



Standards of Practice for Speech and Language Therapists on the Management of Feeding, Eating, Drinking and Swallowing Disorders: Working with Neonates and Babies, 2021

This document should be read in conjunction with the IASLT document
**'Standards of Practice for Speech and Language Therapists on the Management of
Dysphagia' (revised edition due in 2021)**

First Version	This Version	For Review
2013	2021	2026

Background to this document

The Irish Association of Speech and Language Therapists commissioned a document entitled '*Standards of Practice for Speech and Language Therapists on the Management of Dysphagia*' which was initially written in 2007, revised in 2012 and with a revised edition due in 2021. To support this document, acknowledging developments in paediatrics and the changing caseload demographics, IASLT commissioned a second document '*Standards of Practice for Speech and Language Therapists on the Management of Feeding, Eating, Drinking and Swallowing Disorders: Working with Neonates and Babies*' in 2013. This document is a revision of the 2013 standards for working with neonates and babies.

This document contains minimum standards of practice for Speech and Language Therapists (SLTs) in Ireland involved in assessing, treating and managing service users with Feeding, eating, drinking and swallowing disorders (FEDS). It is acknowledged that there are a number of client groups where FEDS needs differ to those of the general adult population. To ensure best practice for babies, infants and children presenting with FEDS needs, it was acknowledged by IASLT and SLTs working in the field that a document specific to this population was required.

Since this document was first launched in 2013, many changes have taken place in speech and language therapy, speech and language therapists as a population and specifically in the provision of SLT services to babies. Since 2010, all SLTs graduating in Ireland have a recognized basic dysphagia qualification. In 2016, CORU was established and this also requires dysphagia qualification as prerequisite for registration. This has resulted in a significant increase in the number of SLTs providing paediatric FEDs services and also an opportunity for the establishment and expansion of FEDs services across the country. SLTs who are developing such services will require support from SLTs in existing FEDS services and these relationships should be encouraged.

Internationally, more than 1 in 10 babies are born preterm. For the babies who survive premature birth, many face a lifetime of significant disability (WHO 2012). Many other babies will have either congenital or acquired conditions which can have an impact on FEDS skills. Lower infant mortality rates continue to drive the numbers of babies who will require FEDS input (CSO 2017, vital statistics Yearly Summary)

These babies will typically present in acute settings e.g. neonatal intensive care units (NICU), special care baby units, baby wards. Additionally, advances in medicine across all disciplines has resulted in many children now surviving previously life limiting illnesses, for example, cardiology, oncology, complex airway disease. In more recent times, these babies have presented more to early intervention and local primary care services and require SLT input as they grow up.

In line with increasing fluidity and integration between services and ongoing projects such as Progressing Disability (Report of Reference Group on Multidisciplinary Services for Children aged 5 to 18 Years, HSE, 2009) as well as a growing knowledge base amongst professionals of the needs of this particular service user group, these babies go on to become involved in a range of services (voluntary, community) and clinical settings. These services have been developing in more recent years and SLTs are an integral part of the team, accepting referrals outside the acute setting from a very early stage.

Since 2013, there have been a number of advances and developments in working with this population and this document needs to reflect this. As part of the process of reviewing these guidelines, the profession was surveyed to determine what areas of the document needed attention/development.

In October 2018, the IASLT Professional Development Manager circulated the survey to all members via standard email lists. It was also shared on all IASLT social media outlets including Facebook and Twitter. Members were also asked to forward it on to colleagues who may not have access to the above media. Reminders were sent 2 weeks after initial circulation.

There were 59 respondents to the survey from a variety of work settings including Acute Paediatric hospital (20.34%), Early Intervention (18.64%), Primary Care (16.95%), Voluntary Body Intellectual Disability (13.56%), Adult Acute Hospital (8.47%), Voluntary Body physical and sensory disability (6.78%), Community setting (5.08%) and School Age setting (3.39%). The majority of respondents were Senior SLTs, qualified 5-10+ years (57.63%). 23.73% were qualified less than 5 years, 8.47% were specialist grade and 8.47% were managers.

Almost 70% of the respondents reported that they had previously consulted the IASLT 2013 Document. Reasons for consulting the document included to support learning (32.08%), Assist with developing skills and knowledge (11.32%), to facilitate current (11.32%) and new (9.43%)

service development, and to support or supervise a colleague developing skills (24.53%). The majority (75.47%) of these reported that the document was helpful to them.

Finally, respondents were asked what they would like to see included in the revised document. A number of themes were identified;

1. Working in a non-hospital setting including disability, primary care and progressing disability settings: SLT roles, multidisciplinary team liaison, medical support in these settings and interface with acute services
2. An up-to-date evidence base for assessment and intervention
3. Competencies and skill levels to be revised, including caution in use of the term 'advanced'
4. Risk management
5. Ethical issues
6. Aversive feeders
7. Tube weaning guidelines
8. Onward referral criteria
9. Prognostic indicators
10. Discharge criteria

In 2019 an international expert group proposed for the first time a unifying diagnostic term "Paediatric Feeding Disorder" (PFD) in a consensus statement, in line with the framework of the WHO International Classification of Functioning, Disability, and Health. This group proposed clear diagnostic criteria and the use of common, precise terminology to support clinical practice, research and healthcare policy (Goday, Huh, Silverman et al 2019). They defined PFD as impaired oral intake that is not age-appropriate, and is associated with medical, nutritional, feeding skill, and/or psychosocial dysfunction. As discussions about this proposed framework evolve over the coming months and years it will allow Irish SLTs to shape terminology and frame services in a clearer and more focused manner.

With these themes and issues in mind, the committee have revised this document to reflect the changing needs of our clients and their families, the changing face of SLT service delivery and the changes in medical and clinical practice that are changing how we manage and intervene in the child with a FEDS disorder.

Who is this document for?

This document is intended for consultation by:

- Speech and Language Therapists (SLTs)
- Managers/service providers to help establish baselines for practice and assist skill development in teams and to justify funding and development of services.
- Supervisors and Mentors for SLTs acquiring skills in this clinical area.
- SLTs new to working with this population.
- Undergraduate students as a source of information
- Other groups such as service users and other members of the multidisciplinary team

Who is this document about?

The intended client group is babies from 0-24 months corrected age (i.e., actual age in weeks minus number of weeks premature) of which there will be the following subgroups:

Table 1: Babies Subgroups

Group	Definition
a) Premature Infants	Defined by the WHO (2012) as babies born alive before 37 weeks of pregnancy are completed. Subcategories of preterm birth are based on weeks of gestational age as follows; <ul style="list-style-type: none">○ Extremely preterm (<28 weeks)○ Very preterm (28 to < 32 weeks)○ Moderate to late preterm (32 to < 37 weeks)
b) Neonates	The neonatal period commences at birth and ends 28 completed days after birth. (WHO 2012)
c) Babies	From 29 days - 24 months

It must be borne in mind that babies will acquire feeding, eating, drinking and swallowing skills along a recognised developmental continuum at different ages/stages and times. For the purposes of this document the term 'baby' will be used to represent the above subgroups.

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- Members of the previous working group for original document
- Members of the working group for Standards of Practice for Speech and Language Therapists on the Management of Feeding, Eating, Drinking and Swallowing Disorders
- IASLT Professional Development Manager for circulating the survey and reviewing the document at its various stages.
- Speech and language therapists who completed the survey and gave feedback to the group.
- American Speech, Hearing, Language, Association (ASHA)
- Speech Pathology Australia (SPA)
- Royal College of Speech and Language Therapists (RCSLT)
- New Zealand Speech–Language Therapists’ Association Inc. (NZSTA)

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1.0 Definitions/Terms

Speech and Language Therapist (SLT): For the purposes of this document a Speech and Language Therapist is a person who holds a professional qualification in SLT and who is eligible for membership of the Irish Association of Speech and Language Therapists

For the purpose of this document the following subgroups will be referenced;

- **Premature infants:** Defined by the WHO (2012) as babies born alive before 37 weeks of pregnancy are completed.
- **Neonates:** The neonatal period commences at birth and ends 28 completed days after birth
- **Baby:** From 29 days – 24 months

Aspiration: Passage of any material (e.g., food, liquid, saliva) below the level of the true vocal folds into the trachea

Chronic lung disease: Persisting respiratory problems.

Clinical Assessment of FEDS: The process by which the SLT aims to identify presence and nature of a FEDS disorder based on clinical signs.

Failure to thrive: Describes infants and young children who fail to grow as expected on the basis of established growth standards for age and gender (Arvedson 2002)

Faltering growth: used to refer to a slower rate of weight gain in childhood than expected for age and sex.

Feeding, Eating, Drinking and Swallowing (FEDS): Refers to the total process of feeding, eating, drinking and swallowing. When a single aspect of the swallowing process needs to be identified then the appropriate term will be employed e.g., feeding (RCSLT 2006)

Fibreoptic Endoscopic Evaluation of Swallowing (FEES): This involves the transnasal insertion of a fibreoptic nasendoscope to the level of the oropharynx/hypopharynx to evaluate laryngopharyngeal anatomy and physiology as it relates to the management of secretions and the ability to swallow food and fluids. Images are recorded (IASLT 2012)



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Gastroesophageal reflux: Spontaneous regurgitation of stomach contents upwards into the oesophagus

Intubation: The placement of a flexible plastic tube into the trachea to maintain an open airway

Neurodevelopmental assessment: This is an assessment which periodically evaluates the infant's primitive reflexes, gross motor, fine motor, vision, hearing, speech, cognition and behaviour. Several standardised assessments exist (Dietrich 2005).

NICU: Neonatal Intensive Care Unit

Non-nutritive sucking: Is used for state regulation, calming and organisation; to satisfy the desire to suck; and in exploration. This type of sucking is organised in patterns of bursts and pauses.

Nutritive sucking: Is used to obtain nourishment and is observed when the infant is breast-feeding or bottle-feeding (Morris & Klein)

Oral hygiene: the practice of keeping the mouth clean and healthy by brushing and flossing to prevent tooth decay and gum disease.

Oral sensorimotor aversion: Sensory based feeding disorder (Brody 2008)

Oral stimulation: a structured intervention programme focused on stroking of perioral and intraoral structures in a specific way with a gloved finger for a specified time before feeding, to enhance sucking skills and efficiency during feeding.

Oropharynx: The posterior extension of the oral cavity. The oropharynx begins at the posterior surface of the anterior pillars and extends to the posterior pharyngeal walls.

Perinatal development: The perinatal period (from Greek *peri*, "about, around" and Latin *nasci* "to be born") is "around the time of birth", specifically from 22 completed weeks (154 days) of gestation (the time when birth weight is normally 500 g) to 7 completed days after birth (WHO 2001)

Pre-natal development: Prenatal or antenatal development is the process in which a human embryo or fetus (or *foetus*) gestates during pregnancy, from fertilization until birth

Quality of life: WHO defines Quality of Life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of their environment (WHO 1997)

SCBU: Special Care Baby Unit

Sensory aversions: In infants or children where the neural/brain processing of sensory information e.g. visual/auditory/tactile/kinaesthetic or proprioceptive experiences is disrupted, they may find exposure to these types of stimuli distressing and therefore become aversive to the stimuli and avoid exposure to them or develop distressing behaviours if exposure occurs.

Silent Aspiration: is said to occur when a child aspirates in the absence of signs or symptoms, noticeably a cough (Winstock 2005)

Suck swallow Breathe (SSB): The development of precise coordination of sucking, swallowing and breathing is essential for safe and efficient feeding in infants. When good feeding is established infants will suck & swallow & breathe in a coordinated rhythmic manner at a ratio of approximately 1:1:1 for nutritive sucking.

Tongue tie: a malformation which restricts the movement of the tongue and causes a speech impediment.

Tracheostomy: A surgical procedure to create an incision into the trachea (windpipe) that forms a temporary or permanent opening to assist with breathing if respiration is significantly compromised

Upper aerodigestive tract: Consists of the hypopharynx, oral cavity and larynx.

Ventilator dependent: A situation where an infant's breathing is significantly compromised and requires the assistance of a mechanical respiratory support.

Videofluoroscopic Swallow Study (VFSS): This is the radiological procedure designed to study the anatomy and the physiology of the oral preparatory, pharyngeal, and cervical stages of deglutition and to define treatment and management strategies that will improve the individual's swallowing safety and/or efficiency. A range of food and fluid textures are administered during the procedure. Images are recorded (IASLT 2012)

2.0 Impact of Feeding, Eating, Drinking and Swallowing Disorders in Babies

FEDS disorders in babies may increase the risk of the following;

- Longer transitions from tube feeding to oral feeding (Bingham et al 2012)
- Longer hospital stays and associated additional costs (ASHA 2001; Arvedson 2002; Rommel et al. 2011, Lau 2016, Eichenwald et al. 2001, Greene et al. 2016)
- Respiratory compromise/apnoeas (ASHA 2004, Barlow et al. 2010, Jadcheria 2017)
- Faltering growth (Samara et al. 2010, Sanchez et al. 2016)
- Anxiety/stress (ASHA 2001, Cichero 2006, Faugli et al. 2009, Goday et al. 2019)
- Persistent unresolved feeding difficulties in late infancy (Mathisen et al. 2000, Buswell et al. 2009, Goday et al. 2019, Sanchez et al. 2016, Samara et al. 2010)
- Oral sensorimotor aversions (Arvedson 2002, Morris & Klein 2000, Brodsky et al. 2008)
- Feeding tube dependency (Dunitz-Scheer et al. 2009)

2.1 Incidence and Prevalence in Paediatrics

Premature Infants	15% to 21% (Wicke et al. 2014)
Cardiac conditions	22%-44.6% (Kogon et al 2007; Mussatto et al 2014; Maurer et al 2011; McKEan et al 2017; Shine et al 2019)
Cerebral Palsy	Incidence varies from 31% to 99% (RCSLT 2018)
Neurodevelopmental disabilities	21% to 44% (RCSLT 2018)
Children with acquired conditions during acute phases of care	68% to 72% (RCSLT 2018)
Typically developing paediatric population	25% to 45% (RCSLT 2018)

3.0 Education and Training

Training in dysphagia begins at University level during the Speech and Language Therapy programme with a transition to independent practice being achieved under supervision post-graduation working with dysphagia clinical caseload. Speech and Language Therapy programmes in the Republic of Ireland have included FEDS training since 2010.

SLTs working with neonates and babies with FEDS disorders are encouraged to consult the IASLT Standards of Practice for SLTs on the Management of Dysphagia, 2012 (revised version expected 2021) closely to assist their skills development in order to both;

- (a) Establish and consolidate basic skills and
- (b) Progress from basic practitioners to intermediate and advanced practitioners as necessary.

3.1 Theoretical Knowledge Base for SLTs working with FEDs in Neonates and Babies

(Please read in conjunction with 'Standards of Practice for Speech and Language Therapists on the Management of Dysphagia', IASLT 2012 (revised version expected 2021))

It is recognised that since 2010 Speech and Language Therapists who have graduated from the four universities in Ireland will be competent at a basic level to assess, diagnose and provide intervention for service users with FEDS disorders as part of their clinical caseloads (IASLT 2012).

However, it is felt **additional** knowledge and skills are required in order to manage this specialised population (neonates and babies). SLTs are ethically responsible for attaining and maintaining their competency levels for this client group. Additional skills can be attained by attending courses, clinical supervision, and mentoring. They must recognise their own limitations and the need for onward referral if the case is beyond their scope of practice.

Table 2: Knowledge base of SLTs working with FEDS disorders in Neonates and Babies.

SLTs working with FEDS Disorders in Neonates and Babies should have Theoretical Knowledge of;

- Age terminology during the Perinatal Period (American Academy of Paediatrics 2004)
- Normal embryology, perinatal, and post-natal infant development including an understanding of current research in neurobiology, physiology, and genetics as they relate to infant behaviour (ASHA 2004)
- Anatomic structures, physiology, behaviour and neurodevelopment in preterm and term infants (ASHA 2004))
- Nutritive and Non Nutritive Sucking Patterns (NNS) and the maturation of suck, swallow, breath (SSB) (Amaziau et al 2008; Bingham et al 2009; Gewolb et al 2001; RCSLT 2003; Kennedy, 2005)
- The significance and implications of disruptions in expected development and function considering risk factors in prenatal and peri-natal development, aetiologies and medical conditions (ASHA 2004).
- Breastfeeding and breastmilk feeding and how the SLT may support both of these (Unicef/WHO 2009, Dodrill 2016c, WHO 2017, Kim et al 2018, Fucile et al 2018, Karimi et al 2019)
- Current thinking on tongue tie, how it may impact on feeding and appropriate assessment and management protocols on a case by case basis (HSE 2016, O'Shea et al 2017, Watson Genna 2017)
- The rationale for use of feeding tubes, their impact on oral feeding, risk of development of tube dependency and awareness of how to transition from tube feeding to oral feeding.
- Clinically significant signs related to dysphagia status (e.g. overt/ silent aspiration) (RCSLT 2003).
- The impact of intubation, oral or tracheal, on successful feeding development (Chappel 2012).
- Effects of handling, postural alignment and motor control on the infant's ability to regulate the enteric (GI, autonomic) nervous systems (Chappel 2012; Kennedy 2005).
- Knowledge of infants' communicative behavioural cues (Kennedy 2005; Settle and Francis, 2019).
- Effects of chronic lung disease and gastro-oesophageal reflux (Kennedy 2005; Bhatia & Parish 2009).
- Environmental influences on feeding e.g. positioning, medication, co-existing health concerns, feeding method, social and cultural (Morris & Klein 2000; Wolf & Glass 1992).
- Family centred practices including the impact of the NICU experience on family dynamics and function (ASHA 2004, RCSLT 2003). Understanding of the working systems, policies and staffing within the NICU/ SCBU or relevant service.
- Interventions for oral skills and use of utensils (Pados et al. 2019; Greene et al 2016)
- How to provide documentation and contribute to team-based decision- making.

3.2 Communication with Key personnel / specialists / advisors

All SLTs must work within their scope of practice and within their competency range. It is the responsibility of the SLT to identify what skill level they have achieved and if they need to consider assessment of intervention beyond this, they should seek to develop skills by establishing links with local SLTs (where possible) with FEDS experience. Close liaison and links should be established between National and Regional hospital services and local settings.

This liaison may occur in a number of ways for example shared care between services, second opinion for assessment or intervention, or case discussions or support.

SLTs who have skills and who are involved in mentoring or supervising a colleague should be able to direct their colleague to further reading or resources in order to develop skills and knowledge and competency.

The following appendices should provide useful supports to SLTs working at all levels.

- Appendix 1 provides a list of core reading material for SLTs working with neonates and babies with FEDS disorders.
- Appendix 2 provides details on Special Interest Groups and social media sites.

4.0 Role of Speech and Language Therapist in Hospital and Community Settings (ASHA 2002 & ASHA 2005)

4.0.1 Hospital Settings

4.0.1a Neonatal Intensive Care Unit (NICU)

SLTs working in a Neonatal Intensive Care (NICU), have a unique opportunity to impact the lives of the most vulnerable of patients. With expertise in feeding/eating/drinking/swallowing (FEDS), SLTs offer clinical input as to when an infant is ready to start oral feeding as well as when an infant is ready for an exposure to an oral opportunity.

Through education to parents in the very early days of the infants' journey in the NICU, SLTs can assist parents to read and recognize the most basic of communication from their babies. The SLT can build upon the parent's abilities to recognize basic cues given by their baby and then gradually sharpen their observation skills as new challenges are presented to their infant (Shaker, 2013). This enables parents to identify the motor, behavioural and physiological responses/ communication being given by their infant, particularly while feeding. Parents often report feeling very positive about actively adding to the quality of care to their infants, which in turn fosters a stronger parent-infant bond and improved mental health outcomes for the parent and baby (Shaker, 2013; Shaker, 2018; Aloysius, et al, 2017).

With each there is an opportunity to educate parents and other members of the multi-disciplinary team (MDT) about SLT assessment protocols, results and the relevance of our findings as it impacts the infant. Ideally, participation from the parents and other key team members is encouraged when devising feeding guidelines. Best practice supports working in collaboration with the NICU team and providing a family-centred approach as much as possible, while always being sensitive to cultural diversity.

Additional responsibilities include: 1) developing evidence-based policies and procedures within the NICU that support feeding practices to fragile infants and their parents 2) contributing to the body of neonatal research.



4.0.1b Non-NICU settings

SLT has a role in delivering assessment and intervention for babies with feeding difficulties within the multi-disciplinary team in non-NICU settings. The SLT delivers similar services to these babies as is delivered to children within NICU settings. Babies in non-NICU wards can present with both complex and non-complex feeding needs.

4.0.2 Community settings

SLTs in community settings may benefit from formal/informal support from colleagues in acute setting in relation to complex cases. Shared care or transitional care from acute to community settings should be a primary aim.

SLTs may play a key role in MDT feeding assessments and clinics in a community setting.

Long term monitoring of feeding skills or feeding therapy input may be best placed in home, school or clinic environments rather than acute hospital settings; community SLTs have a key role to play in this e.g., in aversive feeding issues.

Community based SLT can provide important FEDs input for children with life limiting conditions to support FEDs needs as a condition may progress. Liaison may be required with primary medical teams and CNS for life limiting conditions.

SLTs play a vital role in implementation of FEDs guidelines and strategies following objective assessments such as videofluoroscopy.

Community based SLTs are uniquely placed to play a key role in support, liaison with hospitals, schools and MDT colleagues, families and support services.

4.1 Assessment, Diagnosis & Management of FEDS in Neonates and Babies

Should encompass:

- Conducting clinical assessment of the baby and family for FEDS disorders, including neuro-developmental assessments.
- Conducting, interpreting and reporting on comprehensive instrumental evaluation of the infant for feeding and swallowing problems that delineate structures and dynamic functions of feeding, eating, drinking and swallowing.
- Identifying normal and abnormal swallowing anatomy and physiology and identifying underlying dysfunction in order to assist diagnosis.
- Provide support and intervention/treatment for the infant's FEDS disorders (evidence-based when available).
- Remediating the presenting difficulties by devising comprehensive care plans.
- Identifying and trialing interventions to remediate or compensate for the presenting difficulties.
- Documenting progress by monitoring and modifying intervention goals as indicated
- Collaborating with other team members in identifying the need for additional assessments and consultations.
- Identifying suspected additional disorders in the upper aerodigestive tract and making appropriate onward referrals.

4.1.1 Assessment of Infants

(these babies may be seen in either acute care or non-acute care settings)

A. Non-Complex Infants (Ross, ES & Philbin, MK, 2011; Shaker, 2013) (ASHA 2002 & ASHA 2005)

- 1) Gather relevant information including medical background, current medical and feeding status of the baby, and psychosocial and cultural aspects of the family.
- 2) Assessment: Read, interpret and respond to infants' behavioural cues:
 - a) Before the feed:

- i) Assess the ability to maintain physiological stability (breathing rate, heart rate, oxygen starvation)
 - ii) Recognize readiness cues such as alertness, rooting, crying for a feed.
 - iii) Evaluation of oro-motor structures/reflexes
 - iv) Identify the maturity of the non-nutritive sucking (NNS) on a soother.
- b) During and after the feed:
- i) Assess the maturity of nutritive sucking (NS)
 - ii) Observe oral feeding and swallowing behaviours.
 - iii) Note changes in the:
 - (1) Autonomic system (breathing rate, heart rate, oxygen saturation)
 - (2) Motor/movement (postural alignment, muscle tone)
 - (3) State: ability to remain alert and engage actively in feeding; focusing on environmental stimuli)
 - (4) Identify any signs/symptoms of aspiration or other sensory observations.
- 3) Recognise and interpret additional problems that may affect infant feeding and swallowing such as: positioning, teat flow, need for external pacing, adverse environmental factors, need for objective assessment or referral onwards as appropriate.

B. Medically Complex Infants (Shaker, 2013; Jones, 2014; Gennattasio et al, 2015; Ross & Philbin, 2011; ASHA 2002 & ASHA 2005; Dalglish, S et al. 2015)

Determining readiness to feed is usually determined by the medical team and midwives (Crowe, Chang et al. 2017) however Speech and Language Therapists also have a role in this process. One of the most significant changes in the approach to initiating infant oral feeding in the Neonatal Intensive Care Unit has been a move away from using gestational age as a primary indicator, instead focusing on individualized assessment of infant's readiness cues.

- I. Once an infant has demonstrated an ability to tolerate touch, movement, being held through maintaining his/her behavioural state/physiological stability/motor state, then readiness to begin oral feeding needs to be determined.

2. For each feed thereafter, the infant's cues should be considered to ascertain readiness for a feeding event.
3. A feeding event should proceed or discontinue based on the infant's cues of participation, comfort, stability, signs of tolerance. Working together with medical teams/midwives/parents to determine an agreed plan is most important to assure consistency, which will also minimize risk.
4. Evaluating the outcome of each session will inform you whether modification for feeding events (or therapeutic tastes) needs to be modified.
5. Evaluating the infant's trends over several days can offer an overall picture, such as whether or not oxygen requirements have increased, decreased or maintained; frequency of feeding events provided, etc.

Infants on CPAP and high flow oxygen support can be offered experiences with which to build positive feeding opportunities. Protocols for feeding fragile infants in these situations are evolving and SLTs should be familiar with the most up to date practices internationally. (Canning et al 2020, Glackin et al 2017; Shetty et al 2016; Dagleish et al, 2015)

4.1.2 Assessment Tools

Assessments for Pre-Feeding Skills	
<p>Neonatal Eating Outcome Assessment Tool –NeoEAT Pineda, Harris, Foci, Roussin and Wallendorf (2017) Pados, Estrem, Thoyre et al. 2017</p>	<ul style="list-style-type: none"> Abbreviated version (first section) appropriate for infants after the age of 30 weeks PMA, to obtain a pre-feeding score
<p>Non-nutritive sucking scoring system for preterm newborns –NNS Neiva, Leone & Leone (2008) Bickell, Barton et al. 2018. Gennattasio, Perri et al. 2015, p.101</p>	<ul style="list-style-type: none"> Non-nutritive sucking in preterm infants impacts infant state, reduces defensive behaviours and affects overall feeding performance. Adequate inter-rater reliability and construct validity
<p>Premature Oral Feeding Readiness Assessment Scale – POFRAS Fujinaga, Alves de Moraes et al. Gennattasio, Perri et al. 2015 Crowe, Change, Wallace, 2017.</p>	<ul style="list-style-type: none"> 18-item scale Considered easy to administer Assesses maturity, oral-motor skills, oral-motor, neural and sucking development. Design based on a ‘pass’ or ‘fail’ outcome Considered to be a valid assessment for readiness for preterm infants to start breast feeding based on a study based with 60 preterm infants.

Assessment for Infant Oral Motor Skills	
<p>Schedule for Oral-Motor Assessment-SOMA Reilly, Skuse, Stevenson, & Mathisen (1995) Heckathorn, Speyer et al, 2015. Skuse, Stevenson et al 1995. Ko, Kang et al, 2011.</p>	<ul style="list-style-type: none"> Assessment of oral motor function in babies aged 8-24 month. Abbreviated version available for the purpose of screening babies Psychometrics show tool is valid and offers positive predictive validity.

Assessments for Bottle Feeding Skills

Early Feeding Skills- EFS

Thoyre, Shaker, &Pridham (2005)

Bickell, Barton et al, 2018.

Gennattasio et al, 2015.

Bahrami, Marofi, Farajzadegan, Behzad, 2019

Pados, Estrem, 2016

- Can be used with babies up to 52 weeks post-menstrual age (PMA)
- A 36-item assessment, which is recommended for babies with more complex feeding behaviours.
- Has acceptable inter-rater and intra-rater reliability and validity.
- Copies available on request: www.feedingflock.com

Neonatal Oral Motor Assessment Scale-NOMAS

Marjorie Meyers Palmer (1983)

Longoni et al 2018.

Bickell, Barton et al, 2018.

Zarem et al, 2013.

Gennattasio et al, 2015.

Heckathorn, Speyer, et al, 2015

Pados, Estrem 2016

Crapnell, Rogers et al, 2013

- Can be used with pre-term and term infants up to the age of 48 weeks post-menstrual age.
 - Requires certificate training (3 days)
 - Good inter-rater reliability
 - Predictive validity not supported for outcomes at 2 years of age for infants categorized with disorganized or dysfunctional sucking patterns.
- Predictive validity not supported for age at which an infant will establish oral feeds or transition off tube feeds to oral feeds.

Feeding and Swallowing Scale for Premature Infants-FSSPI

Moon, Jung, Cheon, Oh, Ki and Kwon (2017)

- For use with pre-term and term babies under the age of 3 months corrected.
- Offers assessment and structure for developing intervention to support the preterm infants' skills for FEDS.

Neonatal Eating Outcome Assessment Tool - NeoEAT

Pineda, Harris, Foci, Roussin and Wallendorf (2017)

Pados, Estrem, Thoyre et al, 2017

- Full assessment (4 sections) appropriate for infants from 30-32 PMA to 4-6 weeks post term, whether feeding already initiated or not.
- Abbreviated version (first section) appropriate for infants after the age of 30 weeks PMA, to obtain a pre-feeding score.
- Can be used for infants that are breast or bottle fed.
- Four sections assess: feeding readiness, safety, success with feeding and complex behaviours/coordination.
- Research to date indicates content validity and good-excellent inter-rater reliability.
- Has not been assessed to offer predictive validity for long-term outcomes.
- The tool is continuing to undergo continuous improvements.

Assessments for Breast Feeding Skills

<p>Early Feeding Skills-EFS Thoyre, Shaker, &Pridham, 2005 Bickell, Barton et al, 2018; Gennattasio et al, 2015; Heckathorn et al, 2015; Bahrami, Marofi, Farajzadegan, Behzad, 2019. Pados, Estrem, 2016</p>	<ul style="list-style-type: none"> • Can be used with babies up to 52 weeks post- menstrual age (PMA) <ul style="list-style-type: none"> • A 36-item assessment, which is recommended for babies with more complex feeding behaviours. • Has acceptable inter-rater and intra-rater Reliability and validity • Copies available on request: www.feedingflock.com
<p>Neonatal Oral Motor Assessment Scale-NOMAS Marjorie Meyers Palmer (1983) Bickell, Barton et al, 2018; Zarem, Kidokoro et al, 2013; Gennattasio et al, 2015; Zang, Zhou et al, 2017. Pados, Estrem, 2016</p>	<ul style="list-style-type: none"> • Can be used with pre-term and term infants up to the age of 48 weeks post-menstrual age. <ul style="list-style-type: none"> • Good inter-rater reliability • Requires certificate training (3 days) • Predictive validity not supported for outcomes at 2 years of age for infants categorized with disorganized or dysfunctional sucking patterns <ul style="list-style-type: none"> • Predictive validity not supported for age at which an infant will establish oral feeds or transition off tube feeds to oral feeds.
<p>Neonatal eating outcome Assessment Tool – NeoEAT Pineda, Harris, Foci, Roussin and Wallendorf (2017)</p>	<ul style="list-style-type: none"> • Full assessment (4 sections) appropriate for infants from 30-32 PMA to 4-6 weeks post term, whether feeding already initiated or not. • Abbreviated version (first section) appropriate for infants after the age of 30 weeks PMA, to obtain a pre-feeding score. <ul style="list-style-type: none"> • Can be used for infants that are breast or bottle fed. • Four sections assess: feeding readiness, safety, success with feeding and complex behaviours/coordination. • Research to date indicates content validity and good-excellent inter-rater reliability. • Has not been assessed to offer predictive validity for long-term outcomes. <ul style="list-style-type: none"> • The tool is continuing to undergo continuous improvements.
<p>Bristol Breastfeeding Assessment Tool-BBAT Ingram, Johnson, Copeland, Churchill, Taylor (2015) Bickell, Barton, et al, 2018 Pados, Estem, 2016.</p>	<ul style="list-style-type: none"> • Use for term infants regardless of age. • Very brief tool, consisting of 4 items. • Developed to capture changes in feeding related to tongue-tie release. • Recommended for the healthy, term infant. • Evidence for content validity; acceptable inter-rater reliability; acceptable internal consistency reliability

<p>Pre-term Infant Breast-feeding Behaviour Scale-PIBBS Nyqvist, Rubertsson, Ewald, Sjoden (1996) Heckathorn et al, 2015 Nyqvist, Rubertsson, et al, 1996</p>	<ul style="list-style-type: none"> • Describes ‘maturation steps’ with breastfeeding; differentiating behaviours for infants between different gestational ages. • Appropriate to use with infants < 33 weeks gestations age to full term.
<p>Systematic Assessment of the Infant at Breast-SAIB Shrago & Bocar (1990) Bickell, Barton, et al, 2018 Heckathorn et al, 2015</p>	<ul style="list-style-type: none"> • This is a breast-feeding check list. • Assists in early identification of breast-feeding difficulties. • Results can be used for teaching mothers and offering intervention. • For use with new-borns: age of infant not specified.

Assessment can be both a detailed and complex procedure. It involves detailed information gathering, close liaison and discussion with medical professionals, clinical assessment of the baby, and often instrumental assessment also. Assessment will need to be tailored accordingly for different client groups reflecting those populations who require more specialized levels of skills and assessment, including the neonatal population, preterm babies and tracheostomised and/or ventilated babies.

SLTS routinely conducting instrumental assessments should be familiar with standard operating procedures recommended by IASLT/ASHA/RCSLT.

Tracheostomy and Ventilator Dependent Babies

Babies who have a tracheostomy and who may/may not be ventilator dependent are a subgroup requiring specific knowledge and liaison with an experienced SLT is recommended. In December 2017, IASLT published clinical guidelines in tracheostomy management for SLTs. Working with paediatrics was incorporated into that document. All SLTs working with children with tracheostomy should consult these guidelines (IASLT, 2017).

Instrumental assessment such as a Videofluoroscopy Swallow Study (VFSS) may be indicated.

A VFSS is a gold standard assessment carried out by a speech pathologist in consultation with a radiologist to determine swallow function, level of aspiration risk and intervention planning. VFSS is currently the most commonly available instrumental assessment available in paediatrics in Ireland.

Although it is not recommended as the sole diagnostic procedure, a VFSS can provide information regarding:

- Aetiologies and symptoms of dysphagia, including risk of aspiration.
- Anatomy and physiology of the swallowing mechanism
- The need for specific texture modification of oral intake (food and/or fluid)
- The effectiveness of compensatory strategies

The application of FEES (Fibreoptic Endoscopic Evaluation of Swallowing) has been described in both neonatal and paediatric populations with a recent review looking at feasibility and safety as well as clinical utility of this instrumental assessment technique (Miller & Willging 2020). Issues remain around training and skills and competencies and close cooperation with an experienced paediatric otolaryngologist is required in order to progress with emerging service developments in this area. (NZSTA 2018; RCSLT 2020)

4.2 Legal & Ethical obligations (IASLT 2006, 2012)

- Collaborating with the family and other team members regarding management decisions for care of the baby and family.
- Advocating for services for babies with FEDS disorders and their families.

4.3 Education and training of other groups

- Providing education, counseling, and support to families, other caregivers and staff regarding preferred practices in the relevant setting to support current and future FEDS skills.
- Educating and supervising SLTs at undergraduate or postgraduate levels.
- Educating other professional colleagues.
- Providing public education and advocacy for serving babies and families in a range of settings.

4.4 Risk management

- Identifying babies at risk for and those with existing developmental FEDS disorders.
- Maintaining quality control/risk management programs.



4.5 Discharge/transition and follow up care.

- Providing discharge/transition planning and follow-up care.
- Determining appropriate discharge criteria in the context of current best practice guidelines and evidence base.

4.6 Research

- Conducting clinically based research to continually update knowledge base and skills, to enable the SLT to provide a continuum of services for babies and families in a range of settings.
- Conducting basic and clinical research in foetal and neonatal development, function and effectiveness of treatments.
- Advancing the knowledge base on normal swallowing and FEDS disorders through research activities by developing and testing hypotheses.

5.0 Treatment of FEDS Disorders in Neonates and Babies

A recent systematic review of feeding interventions in paediatrics (Gosa et al 2017) highlighted that despite insufficient quantity of evidence to determine the effects of oral motor, sensory, and pharmaceutical therapies on functional feeding outcomes in paediatric populations, there is larger body of phase I evidence that establishes the efficacy of behavioral strategies to treat some swallowing and feeding difficulties in small cohort and single subject studies. The review concluded that there were limited high quality (phase 4) research articles that establish the efficacy and benefit of joint nutrition and behavior intervention programs and systematic desensitization and operant conditioning behavioral therapy approaches to improve functional feeding and swallowing outcomes in children. There are RCTs in the neonatal literature looking specifically at oral stimulation protocols (Greene 2016, Arora 2018, Fucile 2018) and swallowing stimulation protocols (Lau et al 2012, Rodriguez et al 2015) and their impact on feeding. Many of these may also be applicable to an older cohort of infants who are at a similar developmental stage and SLTs are encouraged to look beyond ‘age’ when designing interventions programmes for their patients.

Table 5: Knowledge and skills specific to FEDS Management in Neonates and Babies

<i>A Therapist working with this group should have knowledge of</i>	<i>A Therapist working with this group would be expected to be able to implement the following during treatment;</i>
<p data-bbox="199 1624 774 1758"><i>Infant anatomy, physiology and neurology for both normal feeding and oropharyngeal swallowing development, and where this development may differ.</i></p> <p data-bbox="199 1792 774 1937">Als 1986, Wolf & Glass 1992, Brazelton 1995, Gewolb et al 2006, Hawdon et al 2000, Miller 2002, Carnaby 2012, Dodrill 2016a, Sanchez et al 2016, Harding et al 2018 a, b</p>	<p data-bbox="805 1624 1460 1724">Identify and understand how underlying anatomic, physiological, neurological and systemic issues impact on the infant.</p> <p data-bbox="805 1724 1460 1859">Use that information to structure and implement an appropriate feeding management plan, comprising both direct and compensatory interventions in conjunction with the MDT.</p>

<p>Impact and management of co-morbid medical conditions, including environmental influences.</p> <p>Morris & Klein 2000; Wolf & Glass 1992; McCurtin 1997; Dietrich et al 2005, Jadcherla et al 2016, Moore et al 2012 (Epicure) Eichenwald et al 2001, Edwards et al 2012, Caskey et al 2014, Sajjadian et al 2017, Edwards & Austin 2016, Dodrill 2016b, Hirst et al 2017, Zimmerman et al 2018</p>	<p>Understand the impact of</p> <ul style="list-style-type: none"> • NICU/infant ward/other environments • co-morbid illnesses • medications • mechanical medical interventions • noise level, lighting, room temperature. • cultural and social influences <p>on the infant both in terms of feeding and swallowing and communication</p> <p>The SLT should understand that these factors may dictate the course of intervention chosen, and when interventions are likely to be helpful or not at a particular time.</p> <p>The SLT should recognise appropriate timing of interventions as an infants' underlying condition evolves which may impact positively or negatively on neurological, physical, cognitive, developmental, oral motor, behavioural and feeding status.</p>
<p>Models of infant driven feeding and cue-based feeding</p> <p>McCain et al 2001; 2002, White-Traut et al 2005, Kirk et al 2007, Thoyre et al 2013, Ross et al 2011, Kish 2013, Wellington & Perlman 2015, Chrupcala et al 2015, Dodrill 2016c, Osman 2019</p>	<p>Liaise with the MDT to provide the infant with opportunities where possible to support the infant's own drive for oral feeding e.g.</p> <ul style="list-style-type: none"> • Feeding infant on demand, allowing infant to wake for tube feeds. • Reducing/rescheduling tube feeds to promote hunger. • Understanding infant signs of readiness to feed • Understanding infant signs of distress and knowing when to stop feeding the infant. • Know how to support an infant to regulate themselves
<p>Normal and abnormal patterns of movement and how to facilitate postural stability.</p> <p>(Morris & Klein 2000; Arvedson & Rogers 1997; McCurtin 1997, Winstock 2005; Clark et al., 2007, Thoyre et al 2012, Dodrill 2016c)</p>	<p>Liaise with the MDT to support infants with difficulties in</p> <ul style="list-style-type: none"> • postural alignment (hyperflexed, extended), • muscle tone (hypotonic, hypertonic or mixed), • movement patterns in extremities, trunk, head and face, and level of motor activity. <p>Use compensatory postures and/or supportive positioning (e.g., providing swaddling, placing in a side lying or upright positions, chin tuck) or supportive seating to achieve postural stability for feeding, facilitating more typical patterns of movement e.g., hands to mouth, hands to centre, core stability and correct head/truck position for feeding.</p>
<p>Primitive reflexes, stages of suck pattern development and feeding skill development.</p> <p>(Bragelien et al 2007; Fucile et al 2012, 2011, 2005, 2002; Harding 2015; Wolf & Glass 1992; Lau 2006; Clark et al 2007; Collins 2004, Pickler et al 2006, Lau & Smith 2011, Dodrill 2016a, c)</p>	<p>Determine which direct interventions best facilitate oral skills and sucking skills in the infant.</p> <ul style="list-style-type: none"> • Direct oral stimulation by finger stimulation protocol (Lessen-Knoll et al 2019; da Rosa Peirera et al 2020; Greene et al 2016, Fucile et al 2002, 2003, 2011, 2012, 2018, Harding 2012, 2014, Lessen et al 2011, Arora 2018)

	<ul style="list-style-type: none"> • Use of soother/soother dips during tube feeds (Harding 2009, 2012, 2014 a, b; Bingham 2010) • Direct swallow stimulation techniques (Lau & Smith 2012) • Direct modification of the oral feeding activity e.g. <ul style="list-style-type: none"> ○ pacing/limiting sucks per burst. ○ limiting oral volumes at each feed ○ providing cheek/ jaw support during feeding (Boiron et al 2007) <p>Determine which compensatory techniques will help support feeding skill development.</p> <ul style="list-style-type: none"> ○ Swaddling (Van Slewen et al 2007) ○ Positional changes e.g., Semi-elevated side lying or upright positions to achieve postural alignment (Girgin et al 2018; Park et al 2018; Park et al 2014; Thoyre et al 2012) ○ Modification of the food and fluid consistency to control bolus flow (Madhoun et al 2016, IDDSI, HSE 2018, Kwok et al 2017; Collins et al., 2004; Daniel et al 2019; Gosa et al 2015, 2016; Mizuno & Ueda, 2002) ○ Other sensory stimulation e.g. olfaction (Khodagoli et al 2018) or Music (Standley 2012) ○ Utensils which may assist with introduction of oral feeding and modify flow rate. <ul style="list-style-type: none"> ▪ Spoons (Kumar 2010) ▪ Finger feeding (Moreia et al 2017) ▪ Cups (Moreia et al, 2017, Collins et al, 2004; Flint & Davies, 2007, 2016; Gilks et al, 2004; Mosely et al, 2001; Rocha et al, 2017; WHO 2011, 2019) ▪ Teats (McGrattan et al 2017; Pados et al 2015; Harding & Bell 2019; Pados et al 2019) ▪ Controlled flow vacuum free bottles (Fucile 2009; Fewtrell 2012) <p>Advise on techniques to diminish or avoid an oral/tactile aversive behaviour due to the presence of feeding tube, suctioning or other adverse medical procedures</p>
<p>Importance of Oral Hygiene and Mouth Care The principle objective of mouthcare in any patient population is to maintain the mouth in</p>	<p>Liaise with the MDT to ensure optimal mouth/oral care. Specific aims of mouth care include:</p>

good condition. The effects of Oropharyngeal Administration of Mother's Milk (OPPAM) i.e., using colostrum for oral care protocols in all premature infants in NICU before the onset of oral feeding is being studied currently in a multicenter trial (Rodriguez et al 2015; Nasuf et al 2018) with the impact on transition to oral feeding as one of the outcomes of interest. (Bravery, et al, 2014, Thames Valley & Wessex Neonatal Operational Delivery Network 2016, EFCNI 2018)

- Keep the oral mucosa clean, soft, moist and intact, thus decreasing the risk of oral and systemic infection.
- Keep the lips clean, moist and intact.
- Remove debris without damaging the mucosa.
- Alleviate pain/discomfort, and for some patients enabling oral intake.
- Freshen the mouth.
- Increase general wellbeing.
- Advocate the use of colostrum and breast milk for oral care where applicable.

Breastfeeding and Breastmilk feeding supports

Understand how to support a mum who wants to

- Breastfeed her infant.
- Provide breastmilk for her infant via feeding tube or bottle.

(Skaaning et al 2020; UNICEF/WHO 2009, Dodrill 2016c, WHO 2017, Kim et al 2018, Fucile et al 2018, Karimi et al 2019)

SLT should liaise with lactation advisors where available.

The SLT role in breastfeeding involves;

- advising on optimal positioning of baby to breast to facilitate postural and respiratory stability and achieve best latch possible.
- Encourage skin to skin opportunities for oral stimulation at the breast and physiologic stability.
- Direct oral stimulation to promote oral skills for sucking where applicable (Fucile 2018)
- Assist with ensuring infant has appropriate oral skills to achieve deep latch for sucking.

The SLT role in breastmilk feeding involves

- Supporting skin to skin opportunities and oral stimulation at the breast (if medically safe) to help boost maternal milk supply and maternal wellbeing.
- Assisting the transition from tube to breastfeeding by implementing supports around oral skills, sucking and position as above where necessary

Transitioning from tube feeding to oral feeding

The therapist should know

- the different methods of tube feeding (nasogastric, nasojejunal, PEG (Percutaneous Endoscopic Gastrostomy), PEJ (Percutaneous Endoscopic Jejunostomy) (ASPEN 2002, Blumenstein et al 2014)
- Rationale for type of tube employed.
- Positive and adverse effects of feeding tubes

- Identify when an infant is showing signs of tube dependency (Dunitz-Scheer et al 2009; 2011)
- Identify when an infant is showing signs of readiness to attempt oral feeding (Morag 2019; Lubbe 2019; White-Traut et al 2005; Crowe 2012; Harding et al 2018)
- Establish that the infant has reasonable oral skills and appropriate developmental skills to attempt oral feeding e.g., reasonable sucking, swallows' own secretions, hands to mouth achievable.
- Provide oral skills/stimulation advice and intervention where required (Greene 2016; Lubbe 2019)

<ul style="list-style-type: none"> • Feed schedules e.g., Difference between bolus feed schedules versus continuous feed schedules • Some co-morbid medical conditions may exclude full feeding tube weaning e.g., some metabolic conditions, problems with blood sugar management, neurological conditions where feeding endurance may be an issue. • How to identify feeding tube dependency and the negative impact it can have on the infant (Dunitz-Scheer et al 2009; 2011) 	<ul style="list-style-type: none"> • Identify oral feeding opportunities in the infant's existing tube feeding regime (Morag 2019) • Semi-demand feeds moving towards demand feeds (McCain et al 2001/2002; Lubbe 2019) • Liaise with the MDT and dietitian in order to manipulate infant tube feeds to promote increased hunger during the day (Byars KC et al 2003, Dovey et al 2013) • Support parents who are helping their infant transition from tube to oral feeding (Morag 2019) • Ensure infant who transitions to full oral feeding continues to make developmental gains and advance to a range of textures as appropriate following national and international solid weaning guidelines (HSE 2018, D'Auria E et al 2019, bliss.uk.org)
<p>Parent and caregiver skills Parent/carer education and training is an integral part of FEEDS disorder management in the paediatric population and is should be incorporated into all of the above categories. (Craig 2013, White-Traut et al 2013, Dodrill 2016c, Harding et al 2019)</p>	<ul style="list-style-type: none"> • Providing clear/concise and accurate information and guidelines • Demonstrating skills for parents/carers to use for feeding their baby. • Assessing the parent's competency in integrating/using skills that have been provided by the SLT. • Liaise with other MDT members in supporting parents/carers develop new skills and manage stressful feeding situations
<p>Multidisciplinary Nature of FEEDS Management SLT should</p> <ul style="list-style-type: none"> ○ be aware of all roles of the other members of the MDT in their setting and should liaise with and refer to as appropriate. ○ Seek support from SLT colleagues in other centres for clarity on medical or other issues as required. 	<p>Liaise with all relevant MDT members in relation to</p> <ul style="list-style-type: none"> ○ Medical and nursing issues ○ Medications/Medical interventions ○ Co-Morbid conditions ○ Postural or movement issues ○ Lactation advice ○ Developmental issues ○ Feeding tube issues ○ Parent/Caregiver support ○ SLT colleagues in other centres for support or input

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IASLT Feeding, Eating, Drinking and Swallowing Disorders: Working with Neonates and Babies Working Group

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Enable Ireland Meath Early Services

Children's Health Ireland at Crumlin

Cork University Hospital/

Cork University Maternity Hospital

Appendices

Appendix 1: Core References/Textbooks

Appendix 2: Other Resources

Appendix 1

Core texts and references

Arvedson, J.C., & Rogers, B.T. (1997) Swallowing & Feeding in the paediatric patient, chapter in Perlman, AL and Schulze-Delrieu, K (1997). Deglutition & its disorders: Anatomy, Physiology and clinical diagnosis and management. San Diego: Singular Publishing.

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 IRISH ASSOCIATION OF SPEECH & LANGUAGE THERAPISTS

Useful journals

Dysphagia Journal (*Dysphagia*)

Journal of Paediatric Child Health (*J Ped Ch Health*)

Journal of Neonatal Nursing (*JNN*)

Journal of Perinatology (*Perinatology*)

Pediatrics (*pediatrics*)

Developmental Medicine and Child Neurology (*dev med and child neurol*)

Journal of Parenteral Gastroenterology and Nutrition (*JPGN*)

Neonatal Networks (*Neo Net*)

The Cochrane Library www.cochranecollaboration.com

Appendix 2

Please refer to the members section on the IASLT website www.iaslt.ie for a list of special interest groups

RCSLT/ ASHA Division 13– members will have access to special interest groups.

