Chapter 22: Children with feeding difficulties

Carolyn Anderson

Learning outcomes

By the end of this chapter the reader should:

1. recognise the factors which need to be taken into account when assessing a child with feeding difficulties;
2. know the extent of the evidence base for intervention and management;
3. be aware of the importance of a team approach in assessment and intervention;
4. be aware of the importance of taking a holistic approach to a child’s overall needs;
5. understand some of the main aspects which need to be considered when making decisions about children with feeding difficulties.

Introduction

Eating and drinking are normally pleasurable experiences. But children with physical disability, chronic medical conditions, or severe to complex learning disabilities are more likely to have eating problems which make mealtimes distressing or may compromise their health. Swallowing or deglutition involves coordinating muscle movements in the lips, tongue, palate, pharynx, larynx and oesophagus. There are three phases, oral, pharyngeal and oesophageal, and children may have difficulties in one or more of these areas.

Dysphagia is defined as eating and drinking difficulties that occur in the oral, pharyngeal or oesophageal phases of swallowing (RCSLT 2006). ‘Feeding difficulties’ is therefore a wider term including problems at mealtimes that are based on motivation or skills, such as food refusal, and developing self-feeding (Field, Garland and Williams 2003). Problems with co-ordinating a swallow may result in aspiration where food or liquid passes into the trachea (Arvedson 2008). Children usually cough or choke when this happens but there may be no indication of problems in silent aspiration. Frequent chest infections may therefore be a sign of silent aspiration (Prasse and Kikano 2009). Gastro-oesophageal reflux (GOR) occurs when stomach contents are regurgitated into the oesophagus. For some children, GOR irritates the oesophagus resulting in pain and discomfort during and after feeding. There is a high incidence of GOR with more severe feeding difficulties (Field, Garland and Williams 2003).

Signs and symptoms

Feeding difficultiesare observable bysuch clinical signs as failure to thrive, delayed development of oral feeding skills, aspiration of food or liquid into the lungs often indicated by choking and coughing, or problems in moving from non-oral to oral feeding (Lefton-Greif and Arvedson 2007). Arvedson (2008) identified a number of indicators of feeding difficulties including the length of time for feeding (over 30 minutes), being dependent for feeding beyond the age when this would be expected in typical development, food refusal, failing to gain weight and difficulties with breathing when feeding. Parents may also report stressful mealtimes (Sullivan *et al*. 2002).

Causes of feeding difficulties

Feeding difficulties can arise from many congenital or acquired conditions (RCSLT 2006), which can be broadly grouped into behavioural, developmental, structural or respiratory causes. Behavioural causes can be due to a number of factors. Gastro-oesophageal reflux can cause food aversion when infants and children associate feeding with painful GOR. Critical periods of development may be missed if children are on non-oral feeding programmes during these times and their appetite and hunger responses may change in these regimes (Fischer and Silverman 2007). Behavioural causes also include food selectivity, for example, in autism where children refuse to eat different types of food or textures due to sensory disturbances (Field, Garland and Williams 2003) Feeding difficulties due to developmental delay are usually associated with prematurity, learning disabilities, or with neurological conditions such as cerebral palsy. Children with severe motor involvement are more likely to have eating and drinking difficulties (Andrew and Sullivan 2010). Structural causes include cleft lip and palate, oesophageal and craniofacial abnormalities. Respiratory or cardiovascular problems can also affect feeding.

Working with paediatric dysphagia

Guidelines for paediatric dysphagia and the current position on pre-registration and postgraduate recommendations are available from RCSLT (RCSLT 2005). Risk management, including health and safety issues, is the responsibility of employers, and therapists should be aware of local policies and procedures. In the UK, therapists develop their experience and application of theory via post-graduate training, often by working under supervision (RCSLT 2006). An understanding of normal development is needed to identify differences, delay and difficulties in the sequence (Delaney and Arvedson 2008). The therapist should be aware of the aetiologies of dysphagia, and the physical and neurological implications of different conditions and syndromes (see Cichero and Murdoch 2006 for an overview). Therapists use knowledge of oral anatomy and physiology, neurophysiology and the neurology of swallowing in children as a reference point from which to evaluate structure and function (Arvedson 2006). An understanding of the co-ordination of breathing and swallowing is necessary in assessing the risks that may be involved in choking, aspirating, and coughing (Delaney and Arvedson 2008).

The multidisciplinary team

A multidisciplinary team is essential in managing complex feeding problems in children (RCSLT 2005; Arvedson 2006; Andrew and Sullivan 2010). The composition of the team may include the child, depending on age, the parents, paediatricians, nurses, educational staff, dieticians, physiotherapists, occupational therapists, psychologists, social workers, and radiologists (Andrew and Sullivan 2010). If a team does not exist, the speech and language therapist should liaise with relevant professionals as required during the course of assessment and intervention.

Assessment

Evidence-based decision making will combine clinical judgement from assessment data with research evidence and the child and family’s values and expectations (Arvedson and Lefton-Greif 2007). The aim of observation and case history taking is to evaluate the function of the airway for safe swallowing, and to help the child reach their potential in feeding skills while achieving sufficient nutrition (RCSLT 2006). In addition to the child’s health status, clinicians should consider issues for parents around mealtimes, including parent-child interaction (Arvedson 2008). The assessment process should enable the clinician to determine if a feeding problem exists and whether the difficulty is behavioural and/or functional in nature. For functional difficulties, assessment should identify which phase or phases of swallowing are affected and evaluate what techniques may help.

Joint assessment is preferable, but video evidence may be useful if the team cannot assess at the same time. Parental involvement is essential in the assessment, not only for case history taking but also for observations of eating routines at home.

Case history information

The aim of gathering background information is to identify the cause and nature of the eating difficultyin order to focus the assessment observations on factors that influence the problem and should include the following areas.

1. The eating problem as indicated by the referring agent and by the child’s parents.
2. The child’s medical history including any medical diagnosis. In addition, information about the child’s birth and developmental history including if possible the pattern of weight gain; medications; hospitalisation; surgical interventions or investigations such as videofluoroscopy; general health and history of chest infections; food allergies and bowel habits.
3. Details of the child’s feeding history covering: previous feeding experiences and methods of eating including oral or tube feeding; associated difficulties including gastro-oesophageal reflux; vomiting; dietary preferences; nutritional supplements and previous feeding interventions.
4. Information about present eating patterns outlining: the time taken for meals; the child’s and family’s daily eating timetable; the quantity eaten; food preferences in texture, temperature and tastes; utensils used, variations in seating and positioning; people involved in feeding the child and factors which make child’s eating more difficult, such as catarrh.

Arvedson (2006) recommends that therapists should ask four key questions during assessment. The length of time for meals is the first question as feeding sessions of longer than 30 minutes are of concern. The second question is about whether meals are stressful. The third question is whether the child has any respiratory difficulties including rapid breathing, ‘gurgly’ voice quality or increases in nasal congestion. The final question is about whether the child has gained weight in the last two to three months. Morris and Klein (2000) provide further suggestions for case history questions. Speech and language therapists also need to find out which other professionals are involved and identify any safety issues.

Feeding assessment

The child’s eating and drinking should be observed following the case history taking and parental interview. RCSLT Clinical Guidelines (RCSLT 2005) list areas that should be considered in the clinical evaluation; some of these areas are outlined below. Feeding skills should be compared to the developmental stages for the child’s chronological age. Assessment checklists such as Jays Observational Assessment of Paediatric Dysphagia (Hibberd and Taylor 2005), and the Schedule of Oral Motor Assessment (SOMA) (Reilly, Skuse and Wolke 2000) provide structure for observations of eating in infants and older children. These observations can be used as a baseline measure for noting changes over time. Oral motor evaluation should include observation of eating and drinking movements in relation to muscle and cranial nerve involvement (Hibberd and Taylor 2005).

A detailed oral motor assessment of the child is recommended. Assessment should include the appearance and function of the oral area in order to note facial symmetry; oral reflexes which may interfere with the development of any new eating skills; the movement of the jaw, lips, and tongue during eating; palatal movement; the teeth and dental hygiene, and breathing patterns (Morris and Klein 2000). The aim of oral motor assessment is to identify whether there are oral sensory or oral motor difficulties or a combination (Arvedson 2008).

Eating and drinking skills such as sucking, swallowing, biting and chewing need to be evaluated as part of the assessment process. The swallowing assessment will include how the child copes with different consistencies of food and liquid, different tastes, temperatures, and food presentations such as amount and rate. It is also important to note the influence of reflexes on these patterns, any sensory aspects such as tolerance of touch, hypersensitivity and hyposensitivity as well as whether the child is able to self-feed and how he/she copes with different food textures. Morris and Klein (2000) and Winstock (2005) outline normal and abnormal patterns for these aspects of eating.

Assessment should include head control and the effect of head control and posture on eating skills, muscle tone, patterns of flexion and/or extension, the presence of primitive reflexes and their relation to the child’s developmental level. Restraints and methods of release also need to be noted as well as the relative heights of the tables and chairs, and the position of the feeder. Collaboration with a physiotherapist and/or occupational therapist is essential if speech and language therapists do not have extensive experience in assessing physical development. Bower (2009) outlines physical development and handling skills used with children with physical disabilities, principally cerebral palsy.

Other factors that may affect management should also be considered including emotional, social and environmental factors. These factors include the interaction between the child and parent; methods of communication; environmental factors; behaviour, and the organisation of the child's eating programme (Morris and Klein 2000). Eating should be evaluated in different settings if the child is fed at school as well as at home and the results from these settings should be compared for any differences in the process or feeding methods used. Assessment may also involve experimenting with different positions for eating or testing different textures to determine which consistencies facilitate the child’s eating skills. Following these investigations, referral to other agencies may be necessary. For example, referral to a clinical psychologist may be appropriate if a child has behaviour problems which interfere with mealtimes but no mechanical eating difficulties (Fischer and Silverman 2007).

Instrumental assessment

Further investigations such as instrumental assessments may be required to check the child’s feeding status. If the child is judged unable to eat or drink safely, they may be at risk of aspiration (da Silva, Lubianca Neto and Santoro 2010). When aspiration is suspected, the assessment team will need to determine whether oral feeding presents a risk to the child and may request instrumental investigations. Guidelines on invasive procedures are available from RCSLT(2005); these outline the use in assessment of fibreoptic endoscopic evaluation of swallowing (FEES) and the vocal tract; and radiological imaging, commonly known as videofluoroscopy swallow study (VFSS) (Arvedson 2006). VFSS enables clinicians to view the pharyngeal phase of swallowing and is an accurate method of identifying aspiration, especially silent aspiration (De Matteo, Matovich and Hjartarson 2005). The aim is to determine whether aspiration occurs before, during or after a swallow, and whether there is any difference with different consistencies (Arvedson 2008). If aspiration is confirmed, the decision may be taken by the team to opt for non-oral feeding as discussed below.

Management

For children with feeding difficulties, eating becomes an important part of their education and care. Not only is itvital for nutrition and health, but also it provides an opportunity to establish early bonding and develop social communication. Intervention aims are to treat the child taking their overall needs into account, to ensure safe nutrition, to develop eating skills, to improve the quality of mealtimes and to encourage social communication (Winstock 2005; RCSLT 2006). Intervention depends on a number of factors including the child’s current medical condition, nutritional status, psychological state, level of development, and prognosis (RCSLT 2005).

Deciding on management aims with multiple factors is often a complex process so team decisions are vital. Parents and carers have a key role in intervention and will be involved through goal setting, training and evaluation of home programmes (RCSLT 2006; Ayoob and Barresi 2007). Multidisciplinary team working is good practice in feeding interventions and will require training parents, carers and other professionals to deliver the intervention consistently (RCSLT 2006).

Developing aims for intervention

Intervention is based on knowledge of normal development (Arvedson 2006) for oral-motor development and the acquisition of feeding skills. The assessed developmental level in eating is compared to the child’s chronological age, and with parental expectations to identify goals. The child’s medical condition, physical abilities, learning disabilities and behavioural influences may all have an effect on recommendations for intervention. The main aims addressed at this stage of management of the child are medical, nutritional, habilitative, and social; these aims are outlined below. Any modifications should be recorded to enable their effect to be measured accurately (RCSLT 2005).

Medical aims relate to reducing aspiration risks and improving health for the child; where a child is assessed as having an unsafe swallow, non-oral feeding should be instigated. Changing posture and head position, texture modification, and training carers to use techniques consistently may be effective in reducing the risk of aspiration. CQ3 (RCSLT, 2006) recommends maximising development of motor skills including using the optimum posture to reduce the risk of aspiration and provide a stable background for voluntary movements. The optimum posture is aligned with a chin tuck to increase airway protection. There is consensus that the position of the child when eating is an important factor to consider in intervention (Bower 2009; Winstock 2005). However, a review of studies found that aspiration still occurred in children with cerebral palsy when they had optimum postural adjustments (West and Redstone 2004).

Nutrition is increasingly recognised as vital not only for health, development and growth but also for a child’s daily state of alertness and wellbeing. For this reason nutritional and hydration aims are often a priority in planning intervention (Kirby and Noel 2007; Gisel 2008). Length of time taken for meals was highlighted as a priority indicator in assessment and would be considered in intervention. Winstock (2005) notes that the bulk of nutritional intake is consumed in the first 20-30 minutes of a meal. Where nutrition and hydration intake is too low for a child, non-oral feeding should be considered.

Habilitative aims may range from developing independence and reaching a child’s developmental potential, to improving the quality of life. Management may include working toward parents’ acceptance of their child’s eating difficulties to adjusting to the changing effects of a degenerating condition. The child’s developmental level of functioning will guide intervention planning (Arvedson 2008), with adaptation where appropriate for their chronological age. Morris and Klein (2000), Bower (2009), and Winstock (2005), provide comprehensive intervention advice based on developmental considerations.

Habilitative intervention strategies may include direct therapy for improving oral-motor skills which has been shown to be effective in children with cerebral palsy and moderate eating difficulties (Gisel 2008). Studies cited by Gisel show that gains were made in food retention, and the development of biting and chewing. However, in a review of the literature, Arvedson *et al*. (2010) found no conclusive evidence for efficacy of oral motor exercises in improving feeding.

Intervention to develop eating and drinking skills may include changes in positioning, texture modification and increasing tolerance for food textures and tastes, and altering feeding procedures such as adjusting volume and rate of presentation of food. There are critical periods in development when children are ready to move onto different food textures and intervention expectations should be sensitive to these periods (Arvedson 2006). Published material such as parent handouts are useful for general advice in working with children with special needs (Klein and Delany 1994); many of these resources are available online.

Social goals include, for example, creating communication opportunities during meals, signalling choices, reduction of drooling or enabling the child to cope with distractions. Arvedson (2006) cautions that careful management is needed to avoid children becoming stressed by altering feeding routines in intervention.

Non-oral feeding

Non-oral feeding may be the management choice for children where aspiration presents a serious health risk or for those with neurological impairments such as cerebral palsy who cannot meet their nutritional needs due to persistently inadequate oral intake (Rogers 2004). Short-term intervention may involve naso-gastric tube feeding. Surgical options for longer-term difficulties include percutaneous endoscopic gastrostomy (PEG); research has shown that this is a viable option for children with severe feeding difficulties and problems gaining weight (Rogers 2004; Davis *et al.* 2010). However, there are risks of overfeeding and excessive weight gain with gastrostomy and GOR can increase following the operation (Andrew and Sullivan 2010). The evidence remains inconclusive on the preferred intervention for GOR following gastrostomy (Vernon-Roberts and Sullivan 2007). Sullivan *et al.* (2004) also note that quality of life may improve for parents. However, clinicians should be aware of potential negative consequences of tube feeding in their decision-making with families (Davis *et al.* 2010).

Morris and Klein (2000) offer practical management for the transition from tube to oral feeding. There is limited evidence for behavioural interventions to help children make the transition from tube to oral feeding; see Davis *et al*. (2010) for a summary. Mason, Harris and Blissett (2005) reviewed the literature on tube feeding and transition to oral feeding. They identified factors affecting the development of oral skills including age of transition and ensuring that children have taste/texture experiences during critical developmental periods. There is some research support for oral motor interventions, specifically non-nutritive sucking (NNS) to maintain skills during non-oral feeding and oral stimulation in producing positive outcomes for eating/drinking skill development (Arvedson *et al*. 2010). However, further studies are required to address methodological issues. The decision between oral and non-oral feeding options must be accepted as the joint responsibility of the team. Team involvement in the decision-making process is illustrated by the following case example.

Case example

Ben is a 10 year old boy who has always been orally fed. He has severe athetoid cerebral palsy and epilepsy. He has a history of slow eating and poor weight gain. His paediatrician is concerned because his weight has been falling for the last six to twelve months. She raises the possibility of PEG with Ben’s speech and language therapist and his parents. The therapist reports that Ben has made minimal progress in his feeding programme. He has been able to take pureed food without regurgitation for some time, but attempts to change textures have been unsuccessful. Ben’s parents are positive in their attitude to PEG as some of the other children in Ben’s school have had the operation with good results. However, they are concerned that Ben continues to have some oral feeding so he can join the family mealtimes. The therapist is aware that research has found that oral feeding is important to families. She is also aware of the types of support that families find helpful (Sleigh 2005). The options for support and the mixed oral/non-oral feeding programme are discussed with the parents, dietician and the school before the operation.

Implementing the intervention plan

Following formulation of an intervention plan, the speech and language therapist is responsible for ensuring that personnel involved in implementing the plan understand their role and use the recommended strategies. Depending on the therapist’s role within this plan, s/he may be providing a consultation service or may be involved in direct training and supervision (RCSLT 2006). Ayoob and Baresi (2007) support regular training for carers on implementing home programmes as an effective method of promoting maximum progress in intervention. Harding and Halai (2009) found that experienced teachers had difficulty judging how to modify textures and thicken liquids until they had specific training. They recommended that speech and language therapists demonstrate feeding goals along with training to support feeding programmes in educational settings. Training could include opportunities for communication at mealtimes, increasing understanding about the risks of aspiration and the importance of positioning, to increase adherence to programmes (Ayoob and Baresi 2007).

Awareness of different attitudes to food and eating practices must be considered in recommending changes to feeding patterns. Increasing cultural diversity in the UK means that clinicians must be aware of how to overcome potential barriers to including parents in the decision-making process. There may be different beliefs about disability, nutrition, children’s health needs, and feeding practices, for example, at what age solids should be introduced (Davis-McFarland 2008). Communication is a key part of the process of agreeing shared goals while respecting cultural values, dietary preferences or religious differences.

Recognition of a wider training role and the need for liaison with different services will require extra time allocated for these responsibilities. It may be possible to extend the service to provide a preventative role that may prove effective in early intervention, possibly reducing some dysphagia problems, although further research is required toestablish the efficacy of such an approach.

Balancing needs

A holistic approach to any child with eating problems is essential as these are often part of a larger picture of needs which include educational, social and emotional needs. Within this wider context, a feeding programme may not necessarily be the primary focus of intervention. Flexibility is also required in planning in order to be able to respond to a child’s changing abilities and needs. The implementation of planned aims may need modification depending on factors such as available resources, parental attitudes or school policies. Intervention may not always be a preferred course of action, for example, in safe feeding where there is little prospect of change, where there is limited supportfrom carers or when the child uses good compensatory techniques with no risks to their health.

Ethical issues

Decision-making is defined as the process which ‘results in the therapist determining the best course of action at the time given the particular set of circumstances’(RCSLT 2006, p. 33). Therapists are advised to consider ethical principles along with any applicable legal principles, clinical evidence, options in relation to risks/benefits and to involve the client and parents/carers in decision-making.

When faced with ethical decisions, Arvedson and Lefton-Greif (2007) advise that the team consider options from the child’s best interests. They review some of the literature relating to ethical decisions for premature babies, children with complex needs, and in palliative care. They highlight the need for clinicians to consider children holistically and to be sensitive to stress on families, especially where children have long-term disabilities.

Summary

The main considerations in assessing and managing eating and drinking difficulties in children have been outlined in this chapter. Feeding has been considered in relation to causes and signs of difficulty. The impact of feeding difficulty also needs to be assessed in relation to lengthy, stressful mealtimes, respiration and weight gain.

A holistic approach is essential in management of eating and drinking difficulties in children. Feeding difficulties may be of short duration or long term, requiring consideration of changes due tomaturation and the growing child’sneeds. There is increasing evidence from research to help clinicians reach evidence-based decisions on management. However, as feeding difficulties are usually linked with physical, cognitive or behaviour difficulties, the influence of multiple factors continue to make decision-making a complex process.

**REFERENCES**

Andrew, M., and Sullivan, P., 2010, Feeding difficulties in disabled children. *Pediatrics and Child Health*, **20**, 7, 321-326.

Arvedson, J., 2006, Swallowing and feeding in infants and young children. *GI Motility online*, doi:10.1038/gimo17.

Arvedson, J., 2008, Assessment of pediatric dysphagia and feeding disorders: clinical and instrumental approaches, *Developmental Disabilities Research Reviews*. **14**, 118-127.

arvedson, J., clark, k., lazarus, c., schooling, t., and FRYMARK, T., 2010, The effects of oral-motor exercises on swallowing in children: an evidence-based systematic review, *Developmental Medicine and Child Neurology*. **52**, 11, 1000-1013.

Arvedson, J., and Lefton-Greif, M., 2007, Ethical and legal challenges in feeding and swallowing interventions for infants and children. *Seminars in Speech and Language*, **28**, 232-238.

Ayoob, K., and Barresi, I., 2007, Feeding disorders in children: taking an interdisciplinary approach. *Pediatric Annals*, **36**, 8, 478-83.

BOWER, E., (Ed.), 2009, *Finnie’s handling the young child with cerebral palsy at home, 4th edition.* Burlington, MA: Butterworth-Heinemann Elsevier.

CICERO, J., and MURDOCH, B., 2006, *Dysphagia: foundation, theory and practice*. Chichester: John Wiley and Sons.

DA SILVA, A., LUBIANCA NETO, J., and SANTORO, P., 2010, Comparison between videofluoroscopy and endoscopic evaluation of swallowing for the diagnosis of dysphagia in children, *Otolaryngology-Head and Neck Surgery*. **143**, 204-209.

Davis, A., BRUCE, A., COCJIN, J., MOUSA, H., and HYMAN, P., 2010, Empirically supported treatments for feeding difficulties in young children. *Current Gastroenterology Reports*. **12**, 189-194.

DAVIS-MCFARLAND, E., (2008), Family and cultural issues in a school swallowing and feeding program, *Language, Speech and Hearing Services in Schools*. **39**, 199-213.

Delaney, A., and Arvedson, J., 2008, Development of swallowing and feeding: prenatal through 1st year of life. *Developmental Disabilities Research Reviews*. **14**, 105-117.

DE MATTEO, C., MATOVICH, D., and HJARTARSON, A., 2005, Comparison of clinical and videofluoroscopic evaluation of children with feeding and swallowing difficulties, *Developmental Medicine and Child Neurology*. **47,** 249-257.

Field, D., GARLAND, M., and WILLIAMS, K., 2003, Correlates of specific childhood feeding problems, *Journal of Paediatric Child Health*. **39**, 299-304.

Fischer, E., and Silverman, A., 2007, Behavioral conceptualization, assessment, and treatment of pediatric feeding disorders, *Seminars in Speech and Language*. **28**, 223-231.

GISEL, E., 2008, Interventions and outcomes for children with dysphagia. *Developmental Disabilities Research Reviews*. **14**, 165-173.

Harding, C., and Halai, V., 2009, Providing dysphagia training for carers of children who have profound and multiple learning disabilities, *British Journal of Developmental Disabilities*. **55,** 1, 33-47.

HIBBERD, J., and TAYLOR, J., 2005, *Jays Observational Assessment of Paediatric Dysphagia*. Birmingham: Quest Training.

KIRBY, M., and NOEL, R., 2007, Nutrition and gastrointestinal tract assessment and management of children with dysphagia, *Seminars in Speech and Language*. **28**, 3, 180-189.

KLEIN, M., and DELANY, T., 1994, *Feeding and Nutrition for the Child with Special Needs: Handouts for Parents.* London: The Psychological Corporation.

Lefton-Greif, M., and Arvedson, J., 2007, Pediatric feeding and swallowing disorders: state of health, population trends, and application of the International Classification of Functioning, Disability, and Health, *Seminars in Speech and Language*. **28**, 161-165.

MASON, S., HARRIS, G., and BLISSETT, J., 2005, Tube feeding in infancy: implications for the development of normal eating and drinking skills, *Dysphagia*. **20**, 46-61.

MORRIS, S., and KLEIN, M., 2000, *Pre-feeding skills*, 2nd edition. Tucson, Arizona: Therapy Skill Builders.

PRASSE, J., and KIKANO, G., 2009, An overview of pediatric dysphagia, *Clinical Pediatrics***. 48,** 3, 247-251.

RCSLT, 2005, *Clinical Guidelines*. Bicester, Oxon: Speechmark Publishing.

RCSLT, 2006, *Communicating Quality 3*. London: RCSLT.

REILLY, S., SKUSE, D., and WOLKE, D., 2000, *Schedule for Oral Motor Assessment*. London: Whurr.

ROGERS, B., 2004, Feeding methods and health outcomes of children with cerebral palsy, *Journal of Pediatrics*. **145**, 2 Supplement, S28-32.

SLEIGH, G., 2005, Mothers’ voice: a qualitative study on feeding children with cerebral palsy, *Child: Care, Health & Development*. **31**, 4, 373-383.

Sullivan, P., LAMBERT, B., ROSE, M., FORD-ADAMS, M., JOHNSON, A., and GRIFFITHS, P., 2002, Prevalence and severity of feeding and nutritional problems in children with neurological impairment: Oxford Feeding Study, *Developmental Medicine and Child Neurology*. **42**, 674-80.

Sullivan, P., JUSZCZAK, E., BACHLET, A, THOMAS, A., LAMBERT, B., VERNON-ROBERTS, A., GRANT, H., ELTUMI, M., ALDER, N., and JENKINSON, C., 2004, Impact of gastrostomy tube feeding on the quality of life of carers of children with cerebral palsy. *Developmental Medicine and Child Neurology*. **46**, 796-800.

Vernon-Roberts, a., and Sullivan, P., 2007, Fundoplication versus post-operative medication for gastro-oesophageal reflux in children with neurological impairment undergoing gastrostomy, *Cochrane Database of Systematic Reviews 2007*. DOI: 10.1002/14651858.cd006151.pub2.

WEST, J., and Redstone, F., 2004, Alignment in feeding and swallowing: does it matter? A review, *Perceptual Motor Skills*. **98**, 349-358.

Winstock, A., 2005, *Eating and Drinking Difficulties in Children – A Guide for Practitioners*, 2nd edition. Milton Keynes: Speechmark Publishing.