, spoon-thick, sticky, honey, slushy, pudding, thin, custard, mushy, chopped, smooth, nectar, ground, puree, oily, watery, mousse, juicy, mealy, syrupy, thick, minced, thin, rubbery.
Why do we need a standardised system?

• **Safety**
  – Multiple labels and definitions cause confusion
  – Within and between institutions
    • Food services
    • Health care professionals
    • Family/Care providers
    • Individuals with swallowing difficulties
Why do we need a standardised system?

• **Clinical efficiency**
  – Avoids re-assessment to determine safe liquid and diet levels

• **Commercial implications**
  – ‘ready to use/off-the-shelf’ items that are consistent from manufacturer/supplier to manufacturer/supplier and similar to those produced in hospitals/care facilities/at home

• **Development of clinical evidence and conducting research**
  – Lack of consistency
National Standards

USA, UK, Australia, New Zealand, Ireland, Sweden, Denmark, Japan
Global implications
(texture modified food)

Ireland

Texture B = minced & moist
Texture D = liquidised

UK

Texture B = thin puree
Texture D = pre-mashed dysphagia diet
Global implications (clinical recommendations)

- Robbins et al. (2008) Protocol 201
  - Conclusion: “individuals on honey-thick liquids had poorer outcomes than individuals on nectar-thick liquids”.
  - Viscosity range of their ‘nectar-thick’ was $300\text{cP}$ ✓
    ‘honey-thick’ was $3,000\text{cP}$ ✗

- Misleading recommendations due to terminology confusion
# Four stage plan...

## 2013-2015

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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. Cichero · Catriona Steele · Janice Duivestein · Pere Clavé · Jianshe Chen · Jun Kayashita · Roberto Dantas · Caroline Lecko · Renee Speyer · Peter Lam · Joseph Murray

http://tinyurl.com/q54terf
International Stakeholder Consultation #1: n=2049; 33 different countries

Persons with dysphagia + carers; Professional associations that support; Health care professionals + food service; Industry; Researchers
Foods: 54 labels; 4-5 levels texture modification + normal most reported

<table>
<thead>
<tr>
<th>Region</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Africa</td>
<td>Normal, Soft, chopped, puree/mashed, liquid/blender</td>
</tr>
<tr>
<td>Australia + New Zealand</td>
<td>Full/normal, soft, minced + moist, puree/smooth puree</td>
</tr>
<tr>
<td>Asia</td>
<td>Regular, soft, minced/shredded, congee/puree, liquidised/blenderised</td>
</tr>
<tr>
<td>Canada</td>
<td>Regular, soft, minced, puree</td>
</tr>
<tr>
<td>Europe</td>
<td>Normal, Soft/tender/cut up, Ground/puree, liquid</td>
</tr>
<tr>
<td>Ireland</td>
<td>Regular, Soft, Minced + Moist, Puree/Smooth puree, Liquidised</td>
</tr>
<tr>
<td>Middle East</td>
<td>Solid, soft, minced + mashed, other puree</td>
</tr>
<tr>
<td>South America</td>
<td>Solid, Soft, mashed, thick puree, liquidised</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Normal, Fork mashable/Soft, pre-mashed/Texture D, puree, thin puree</td>
</tr>
<tr>
<td>United States of America</td>
<td>Regular, advanced/stage 3, mechanical soft/chopped/</td>
</tr>
</tbody>
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Health Professionals & Food Service Survey

Most commonly 4-5 levels food textures most often reported

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</table>

16% use a colour, number [1,II] or scheme to identify TM foods
Health Professionals & Food Service Survey

Most commonly 3-4 levels of liquid thicknesses most often reported

25% use a colour, number [1,II] or scheme to identify Thickened liquids
Liquids: 27 labels; 3+ levels thickness levels + normal

<table>
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<tr>
<th>Region</th>
<th>Names (least to most modified)</th>
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<tr>
<td>Africa</td>
<td>Normal/regular, nectar, syrup, pudding, thick</td>
</tr>
<tr>
<td>Australia + New Zealand</td>
<td>Thin, Mildly thick/Level 150, Moderately thick/Level 400, Extremely thick/Level 900</td>
</tr>
<tr>
<td>Asia</td>
<td>Thin, slightly thick, mildly thick, medium thick, extra thick</td>
</tr>
<tr>
<td>Canada</td>
<td>Thin, nectar, honey, pudding</td>
</tr>
<tr>
<td>Europe</td>
<td>Normal, Syrup/Slightly thick, nectar, honey, pudding</td>
</tr>
<tr>
<td>Ireland</td>
<td>Regular/normal, Gr 1, Gr 2, Gr 3, Gr 4</td>
</tr>
<tr>
<td>Middle East</td>
<td>Thin, mildly thick, moderately thick, other thick</td>
</tr>
<tr>
<td>South America</td>
<td>Liquid, slightly thick, nectar, honey, pudding</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Normal, Stage 1, Syrup, custard, pudding/stage 3</td>
</tr>
<tr>
<td>United States of America</td>
<td>Thin, nectar, honey, pudding</td>
</tr>
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</table>
• Only 40% of respondents check that texture modified foods and thickened liquids are of appropriate consistency before serving!?!
Systematic Review

Original Search → ~10,000 non-duplicate articles!!!

Relevancy Review
~ 488 articles

Inter-Rater Reliability Check

Synthesis... 36 articles
The Influence of Food Texture and Liquid Consistency Modification on Swallowing Physiology and Function: A Systematic Review

Catriona M. Steele · Woroud Abdulrahman Alsanci · Sona Ayanikalath · Carly E. A. Barbon · Jianshe Chen · Julie A. Y. Cichero · Kim Coutts · Roberto O. Dantas · Janice Duivestein · Lidia Giosa · Ben Hanson · Peter Lam · Caroline Leekó · Chelsea Leigh · Ahmed Nagy · Ashwini M. Namasivayam · Wesley V. Nascimento · Inge Odendaal · Christina H. Smith · Helen Wang

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IDDSI 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)
There IS evidence solid food and thicker consistencies require greater effort in oral processing and swallowing.

There is very little literature specifically about texture modified food used for the management of dysphagia.
| Stage 1 | Collaboration + consolidation of existing data  
(Completed August 2013) |
|---------|----------------------------------------------------------------------------------|
| Stage 2 | Gather the evidence  
(Systematic Review & Analysis of Stakeholder Surveys – Completed October 2014) |
| Stage 3 | Interlace technical + research evidence with clinical and cultural needs  
(Completed February 2015) |
Expert Panel Meeting
Vancouver January 2015

• Bringing together published standards; stakeholder feedback; research from systematic review

• Determine Draft
  – Number of levels
  – Labels for levels
  – Colour/number system
  – Methods of assessment (low tech + high tech)
IDDSI Committee

Jan Duivestein
Canada

Ben Hanson
UK

Jun Kayashita
Japan

Caroline Lecko
UK

Joe Murray
US

Mershen Pillay
S. Africa

Roberto Dantas
Brazil

Jianshe Chen
China

Peter Lam
Canada

Julie Cichero
Australia

Catriona Steele
Canada

Soenke Stanchus
Germany

International Co-Chairs
Draft Framework–
Stakeholder Consultation #2: May 2015

Support for:
• overall framework
• colours
• schema
• names of levels** (except for slightly thick)
• the syringe test
• name ‘minced and moist’
• the detailed descriptions
International Stakeholder Consultation #2: Draft framework n=3190; 57 different countries

Persons with dysphagia + carers; Professional associations that support; Health care professionals + food service; Industry; Researchers
Refined final Framework
Launched Kyoto, Japan September 2015
Detailed Descriptors & Testing Methods – Drinks (Launched Sept 2015 + ESSD Conference)

Detailed Descriptors, Testing Methods and Evidence
Drinks: Levels 0-4
IDDSI Flow Test

IDDSI Level classifications based on liquid remaining after 10 seconds:

Level 0: All liquid has flowed through syringe.
Level 1: There is between 1 and 4ml remaining.
Level 2: There is between 4 and 8ml remaining.
Level 3: There is more than 8ml remaining, but some liquid still flows through.
Level 4: If no liquid flows at all, the category is Level 4 or above.

Level 4 can also be easily identified without a syringe test: Material holds its own shape; small peaks remain on the surface. Too thick to be drunk from a cup or a straw, should be taken with a spoon. A full spoonful must drop off a spoon if turned sideways; a very gentle flick may be necessary but the material should not be firm, nor sticky.
Detailed Descriptors & Testing Methods: 
Foods – to be released 23 Oct 2015, China
FAQ

• Our facility only uses to levels of thick fluids and 2 levels of thickened liquids...
  – That’s fine – please just use the IDDSI labels – it doesn’t matter if there are gaps
  – There is no need for facilities to offer every level, only those that they use

• Aged care facility vs. paediatric setting vs. acute hospital vs. rehab hospital vs. home
For Australia ...where to now...

**Australian Standards for Texture Modified Foods and Fluids**

**FLUID**
- **Mildly Thick** Level 150: Fluid runs freely off the spoon but leaves a mild coating on the spoon.
- **Moderately Thick** Level 400: Fluid slowly drips in dollops off the end of the spoon.
- **Extremely Thick** Level 900: Fluid sits on the spoon and does not flow off it.

**FOOD**
- **Texture A - Soft**: Food may be naturally soft or may be cooked or cut to alter its texture.
- **Texture B - Minced and Moist**: Food is soft, moist and easily mashed with a fork; lumps are smooth and rounded.
- **Texture C - Smooth Pureed**: Food is smooth, moist and lump free; may have a grainy quality.

The provision of thickened fluids and texture modified foods is a routine part of the assessment and management of feeding and swallowing difficulties (dysphagia). If you need assistance with the level of fluid and food texture modification required, contact your Speech Pathologist.

To find a Speech Pathologist, go to [www.speechpathologyaustralia.org.au](http://www.speechpathologyaustralia.org.au)

If you require support to determine whether a textured modified diet is meeting nutrition and hydration needs, contact your dietitian.

To find an Accredited Practising Dietitian (APD), go to [www.daa.asn.au](http://www.daa.asn.au)

For more information call 1800 671 628 or visit [www.nestlehealthscience.com.au](http://www.nestlehealthscience.com.au)

Speech Pathology Australia
DAA
Dietitians Association of Australia
Biggest changes for Australia

• Number of levels
  – One additional level for drinks
  – Two additional levels for foods

• Colours
  – New colours for drinks
  – Introduction of colours for foods

• Numbers
  – Numbers for foods and drinks
Currency Converter - Drinks

**Australian Standards**

- **Unmodified regular**
- **Level 150**
  - Mildly thick ✔
- **Level 400**
  - Moderately Thick ✔
- **Level 900**
  - Extremely Thick ✔

IDDSI
International Dysphagia Diet Standardisation Initiative

- **0 Thin**
- **1 Slightly Thick**
- **2 Mildly Thick**
- **3 Moderately Thick**
- **4 Extremely Thick**
Currency Converter - Foods

**Australian Standards**

- **Regular**
- **Texture A**
  - Soft ✔
- **Texture B**
  - Minced and Moist ✔
- **Texture C**
  - Smooth puree ✔

**Transitional Foods**

- **7 Regular**
- **6 Soft**
- **5 Minced & Moist**
- **4 Pureed**
- **5 Liquidised**
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
“Melt-in-the mouth”

Result after fork pressure dry

Deformation after 1ml water for 1 min
Consultations and Progress to date

In principle support for uptake using the collaborative Aware-Prepare-Adopt Model

AUSTRALIA
Dietitians’ Association of Australia (DAA) + Speech Pathology Australia

UNITED KINGDOM
Royal College Speech + Language Therapists
British Dietetic Association
Royal College of Nursing
Hospital Caterer’s Assn
National Ass Care Catering

Meeting with American Speech + Hearing Association and Academy of Dietetics
Nov 2015

CANADA
Canadian Dietetic Association
Canadian Association of Speech-Language Pathologists + Audiologists
Canadian Association of Occupational Therapists
**Aware-Prepare-Adopt**

**Model for uptake**

**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
Barriers to uptake..

Evaluation of the uptake of the Australian standardized terminology and definitions for texture modified foods and fluids

SARAH JUKES¹, JULIE A.Y. CICHERO², TERRENCE HAINES¹, CHRISTINA WILSON³, KATE PAUL⁴ & MICHELLE O’ROURKE¹

¹Southern Health, Victoria, Australia, ²The University of Queensland, Queensland, Australia, ³Speech Pathology Australia, Victoria, Australia, and ⁴Dietitians Association of Australia, ACT, Australia

Change management
Language and cultural barriers
Training
IDDSI #2!
Enablers for uptake..

Evaluation of the uptake of the Australian standardized terminology and definitions for texture modified foods and fluids

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Inter-disciplinary collaboration
Support from industry
Photos... videos...
Low tech testing methods
Educational material and sessions
IDDSI #2!
### Four stage plan... 2013-2015

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www.IDDSI.org

Helping Patients with Dysphagia Around the World

LATEST NEWS

September 2015

The detailed descriptors, testing methods and evidence for drink thickness levels is now published, and available [here]. Find the descriptors, labels descriptions, and the final IDDSI framework on the Framework page.

Find out about the framework, the staggered launch, and where around the world we’ll be featuring the framework. Did you miss the latest edition of the E-Bite? Check it out [here], under E-Bites.

August 2015

At our last committee meeting, IDDSI discussed the feedback and responses collected in regards to our draft framework; fervent discussion over levels, the colours, and texture assessment resulted in a number of conclusions that will be published soon.

Until then, please view the draft framework, and subscribe to us.

We wish to extend our sincere appreciation to all those who took the time to complete the survey, and to everyone who has supported IDDSI. [Follow us on Twitter] for updates on our work.