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As per NZSTA regulations, this guideline will be reviewed five (5) years after publication. The working group will take responsibility for this review.
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Purpose of this document
The aim of this document is to provide clinicians and managers with consensus statements regarding current clinical best practice. This can assist in the clinical decision-making process by providing information on what is considered to be the minimum best practice. The focus of this is on the quality of the care provided. Expert opinion and professional consensus have also been considered within the evidence base.

Clinical guidelines are an important tool in supporting the delivery of high quality services that support the best possible outcomes for children and families. Although these guidelines are uni-professional and directed primarily at practising Speech-language Therapists, it is anticipated that they will contribute to multi-professional documents as appropriate. Throughout the document there is a strong emphasis on multi- and interdisciplinary team-working. The guidelines will also inform health, social and educational purchasers and other agencies that may become involved with individuals who have a communication or swallowing disorder.

This document provides broad clinical guidance on assessment and management for children with feeding and swallowing difficulties; also known as paediatric feeding disorders (Goday et al 2019). Each section is supported by evidence from the literature and the consensus of clinical experts.

Context and Use
These practices should be used within the prevailing context of the clinical governance agenda. The recommendations made should not be viewed as rules; rather, they should be taken as statements that assist in decision-making for both managers and clinicians. They are broad in their scope, but specific to childhood feeding and swallowing difficulties. They are empowering, providing guidance for the assessment and management of eating, drinking and swallowing difficulties in children across a range of ages, environments and with a diversity of presentations. They do not replace clinical guidelines, which have been devised for a narrow scope of work with a specific population of clients e.g. Videofluoroscopy Swallow Study, Tracheostomy guidelines. They are written from the viewpoint of minimum best practice as opposed to a perceived idealistic 'gold standard'.

This practices document should be read and interpreted in accordance with the Speech-language Therapist's clinical judgement. It is recognised that not everything will be clinically appropriate in every case, which is understandable. It is expected that the Speech-language Therapist will need to refer to one or more of the separate clinical guidelines for each individual. For example, Tracheostomy guidelines

Throughout this document “patient”, “client” and “child/ren” is used interchangeably to refer to the person who is receiving support and their family/whānau and/or caregivers.
Methodology

Working Group
A working group was established from volunteers through the New Zealand Speech-language Therapists Association. Members varied in locality, service and experience. The group worked through email and teleconferences to establish the initial guideline. The group reviewed a number of existing guidelines from international organisations associated with speech-language therapy and with feeding and swallowing difficulties, relevant to children’s services.

The group agreed that the New South Wales Ministry of Health - Feeding Difficulties in Children - A Guide for Allied Health Professionals Guideline (hereafter known as the NSW guideline) most closely met the need. In summary the NSW guideline provides direction to clinicians and is aimed at achieving the best possible children’s care across services. The guideline reflects what is currently regarded as a safe and appropriate approach to the management of children with feeding difficulties. Amendments were required to adapt the guideline for use in New Zealand, and to include the most recent guidance on texture modification. A New Zealand Context document supports the NSW guideline.

"Feeding Difficulties in Children-A guide for Allied Health Professionals Title (GL2016_007)" republished with permission from NSW Ministry of Health, Australia, 20 August 2018.

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Consultation Group
A range of specialists within relevant associated professions were asked to form a consultation group. The aim was to gain advice on the guideline and supporting document produced by the working group. The group included experienced professionals who worked with children with
eating, drinking and swallowing difficulties across the variety of different services as well as across the variety of contexts of New Zealand (e.g. rural, community-based).

**Consultation Group**

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Part 1. The New Zealand context

The New Zealand Speech-language Therapists’ Association (NZSTA) is the national professional body of Speech-language Therapists in New Zealand. All NZSTA documents referenced in this guideline can be found on their website: https://speechtherapy.org.nz/

NZSTA Principles and Rules of Ethics

Speech-language therapists should have knowledge of, and practice within, the current NZSTA Principles and Rules of Ethics (2015). These state that a high standard of professional and ethical integrity is paramount in all speech-language therapy practice, including children’s feeding and swallowing difficulties. All speech-language therapy practice should adhere to the five key principles and ethical rules of; beneficence and non-maleficence, professional competence, promotion and development of the profession, professional integrity and fairness.

Scope of Practice

It is the position of NZSTA that working in the field of childhood feeding and swallowing difficulties is within the scope of practice of speech–language therapists, including Entry-level SLTs graduating from New Zealand university programmes.

However, it is recognised that within childhood feeding and swallowing difficulties there are expanded, advanced and extended scopes of practice for speech-language therapists. For example;

- Children suffering burns (Rumbach, Clayton, Muller, & Maitz, 2016).
- and in leading Videofluoroscopy Swallow Study (VFSS) and Flexible Endoscopic Evaluation of Swallowing (FEES) assessment and management.

The speech-language therapist will plan intervention for children within the context of the developmental sequence of eating and drinking skills. Of paramount consideration will be safety, nutrition and hydration, balanced against the desire for developmental progress. The speech-language therapist should at all times consider the priorities of the family/whānau, and prepare intervention to support them. Any discrepancy between caregiver priority and safety of the child/adolescent should be clearly documented.

NB: Children with feeding difficulties should be under the management of a registered medical practitioner, to oversee the child’s care and act as a central point of coordination.

The Unique New Zealand Context

Ko te manu e kai i te miro
Ko te manu e kai ana i te miro, nōna te ngahere. Engari, ko te manu e kai ana i te mātauranga, nōna te ao.

The one who partakes of the flora and fauna that will be their domain. The one who engages in education, opportunities are boundless.
SLTs need to be aware of the importance of food in maintaining health, and in providing and sharing food with guests. For Māori there is a strong relationship between culture and kai (food). The preparation, choice and sharing of kai is a key aspect imbedded in Māori cultural practice. It is a significant aspect of manaakitanga; the hospitable welcoming of visitors (Brewer & Andrews, 2016).

Developing awareness of the importance of kai for cultural reasons (beyond nutrition) is critical. From a cultural perspective kai is not just a means for refuelling the body, rather it is part of a complex intertwining of kai and kōrero in order to ensure manaakitanga is upheld. Kai, in a Māori cultural context, is seen to remove the tapu from a situation, indicating a coming together (Durie, 1998), a strengthening of wairua (spirit) and spiritual and physical togetherness.

The act of preparing and presenting kai provides opportunity to facilitate social acceptance and engagement. Social and cultural significance attached to specific foods, eating and drinking behaviours and routines will affect not only social engagement but plans around safe eating, drinking and swallowing. For many cultural groups, food preferences and habits may act as markers of identity and group membership. Feeding practices and foods differ across cultures and are a reflection of beliefs about child nutrition and health needs (Kenny, 2015).

Support for children and whānau/families should reflect their cultural identify and food preferences in the preparation, sharing and consuming of kai and drink (Davis-McFarland, 2008). An SLT's obligations under Te Tiriti o Waitangi provides the foundation for the principles of partnership, participation and protection for Māori and non-Maori in working together. These principles apply to supporting tamariki and whānau around eating and drinking. In brief, kai, kōrero and manaakitanga must be seen to influence outcomes that impact on safe eating, drinking and swallowing.

**Definition of feeding and swallowing difficulties, including dysphagia**

Childhood feeding and swallowing difficulties include motor, sensory and behavioural factors that negatively impact on a child’s ability to safely and comfortably take the nutritional intake they require for growth and development. Dysphagia is the medical term for difficulty, or inability, to swallow. Dysphagia is listed by the World Health Organization in both the International Classification of Diseases (ICD-10) and the International Classification of Functioning Disability and Health. Dysphagia may present as difficulty with sucking, swallowing, drinking, chewing, eating, controlling saliva, taking medication, or protecting the airway. Dysphagia can occur at any time during a person’s life and may be short or long term.

The most common causes of childhood feeding and swallowing difficulties are related to underlying medical or physical conditions. However, it is recognised that childhood feeding and swallowing difficulties can also manifest in psychological or psychiatric conditions (Baheshree & Jonas, 2012; Suntrup et al., 2014). In addition, clinicians should be aware that symptoms of feeding and swallowing difficulties in children may manifest or be reported when the parent or caregiver is experiencing a psychological or psychiatric condition, such as depression, anxiety or psychosis.
Causes of Childhood feeding and swallowing difficulties
Childhood feeding and swallowing difficulties are symptoms secondary to something else. There are diverse potential causes of feeding and swallowing difficulties for children:

- Genetic (e.g. CHARGE syndrome, DiGeorge Syndrome).
- Developmental (e.g. consequence of prematurity of birth or global developmental delays).
- Acquired (e.g. brain injury, stroke, cancer).
- Functional (unknown cause).
- Iatrogenic (occurs during treatment, e.g. side effect of cardiac surgery or birth trauma).
- Structural impairment (e.g. cleft palate, hypertrophic tonsils).
- Physiological impairment (e.g. reflux, eosinophilic oesophagitis).
- Neurological impairment (e.g. epilepsy, lissencephaly).
- Psychosocial (e.g. a result of parental psychosis, such as Munchausen by Proxy, or lack of exposure to diverse foods due to poverty).

Characteristics and Consequences of feeding and swallowing difficulties
Feeding and swallowing difficulties are typically characterised by:

- Oral preparation, oral phase, pharyngeal phase or oesophageal phase dysfunction.
- Respiration-swell incoordination.
- Limited ability to protect the airway.
- Mealtime behaviour disturbances.
- Learned fluid or food aversion.

The child will have impaired oral intake that is not age-appropriate and is associated with medical, nutritional, feeding skills and/or psychosocial dysfunction (Goday et al, 2019).

Feeding and swallowing difficulties may result in:

- Failure to meet nutrition and hydration needs, including faltering growth (Arvedson, 2008; Prasse & Kikano, 2009).
- Depression, social isolation and negative impact on social well-being (Martino, Beaton, & Diamant, 2010; Thottam, Silva, McLevy, Simons, & Mehta, 2015) With children and adolescents, the depression and social isolation may be experienced by the adult caregivers and extended whānau (Didehbani, Kelly, Austin, & Wiechmann, 2011; Edwards et al., 2016; Swift & Scholten, 2010).
- Post-natal depression and trauma/grief processes experienced by parents and caregivers.
- Disrupted bonding and attachment in infancy with sequelae of psychological implications (Lee, 2008).
- Possible delayed or disordered development of oral skills (Barbosa et al., 2009).
- Pneumonia, in the presence of other risk factors such as recurrent respiratory illness, GORD, chronic aspiration, global developmental delay.
- Asphyxiation and death (Leslie, Crawford, & Wilkinson, 2009; Tutor & Gosa, 2012).
Components of Service Delivery

1. Prioritisation of referrals: Prioritisation systems will vary depending on the service provider. Documentation of prioritisation processes are strongly advocated. Prioritisation of new referrals against current caseload burden requires consideration. It is common practice for a benchmark to be set for speech-language therapy response time to feeding and swallowing referrals. All referrals for feeding and swallowing are important. Some factors make the feeding and swallowing referral both important and urgent. Prioritisation of referrals is based on risk to the child or infant’s safety and/or wellbeing.

2. Determination of need: A decision on the most appropriate professional (speech-language therapist or another team member) to respond to a referral should be determined before the referral is accepted. If the determination of need is unclear from the referral information, the following questions from the New South Wales Health Feeding Guidelines for Allied Health Professionals may assist in structuring assessment:
   a. Is oral feeding safe?
   b. Is oral feeding adequate?
   c. Is oral feeding efficient?
   d. Is oral feeding developmentally appropriate?
   e. Is oral feeding a positive experience for parent and child?

3. Informed consent: Informed consent is a fundamental concept in the provision of health care and education services. It is based on ethical obligations that are supported by legal provisions. The patient/client must be informed of the outcomes, benefits and risks associated with feeding and swallowing assessment and management services before these services commence. This discussion needs to be documented.

Multi-agency SLT working

At times, there may be simultaneous input from SLTs of more than one service, for example health and education service providers. Under these circumstances the speech-language therapists involved should ensure they have a clear understanding of their own, and others, roles and responsibilities when working with the child and their family/whānau. This information should be clearly communicated to the family and wider team involved. To foster these close multi-agency working relationships, strong communication pathways and local level service agreements between agencies must be established and maintained.

Organisation and legal responsibilities

Health and Safety policies, including infection control, must be followed where they exist. For this reason, therapists should be familiar with workplace occupational health and safety policies, workplace policies and procedures, relevant NZSTA Clinical Guidelines and other relevant legislation and guidelines. Speech-language therapists should be aware of the medico-legal implications and the responsibilities of working with clients who have feeding and swallowing difficulties.

Expectations of New Graduate (entry-level) clinicians

Competency-Based Occupational Standards (CBOS) (Speech Pathology Australia, 2011) have been chosen by the NZSTA as the tool to demonstrate attainment and subsequent maintenance
of entry-level competency during the first year of practice and beyond. CBOS 2011 is the minimum entry standard of practice for NZSTA & Speech Pathology Australia (SPA).

SLTs and employers can refer to the CBOS standards, the NZSTA New Graduate Framework (2015) and the NZSTA Mutual Recognition Agreement (2011) for details of minimum standards of competency for new graduate (entry-level) therapists and all practising speech-language therapists, including those trained overseas. It is important to recognise that speech-language therapy is not registered as a profession with the Health Practitioners Council, so individual organisations, employers and other stakeholders are required to follow their own due diligence process in ensuring that SLTs they employ are competent to carry out the role for which they are employed.

A new graduate (entry level) SLT trained in New Zealand or Australia must be able to demonstrate competence in all units of CBOS in childhood (and adult) SLT practice with both developmental and acquired disorders in the areas of: language, speech, swallowing, voice, fluency and multi-modal communication. In reference to swallowing, this includes (but is not limited to) competence in providing advocacy, education, assessment, management and undertaking life-long learning around oral, pharyngeal and oesophageal dysphagia, oral function for eating/drinking and meal time management. The CBOS 2011 document provides detailed exemplars of the level at which these competencies are demonstrated to be considered 'entry-level'.

CBOS 2011 states “It is unrealistic to expect that an entry-level speech therapist (SLT) will be competent in all areas of speech therapy (SLT) practice without access to supervision, guidance and support from a senior member of the profession.”

As mentioned above, it is beyond the scope of entry-level (new graduate) practice to undertake unsupervised work with ventilator-dependent patients, to lead a VFSS assessment or to undertake a FEES assessment. In addition, feeding and swallowing-specific expectations have been compiled from documentation from the United Kingdom. This is complimentary to the CBOS standards. A summary of the competencies expected of entry-level clinicians include:

- Independent management of non-complex cases.
- Ability to conduct a clinical assessment and feeding/oral trial.
- Determine client safety with foods and liquids trialled.
- Make management decisions regarding:
  - Change of diet.
  - Strategies.
  - Intervention.
- Recognise the need for further assessment, for example:
  - Second opinion.
  - Modified barium swallow/VFSS.
  - FEES.
- Prioritise clients from defined criteria.
- Determine safety of oral feeding vs. alternative feeding (acute clients).
- Provide feedback to client and referral source regarding swallowing status and recommendations.
- Advise on risk management.
- Basic awareness training for client, family and other health professionals.
- Participation (not lead) in clinical audits or research.

(Based on ‘Specialist dysphagia practitioner’ (Boaden, Davies, Storey, & Watkins, 2006)
Education and training

On-going competence
SLTs must be eligible for practising membership of NZSTA. A SLT should recognise and acknowledge their skill base and work within their scope of professional competence and performance (Principle 2, NZSTA Principles and Rules of Ethics (2015); CBOS (Speech Pathology Australia, 2011).

Competency develops with experience, allowing a dynamic integration of knowledge, skills and processes and incorporating development of reasoning, communication, lifelong learning and professionalism (McAllister, Lincoln, Ferguson, & McAllister, 2006; CBOS, 2011). McAllister et al. reported that some competencies are harder to attain than others. For example, of 11 competencies, the five that have been reported to be most difficult to attain include (in order):

- Analysis and interpretation (CBOS, Unit 2).
- Assessment (CBOS, Unit 1).
- Professional, group and community education (CBOS, Unit 6).
- Clinical reasoning (General Competency, Unit 1).
- Planning of speech therapy intervention (CBOS, Unit 3).

NZSTA advises that competency attainment and maintenance should be shared between individuals and their employing organisations. Employers should not require a SLT with less than 12 months experience to provide services in areas of advanced clinical practice until competency attainment has been addressed.

Staff orientation
SLTs working with clients with feeding and swallowing difficulties should meet the skills and standards documented here and in the CBOS. SLTs should undertake any training required by their employer. For example: workplace health and safety training, infection control, manual handling, cardiopulmonary resuscitation (CPR) and child protection training. All national, organisational and local legislation must also be adhered to (e.g. police vetting for working with vulnerable people).

Continuing professional development
All practicing SLTs are:

- Encouraged to maintain, update and extend their knowledge through participation in on-going professional development activities.
- Jointly obligated with the service employer to identify individual’s training needs and negotiate the most appropriate means of addressing these needs.
- Expected to undertake self-education activities as part of the commitment to professional development such as participation in the CPD recording as part of NZSTA membership.
- Encouraged to share their knowledge and expertise with their colleagues.
- Support others who are expanding the knowledge base of the profession.

Clinical education
All New Zealand and Australian university speech-language therapy/pathology courses equip students with basic skills and knowledge in dysphagia (McAllister et al., 2006). Practical skills in the area of childhood feeding and swallowing difficulties are, however, dependent upon the individual student’s clinical placement. Whilst every effort is made to ensure students receive
sound practical skills, individual student’s experiences will vary from setting to setting. Students should be provided with the opportunity to observe an experienced SLT conducting a childhood feeding and swallowing assessment and intervention where possible. Students should be provided with the opportunity to participate as much as their skill allows in the assessment, interpretation and management of clients with feeding and swallowing difficulties during their clinical training where possible. For this reason, we strongly encourage practising SLTs to offer student placement opportunities. The supervising SLT may provide the opportunity for students to become clinically competent in the assessment and treatment of feeding and swallowing difficulties, however, they ultimately maintain clinical responsibility for the clients care.

Staff training
SLTs have an important role in contributing to the training of other health professionals in; identifying symptoms of feeding and swallowing difficulties, preparation of appropriate food and drink, environmental adaptations, postural strategies, potential risks associated with unsafe feeding practices and non-compliance with recommendations.

SLTs may train, monitor and supervise others involved in supporting a client with feeding and swallowing difficulties. Training may include: provision of information, demonstration, and supervision or monitoring of practice of other staff about an individual or a group of people with feeding and swallowing difficulties. Training may enable other staff to carry out strategies recommended by the SLT, in order to affect a greater response to that intervention. The SLT has a responsibility to tailor the level of information to the needs and abilities of the person receiving the training. Training should be documented in the clinical notes or elsewhere in writing. SLTs maintain the responsibility for monitoring, supervising and altering the treatment programme.

Leadership and supervision
Experienced clinicians have a role in leadership and supervision. These clinicians will most often have undertaken additional training and may be responsible for specialist and complex caseloads. They may work in specialist clinics or locations across a range of settings. Roles associated with experienced clinicians include (Boaden et al., 2006);

- Teaching, training and supervising others in the identification of feeding/swallowing difficulties.
- Providing a resource for evidence-based practice and to offer consultative second opinions.
- Lead clinical quality improvement activities, audits and research.
- Develop local childhood feeding and swallowing policy and procedures.
- Assist in service delivery and budgeting.
- Lead and facilitate the development of effective interagency relationships to facilitate quality care for children and their families.

It is essential that at every level, throughout his or her entire career, the SLT working with infants and children with feeding and swallowing difficulties receive regular, dedicated, caseload specific supervision. This may take place in a number of different ways, for example; individual, 1:1 supervision with a more experienced colleague; peer supervision, either group or individual; or telephone supervision with a designated individual. Regardless of format, regular supervisory arrangements should be made as they are crucial for ensuring safe practice. Of particular importance is supervision during the development of competency to practise
autonomously. It is essential that a new graduate (entry level) SLT new to the clinical area of childhood feeding and swallowing is supervised by an appropriately qualified and experienced SLT in this clinical area.

Other issues for consideration include appropriate supervision for experienced SLTs and those in independent practice. These practitioners are vulnerable, should be provided with appropriate supervision arrangements, and should not undertake clinical work in feeding and swallowing without supervision. Members of the speech-language therapy workforce have a duty to understand the level at which they are working in childhood feeding and swallowing and to seek out appropriate supervision to support their on-going reflection and development, for the safety of the patient/client and themselves.

(Also see the RCSLT Interprofessional dysphagia framework https://www.rcslt.org/members/publications/publications2/Framework_pdf)

**Guidance for Employers**

The employer is responsible for ensuring that the roles and responsibilities associated with patients/clients with feeding and swallowing difficulties are clearly detailed in the SLT’s job description. Employers have a responsibility to ensure that the supervisor of SLTs undertaking childhood feeding and swallowing work has adequate skills to provide supervision and teaching in this area. Employers also have a responsibility to ensure that adequate time is given for supervision. It is recommended that new graduate (entry level) SLTs and SLTs new to practice in childhood feeding and swallowing receive a minimum of 2 hours supervision per month, although a higher level may be required as determined by the complexity of the clinical caseload and individual needs of the developing therapist. The supervisor should be appropriately qualified and experienced in this clinical area, maintaining their professional development beyond entry level specifically within childhood feeding and swallowing.

If there is no suitable supervisor within the employing organisation, employers may arrange for a supervisor from another organisation, but should ensure that this fits within a professional and clinical governance framework. Again, employers have a responsibility to ensure that the supervisor has adequate skills in this area.

Employers should ensure there are appropriate policy and guidance documents with regard to childhood feeding and swallowing difficulties within the employing organisation. *As with all clinical areas it is advised that employers ensure there is appropriate supervision in place for the supervisor.*

Employers have a responsibility to support SLTs engagement with continuing professional development activities. This is in order for SLTs to work within an evidence based and ethical framework (NZSTA Professional Development Policy).
Part 2. Guidelines for clinical practice

Please refer to the NSW guidelines document for guidelines for clinical practice. In reading the document please use common sense to apply the principles and practices to the NZ context, including amendments to relevant support services and agencies, government ministries and additional documents the guidance refers to.

The following amendments apply:

1. Local and national child protection policies for NZ apply.
2. A NZ Videofluoroscopy Swallow Study guideline is available from the NZSTA.
3. In NZ families are provided with a well-child book from Tamariki Ora (this replaces references to the 'blue book').
4. International Dysphagia Diet Standardisation Initiative replaces the previous Australian texture modification guidelines – more details are below.
5. Karitane and Tresilliane services are not available in NZ. Plunket and other local child and parenting providers are available in NZ. PlunketLine can provide support and advice for families and professionals 0800 933 922.
6. Appendix 3, listing NSW services is not relevant and has not been replaced. SLTs are encouraged to identify their own local and national services.
7. SLTs are strongly encouraged to consult with dietitians or other professionals qualified to calculate energy and nutrition requirements. The details in the NSW document are for information only. Registered Dietitians will have access to specific and detailed energy and nutrition information.
8. In NZ, La Leche League is a provider of breastfeeding advice, support and advocacy.

IDDSI

The following text replaces page 42 and 43 of the NSW guideline and any references to the Australian texture modification guidelines. Refer to www.iddsi.org

Thickening of liquids can be defined according to the IDDSI (Cichero et al., 2017):

- **0 Thin**: Flows like water, fast flow, can drink through any type of teat/nipple, cup or straw as appropriate for age and skills.

- **1 Slightly thick**: Thicker than water, requires a little more effort to drink than thin liquids, flows through a straw, syringe, teat/nipple, similar to the thickness of commercially available ‘anti-regurgitation’ (AR) formula.

- **2 Mildly thick**: Flows off a spoon, sippable, pours quickly from a spoon, effort is required to drink this thickness through standard bore straw (standard bore straw = 0.209 inch or 5.3 mm diameter).

- **3 Moderately thick liquidised**: Will not hold its shape on a spoon, sippable, pours slowly off a spoon, difficult to suck through a standard bore or wide bore straw (wide bore straw = 0.275 inch or 6.9 mm), cannot be piped, layered or moulded, cannot be eaten with a fork because it drops through the prongs.

- **4 Extremely thick pureed**: Holds shape on spoon, flows very slowly under gravity, does not require chewing, could be piped, layered or moulded, no lumps, falls off spoon in a
single spoonful when tilted and continues to hold a shape on a plate, cannot be sucked through a straw, not sticky, liquid does not separate from solid.

More information on the Testing method, using the IDDSI flow test and rationale for specific levels can be found at www.iddsi.org

**Solids**

Textures of solids are also defined according to the IDDSI. A combination of tests may be required to determine which category a food fits into. Testing methods are; the fork drip test, spoon tilt test, fork and spoon pressure test, chopstick test and finger test. Please see www.iddsi.org for specific details of tests. The textures of solids are defined as follows.

3 *Liquidised*: Drips slowly or in dollops/strands through the tines/prongs of a fork (corresponds to level 3 moderately thick fluids).

4 *Pureed*: Sits in a mound or pile above the fork, a small amount may flow through and form a tail below the fork, does not flow or drip continuously through the fork prongs. The spoon tilt test can also be done to determine the stickiness of the food and the ability for it to hold together (corresponds to level 4 extremely thick fluids).

For soft, hard or firm food, the fork has been chosen to assess food texture as it can be used for assessment of hardness, shape and particle size:

5 *Minced & Moist*: Food should be able to be easily minced or mashed with a fork. It may be presented as a thick puree with obvious lumps in it. Food should be moist and should easily form into a ball in the mouth. For determining particle size safety for infants, samples that are smaller than the maximum width of the child’s fifth fingernail should not cause a choking risk as this measurement is used to predict the internal diameter of an endotracheal tube in the paediatric population (Turkistani, Abdullah, Delvi, & Al-Mazroua, 2009). For adults, the slots/gaps between the fork prongs of a standard metal fork typically measure 4 mm and particles should be no larger.

6 *Soft & Bite-Sized*: A maximum of 1.5 x 1.5 cm particle size is recommended for adults which is the entire width of a standard fork and 8 mm for children to reduce risk of asphyxiation from choking on a food. To assess whether a food is soft or hard the fork pressure test can be done. See IDDSI for full details.

7 *Regular*: Can determine whether hard or soft by doing a fork pressure test.

*Transitional food textures*: minced & moist, soft & bite sized, and regular foods can be transitional food texture which means they start as one texture and change to another texture when moisture (e.g. water or saliva) is applied, or when a change of temperature occurs (e.g. heating). These foods are often called bite and dissolve (e.g. Baby mum-mum crackers, cruskits) or meltables (e.g. ice blocks, chocolate).

This texture is used in developmental teaching of chewing or rehabilitation of chewing skills (Gisel, 1991). Use a sample the size of the thumb nail (1.5 cm x 1.5 cm), place 1 ml of water on the sample and wait one minute. Apply fork pressure using the base of the fork until the thumbnail blanches to white. The sample should be squashed and disintegrated and no longer look like its original state when the fork has been lifted, the sample breaks apart completely by rubbing the sample between the thumb and index finger and does not return to its initial shape, or it has melted significantly and no longer looks like its original state (e.g. ice chips).
References


