

**9th UK Swallow Research Group  
Conference**

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**POSTER  
PRESENTATIONS  
ABSTRACTS**

## **Swallowing and quality of life outcomes in patients receiving surgical and non-surgical treatment for residual, recurrent, or new primary (ReRuNeR) oropharyngeal cancer in a previously irradiated field: A systematic review**

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**BACKGROUND:** Treatment options for residual, recurrent, or new primary (ReRuNeR) oropharyngeal cancer (OPC) can result in complex decision making where patients may have to choose potential cure over function. However, little is known about the functional impact of the various treatment modalities.

**METHODS:** A systematic review (2011-2021) to identify swallowing and quality of life (QoL) outcome tools, and outcomes reported for patients undergoing treatment for ReRuNeR OPC. Ethics not indicated.

**RESULTS:** Of the 2,398 articles identified, 18 studies were eligible for inclusion. Due to the heterogeneity of studies, meta-analysis was not possible. A wide range of swallowing tools (n=6) and QoL tools (n=7), used at various timepoints were identified. Non-surgical trials reported on QoL outcomes alone whereas surgical trials reported unidimensional swallowing outcomes. There is a transient improvement in QoL following palliative treatments, before a gradual deterioration over time. It would appear that there is an initial deterioration in swallowing function in the acute phase post-surgery. However, longer term post-surgical swallowing outcomes remain unclear with some studies reporting return to baseline, whilst others show minimal improvement at 6 months or gradual improvement over time at up to 12 months post-surgery. Functional and QoL outcomes are rarely investigated together.

**CONCLUSIONS:** On a background of previous treatment for head and neck cancer, there is the potential for baseline swallowing difficulties and change over time with further treatment. There is a need for further research to establish a core dataset of robust and clinically relevant outcome measures for this group of patients.

## **‘I feel like I’m drowning’: SLT intervention for tracheostomy weaning and severe dysphagia in a patient with COVID-19 and leukaemia**

**Doris O<sup>1</sup>**

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**PURPOSE:** Single case report of a patient who presented with COVID-19 and new onset of acute myeloid leukaemia, at a specialist haematology centre; requiring SLT intervention for tracheostomy weaning and severe dysphagia. Details shared with consent.

**BACKGROUND:** The patient was intubated for 17 days prior to tracheostomy placement. OME: soft palate asymmetry on the left (CN IX) with hypernasality and a tongue deviation to the right (CN X11). The patient was dysphonic with diplophonia. A FNE was performed; identifying a left vocal cord palsy fixed in abduction with copious thick secretions silently aspirated. An intense dysphagia

rehab programme was commenced targeting tongue base and pharyngeal strength to increase swallow frequency. Secretion management improved and the patient was successfully decannulated. A VFS with textures identified a severe sensori-motor pharyngeal dysphagia for IDDSI level 0 and 2. McNeill dysphagia rehab programme was completed over 3 weeks whilst undergoing chemotherapy.

**RESULTS:** Repeat VFS showed significant improvement in the strength and safety of the swallow on a range of textures. The patient commenced IDDSI level 0 and 7, avoiding the need for long term alternative feeding. Dysphonia continued to improve with referral to specialist voice clinic.

**CONCLUSION:** Early SLT intervention and use of instrumental assessment led to identification of CN impairment, laryngeal pathology and successful decannulation with safe resumption of oral intake. Side effects to chemotherapy in the haematology caseload often limit the suitability for SLT intervention. Despite being vulnerable to fatigue and infection, this patient progressed well with intense dysphagia rehabilitation, demonstrating neuroplasticity.

## **Rehab works! Using instrumental assessment to guide targeted dysphagia rehab in patients with COVID-19**

**Doris O<sup>1</sup>**, McRae J  
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**PURPOSE:** Use of FEES and VFS for dysphagia diagnosis in patients with COVID-19 resumed after aerosol generating procedures policies were approved. Variations in dysphagia severity were identified and rehabilitation programmes were implemented. Details are shared with consent.

**METHODS:** Patients were referred to the acute SLT service for dysphagia. All patients received an initial clinical swallow evaluation (CSE) followed by an instrumental assessment as appropriate. Patients with severe dysphagia were seen daily for intensive dysphagia rehabilitation. We present a case series analysis of dysphagia outcomes.

**RESULTS:** 5 were diagnosed with severe dysphagia and 3 were suitable for intensive swallow rehabilitation. All were male, aged 58-68 years (average 62 years). All 3 were previously intubated and had a tracheostomy (average 34.3 days (range 11-79)), but were decannulated prior to therapy input. All demonstrated a severe sensorimotor dysphagia on initial FEES assessment including reduced base of tongue strength, reduced pharyngeal drive and clearance. Patients were nil by mouth (NBM) with nasogastric feeding. Each had a repeat instrumental assessment (2x FEES, 1xVFS) within 4 weeks of daily swallow rehabilitation. Changes were seen in penetration aspiration scale (Figure 1) and New Zealand secretion scale scores. All progressed to full oral intake with avoidance of long term feeding tubes within 22-28 SLT sessions (average 25.3).

**CONCLUSION:** The use of instrumental assessments helped to identify specific sensori-motor impairments of dysphagia not apparent on CSE. This helped to target individualised daily interventions and progressed COVID patients from NBM to full oral intake.

## **Dysphagia management of a complex trauma case following intentional transection of the larynx during COVID-19: A case report**

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**CASE:** 39 year-old male, admitted post transection of larynx and perineum during extreme marijuana-induced psychotic deliberate self-harm. Surgical intervention was required to repair the transected larynx and the first penile re-implantation to be carried out in Ireland.

The complex case highlights Speech and language therapy's (SLT) valuable role in the management of tracheostomy and dysphagia rehabilitation within the multi-disciplinary team, which included 8 surgical and allied health specialties to ensure functional outcomes.

This complex trauma case demonstrates the challenges of delivering SLT intervention in critical care and the additional challenges of COVID-19 Pandemic.

**METHODS:** Retrospective analysis of SLT management of complex swallow and tracheostomy presentation in a patient post transection of larynx during extreme marijuana-induced psychotic deliberate self-harm. No ethical approval was required for the case report.

**RESULTS:** Emergency laryngeal surgery and emergency tracheostomy was performed by ENT. Following this, 9 objective assessments were completed to provide accurate diagnostics and guide targeted evidenced-based dysphagia therapy. Daily SLT intervention was provided, with additional 48 intensive dysphagia rehabilitation sessions. Telehealth was utilised to provide ongoing dysphagia therapy upon discharge to a Psychiatric Hospital and subsequently home. Intensity and frequency of SLT intervention enabled successful decannulation and recommencement of full oral intake 6 months after initial injury, with subsequent removal of PEG.

**CONCLUSION:** SLT play a vital role as part of a wider MDT in the management and rehabilitation of laryngeal trauma. Early SLT intervention in critical care is paramount in order to diagnose and provide evidence-based dysphagia rehabilitation and tracheostomy management.

## **Feeding interventions for neonatal brain injury: A qualitative study of current speech and language therapy practice**

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**PURPOSE:** This study aimed to identify how Speech and Language Therapists (SLTs) select and deliver feeding interventions for infants with neonatal brain injury, an area with no robust evidence-base to guide practice.

**METHODS:** Ten SLTs working in a range of settings and locations around England were interviewed using case vignettes relevant to their practice setting. Participants discussed interventions they use, rationales for these decisions, areas for improved practice, and factors affecting their confidence when working with neonatal brain injury. A framework approach was used for data analysis. Ethics approval for this study was granted by Newcastle University.

**RESULTS:** In all settings, SLTs reported using a wide range of feeding interventions for infants with neonatal brain injury. Interventions are highly individualised and incorporate ongoing assessment

and stepwise progression. SLTs coach families to deliver interventions and incorporate principles of family integrated care, developmental care, trauma informed care, and neurorehabilitation in their rationales for intervention selection. SLTs typically felt limited by time available to spend with families. Confidence was predominantly affected by experience, the availability of supervision, and supportive multi-disciplinary team working.

**CONCLUSIONS:** Despite a lack of research evidence to support practice, SLTs are delivering a range of clinically-reasoned interventions to support feeding development in infants with neonatal brain injury. This study highlights the multi-component, complex nature of feeding interventions used for this population, which poses challenges for clinicians and researchers alike. Identifying and implementing evidence to support intervention selection offers the opportunity to improve outcomes for these infants and their families.

## **A Delphi study to establish a clinical consensus of the components useful in a carebundle for Speech and Language Therapists (SLT) working with children who are eating and drinking with acknowledged risk**

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**BACKGROUND:** The decision to continue to orally eat and drink when there is acknowledged risk of aspiration (EDAR) is often made when alternative feeding is inappropriate and/or to increase quality of life and current literature highlights the need for a 'formal risk feeding process' that provides a patient centred framework for clinical practice. Carebundles exist within adult EDAR to meet this need, however currently there is minimal research paediatric EDAR and no frameworks available.

**PURPOSE:** To identify components necessary for a carebundle to guide SLT practice with paediatric patients who EDAR.

**METHODS:** consensus was achieved among SLTs working in the field of paediatric EDAR in the UK across 2 rounds of anonymous online survey using the Delphi technique. Participants rated 36 statements relating to potential components of a carebundle. The percentage of participants who moderately-strongly agreed with statements were calculated and a consensus level of 80% agreement set. The mean was computed enabling statements to be ranked by importance. Ethical approval was gained by the UCL Departmental Ethics Committee.

**RESULTS:** 31 experienced SLTs working in the field of paediatric dysphagia were recruited. 32 statements achieved consensus at 80% level or higher. The statements with the highest level of consensus (100%) highlights increasing decision-making documentation and patient-centred care as important for EDAR management.

**CONCLUSION:** There is a high level of consensus amongst SLT's about the components required for a paediatric EDAR carebundle. These components will facilitate the development of clinical guidance to increase SLT confidence in management of paediatric EDAR patients.

## **Shared decision making in dysphagia: A mixed approach to eating and drinking with acknowledged risk and enteral nutrition in a case of unpredictable dysphagia**

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**INTRODUCTION:** Eating and drinking with acknowledged risk (EDAR) may be supported in cases of persistent or deteriorating dysphagia such as in end-of-life care or progressive neurology. However EDAR is seldom reported when prognosis and dysphagia trajectory are unclear. This case illustrates the benefits of shared-decision making and a mixed approach to nutrition when dysphagia is unpredictable, prognosis is unclear and mental capacity is reduced. Patient and next-of-kin gave written consent.

**CASE PRESENTATION:** A 79 year-old woman presented to Speech and Language Therapy with dysphagia following post-operative respiratory-failure and 10days intubation after mechanical fall and neck-of-femur fracture. Bedside swallow, FEES and videofluoroscopy assessments revealed severe pharyngeal-dysphagia with reduced airway closure, diffuse residue and aspiration. No discernible improvement following a 5-week therapy programme combining oral intake and targeted exercises. The patient requested oral intake but lacked understanding of the risks. Neurological diagnosis was ruled out and Psychiatry felt reduced capacity was secondary to long-term clinical depression. Due to it's unclear trajectory, the multi-disciplinary team (MDT), patient and next-of-kin agreed management of the dysphagia via a mixed approach to nutrition, combining EDAR to meet patient wishes, modified-diet to increase comfort and PEG feeding to fully support nutrition. Hospital re-admission for aspiration related deteriorations was agreed in absence of a short-term prognosis.

**CONCLUSION:** MDT working and collaboration with the patient is key to keeping goals patient centred, even when mental capacity is reduced. It can be appropriate to combine EDAR with full support via alternative nutrition and active treatment for any future swallow related deteriorations.

## **Impact of post covid airway expansion surgery on swallowing**

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**INTRODUCTION:** Patients with severe COVID-19 frequently require intubation and respiratory support presenting increased risks for airway trauma and dysphagia. This study observed dysphagia outcomes from a COVID-19 inpatient requiring airway expansion surgery 6 months post intubation, to inform future service delivery and pathways.

**METHOD:** Observational case study of a 31 year old male referred to Speech and Language Therapy (SLT) in June 2021 with bilateral vocal cord fixation from subglottic stenosis. Data on intubation length and instrumental swallowing assessment pre/post vocal cord suture lateralisation procedure and endolaryngeal tissue ablation, was compared. Ethical approval not required, anonymised case study with informed consent.

**RESULTS:** Intubation length was 6 days. Pre-surgical fiberoptic endoscopic evaluation of swallowing (FEES) indicates mild pharyngeal dysphagia with prompt swallow trigger, incomplete epiglottic deflection, and adequate airway protection with no penetration/aspiration. Post-surgical FEES indicates moderate/severe pharyngeal dysphagia with delayed swallow trigger, incomplete

epiglottic deflection, incomplete airway protection and intraswallow silent penetration/aspiration . Videofluoroscopy post-surgery further confirms delayed swallow trigger, reduced anterior hyoid tilt and epiglottic deflection, delayed complete hyolaryngeal elevation and laryngeal vestibular closure, resulting in silent penetration/aspiration.

**CONCLUSIONS:** Clinical implications of this procedure are hypothesised to be that the hyolaryngeal complex is tethered by the presence of the vocal cord lateralisation sutures reducing hyolaryngeal elevation, anterior tilt and laryngeal vestibular closure. Subsequent laryngeal penetration/aspiration during swallowing is observed, resulting in increased pneumonia risk, prolonged hospital admission and alternative feeding requirement. Further investigation of appropriate dysphagia rehabilitation and long term implications for swallow function is required.

## **Rehabilitation of swallowing in children with an acquired brain injury: A survey of what is being done in clinical practice?**

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**OBJECTIVE:** To explore if UK based, paediatric speech and language therapists, use any direct rehabilitation strategies to facilitate physiological improvements in swallowing with children following an acquired brain injury.

**STUDY DESIGN:** A cross-sectional, self-administered, online questionnaire was developed and conducted using REDCap software. Inclusion criteria were HCPC registered speech and language therapists, working with children with dysphagia within the UK. Participants were required to have experience working with children with dysphagia secondary to an acquired brain injury. Participants were recruited via special interest groups, the Royal College of Speech and Language Therapists (RCSLT), the association of Speech and Language Therapists in private practice (ASLTIP) and online social media platforms (twitter).

This study was approved by University College London (UCL) local ethics board (reference LCD-2020-17).

**RESULTS:** A total of 73 questionnaire responses were collected. 98% (n=72) of participants reported that further research into the effectiveness of different interventions is required in paediatric populations. Further analysis and descriptive statistics will be completed using SPSS.

**CONCLUSIONS:** In adult therapeutic practice, there is research and clinical evidence to support the use of swallowing interventions including exercises to improve swallowing physiology in dysphagia, however, use of these interventions in treating children with dysphagia is largely unexplored. This study demonstrates that some traditionally adult-based interventions are being utilised clinically by SLTs working with children with an acquired brain injury. It highlights the need for further research into the feasibility and effectiveness of using swallowing interventions with children.

## **Gaining expert consensus on level descriptors of a paediatric Functional Oral Intake Scale (p-FOIS)**

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**AIM:** The Functional Oral Intake Scale is a widely used outcome tool, originally designed for use in post-stroke dysphagia. Numerous adaptations for use in paediatrics have been made. However, all lacked methodological rigour and psychometric evaluation. The purpose of this study was to gain expert consensus on the wording of a functional oral intake scale suitable for use with all types of paediatric feeding disorders, known as the p-FOIS.

**METHOD:** A modified Delphi methodology was used. Purposive sampling was utilised and a minimum threshold for consensus set at 80%. Online surveys gathered feedback on wording of the six p-FOIS level descriptors. Participants' open comments were thematically analysed and adjustments made based on respondents' feedback until consensus was achieved. Ethics was approved by the University College London Research Ethics Committee (number: LCD-2019-11).

**RESULTS:** Nineteen out of 30 invited expert speech and language therapists completed Round 1. 15/19 completed Round 2. The average length of participant experience was 18 years. Targeted amendments led to Round 2 consensus ratings of 80-93% for all levels. Additionally, 93% of participants agreed the p-FOIS would accurately capture change in their setting, with 87% likely to use the scale in practice.

**CONCLUSION:** This study has produced agreed wording, using a robust consensus method, for a functional oral intake scale suitable for use with paediatric feeding disorders, regardless of disease aetiology, presentation, age or setting. Potential for widespread use is supported. Further evaluation of the tool's reliability and validity is required.

## **Respiratory health of children with oro-pharyngeal dysphagia during the COVID-19 pandemic: A service evaluation**

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Aspiration pneumonia is often associated with oropharyngeal dysphagia (OPD) in children, but without sufficient evidence of a causal relationship, there is a risk of clinical over management (Tanaka et al., 2019; Langmore et al., 1998). The lack of evidence linking OPD and pneumonia creates a clinical conundrum for Speech and Language Therapists in paediatric eating, drinking, and swallowing services. Staff are supported to reflect on tensions between managing OPD and the likely resulting negative impact on quality of life without a guaranteed improvement in respiratory health.

The COVID-19 pandemic presented a set of circumstances where variables associated with pneumonia in children with OPD were reduced, since majority children with OPD stayed home and were only fed by family members in relatively quiet environments. It was hypothesised that OPD in children might sometimes be over-managed due to concerns about the association between OPD and pneumonia, without due consideration about wider environmental factors that might impact respiratory health i.e., consistency of feeders, feeding environments or 'normal' childhood illnesses. During this service evaluation, retrospective data was collected about respiratory health of children with OPD prior to the first lockdown, during the lockdown and when restrictions eased, and children



and their siblings returned to school. No ethical approval was required for this service evaluation, it was registered with the local Clinical Effectiveness Unit. Preliminary data indicates that most children had fewer respiratory illnesses during lockdown. This service evaluation highlights the importance of considering environmental factors in conjunction with OPD-related factors when devising care plans.

## **The eating and drinking ability classification system for cerebral palsy: A study of reliability and stability over time**

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**AIM:** This study evaluated the inter-observer reliability and stability over time of the Eating and Drinking Ability Classification System (EDACS) for children and young people with cerebral palsy (CP).

**METHOD:** Case-records for 97 children with CP were examined to collect retrospective data about eating and drinking abilities, at four time-points with a minimum of 2 years between each time-point. Sex, Gross Motor Function Classification System (GMFCS) level, presence of feeding tube and orthopaedic issues were recorded from case-records. One speech and language therapist (SaLT1) classified eating and drinking ability using EDACS for all cases at all time-points; SaLT2 assigned EDACS levels for 50 cases at time-point 1; SaLT3 assigned EDACS levels for 24 cases at all time-points. Inter-observer reliability and stability over time were assessed using Intraclass Correlation Coefficient (ICC). NHS Health Research Authority approval was conferred by London/Camden and Kings Cross Research Ethics Committee: 16/LO/0344.

**RESULTS:** Out of 97 children, 48 were male, 48 had feeding tubes, and 83 had orthopaedic issues. ICC for EDACS levels recorded by SaLT1 across all time-points was 0.97 (95%CI 0.96-0.98); changes in EDACS levels occurred infrequently and never by more than one level. ICC between SaLT1 and SaLT2 at time-point 1 was 0.8 (95%CI 0.67-0.89); ICC between SaLT1 and SaLT3 across all time-points was 0.95 (95%CI 0.92-0.98). Association between GMFCS and EDACS was moderate ( $\tau=0.58$ ).

**CONCLUSION:** Retrospective use of EDACS to classify children's eating and drinking abilities appears reliable; EDACS appeared stable over 6 or more years in 86% of cases.

## **Printing our way to improved mealtimes for people with dysphagia: Views of key stakeholders on the use of 3D food printers**

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**PURPOSE:** This research examined the views of people with dysphagia, their supporters, and allied health professionals on the potential use of 3D food printers to improve the appearance of texture-modified food and hence mealtime-related quality of life for people with dysphagia.

**METHODS:** The ethically approved study involved in-depth interviews of people with dysphagia (n=7) and their supporters (n=4), and focus groups involving 15 allied health professionals. Participants were shown a video of a domestic-scale commercially available 3D food printer and photos of printed

foods, and asked to discuss the feasibility and potential benefits or limitations of 3D food printing. Data was analysed within and across the data sources to synthesise the results into themes.

**RESULTS:** The interviews and focus groups revealed similar content themes. Participants viewed that dysphagia impacted negatively on a person's choice and control, social engagement, food experiences, and physical safety. Participants saw several potential benefits of 3D food printing, particularly for people being able to 'design their mealtime', however several feasibility and usability issues were raised that need to be addressed.

**CONCLUSION:** People with dysphagia, their supporters, and allied health professionals perceived multiple negative impacts of dysphagia on mealtime enjoyment, participation and safety. They agreed that some of these impacts may be addressed by improved access to attractive and appealing texture-modified food. However, they held reservations about the usability of the 3D food printer and diverse views on whether the printed food was appealing. Further research on the co-design and usability of 3D food printers is indicated.

## **The antimicrobial management of aspiration pneumonia: Is there a consensus?**

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**PURPOSE:** Which antimicrobial agents are used for the management of aspiration pneumonia.

**METHODOLOGY:** Colleagues in UK and internationally based Hospital services were contacted via email requested to send a copy of their antimicrobial guidance for the management of aspiration pneumonia.

**RESULT:** We managed to collect 23 Anti-microbial guidelines from the UK and 10 from overseas.

Most common used antibiotics is Co-amoxiclav (12/33, UK :8 overseas:4), Amoxicillin + metronidazole (11/33, UK : 11 overseas:0), Levofloxacin + metronidazole (9/33, UK : 6 overseas:3). Doxycycline + Metronidazole (8/33, UK :7 overseas: 1) Piperacillin + tazobactam 5/33, UK :2 overseas:3) Clarithromycin + Metronidazole (5/33, UK :5 overseas:0) Benzyl penicillin+ Metronidazole (4/33 UK:3 overseas:1) and Clindamycin, alone or in combination, (UK: 1, overseas : 2).

**CONCLUSION:** The results reveal that there are a multitude of different recommendations both in the UK and elsewhere. The most common used aspiration pneumonia antimicrobials in UK and overseas is Co-amoxiclav followed by Amoxicillin + Metronidazole. In penicillin allergy : Levofloxacin + metronidazole followed by, Doxycycline + Metronidazole. Gentamicin is not commonly used, should not be used as first line due to its side effects especially in frail patient with renal impairment.

The literature does not support the prescribing of any particular antibiotic or combination, but does suggest tailoring the antibiotic use to the clinical need of the patient. Empirically best guidance recommends prescribing antimicrobials used for community acquired pneumonia.

## Dysphagia in young adults with Cerebral Palsy (CP)

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The purpose of this study was to explore the intersection between dysphagic symptoms, quality of life and health in young adults with CP, and to determine whether young adults with CP and dysphagic symptoms access speech pathology services. Ethics approval was obtained from The University of Sydney Human Research Ethics Committee (2020/462). Eight adults from NSW (Australia) aged 19-35 years (n = 8; 3 male and 5 female) with CP and either no or mild intellectual disability met the inclusion criteria. A cross-sectional case series study design yielding quantitative data from online survey questions was utilised. The survey collected information about demographics, speech pathology services received in the previous two years, dysphagia symptoms, quality of life, and general health. The Dysphagia Handicap Index (DHI) was used to collect information about dysphagia symptoms and quality of life. Participant characteristics were explored through descriptive statistics and non-parametric analyses appropriate to the variables. Six participants (75%) had a total DHI score of 3 or higher, indicating the presence of a swallowing disorder. The total scores on the DHI ranged from 0 to 26, with an average of 10. Of the eight participants, three had seen a speech pathologist in the previous two years. This study demonstrated a high prevalence of dysphagia in this population, who were not presently managed. Future research should focus on further exploring dysphagia in this population and barriers to accessing appropriate health services to prevent fatal health conditions including aspiration pneumonia and choking.

## Cultural appropriateness of dysphagia treatments in residential aged care facilities

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**PURPOSE:** This study aimed to explore the experiences and perspectives of speech pathologists (SLPs) providing dysphagia treatment to culturally and linguistically diverse (CALD) patients in residential aged care facilities (RACF).

**BACKGROUND:** Dysphagia is prevalent in our increasingly multicultural and ageing society. Culturally appropriate texture-modified diets (TMD) correlate with increased quality of life, food consumption and mealtime satisfaction. Current literature in dysphagia treatments for CALD populations is limited.

**METHODS:** This research project was approved by The University of Sydney Human Research Ethics Committee (2021/172). This study adopted a mixed-methods phenomenological design. 13 SLPs from Australia and America completed the online survey, of which three participated in individual semi-structured interviews. Descriptive statistics and thematic analysis were used to analyse quantitative data and open-ended responses, respectively.

**RESULTS:** Three prominent themes emerged: a) SLP's perspectives on providing culturally appropriate dysphagia care, b) challenges to providing this care, c) strategies used to provide this care. 77% of participants did not have culturally specific TMD at their RACF. Challenges to providing culturally responsive care included the lack of variety in dysphagia menus, budgetary and resource constraints, RACF staff's cultural insensitivity and their lack of dysphagia knowledge. Existing cultural competence education for SLPs have little to no focus on dysphagia and CALD populations.

**CONCLUSION:** Clinical implications and solutions involve collaboration, advocacy, creativity, and continual self-directed cultural competence education. Future research is needed to evaluate cultural competence education, conduct dysphagia audits, and explore the perspectives of residents, families, and staffs in the cultural appropriateness of dysphagia treatments.

## **Swallowing difficulties with oral medication intake in adults: A cross-sectional study**

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**BACKGROUND AND PURPOSE:** Dysphagia poses challenges with oral medication intake and can result in inappropriate medication modifications. Little is known about the prevalence of swallowing difficulties and coping strategies associated with oral medication intake or about coping strategies used when swallowing oral medication is problematic. This study aimed to evaluate the most frequent swallowing complaints with oral medication intake in the adult population.

**METHODS:** This project was approved by The University of Sydney Ethics Committee (#2021/171). Online surveys used included the ‘Swallowing difficulties with Medication intake and Coping strategies’-questionnaire (SWAMECO) and EAT-10. Included were adults (> 21 years) with dysphagia who have been prescribed oral medication and health care professionals (HCP) who administer medication.

**RESULTS:** A total of 11 dysphagia patients and 48 HCPs participated in the study. Pill dysphagia has affected 45.5% of patients (N=5) severely. This group was significantly more likely to have crushed tablets ( $p<0.05$ ) and emptied capsules ( $p<0.05$ ) compared to those without swallowing difficulties.

70% of HCPs in hospital work settings crush and break tablets to administer medication to their patients on a regular base. Opening and emptying powder from patients’ capsules is common practise in 45.0% of the respondents. Pill crushing and breaking pills are more frequently found in hospitals compared to other settings ( $p<.001$ ).

**CONCLUSION:** Pill dysphagia is highly prevalent in this population. High frequency of inappropriate medication modification has been identified by both patients and HCPs, raising concerns around patient safety and medication treatment effectiveness in general.

## **Swallowing outcomes in clinical trials of interventions for post-stroke dysphagia are variable and heterogeneous**

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**BACKGROUND:** Robust evidence for the treatment of dysphagia (swallowing difficulties) after stroke is needed. Better understanding of the design limitations within current research will improve the quality and reliability of findings.

**METHODS:** We analysed the results of published trials for dysphagia treatment in acute/subacute stroke. As a systematic review of previously published data, no additional ethics approvals were required. New papers published before January 2021 were screened by two independent reviewers. We included 10 outcome measures for meta-analysis, including swallowing ability. Trials that did not use these measures were excluded. We identified and classified the assessments used for the primary outcome of swallowing.

**RESULTS:** 8 trials were excluded as they did not use an identified outcome measure, which is equivalent to 9.52% of included trials (84). 50 trials included swallowing ability as an outcome using 16 different assessments, this resulted in significant heterogeneity ( $I^2=84\%$ ;  $\text{Chi}^2 p<0.00001$ ). All assessments were clinician- not patient- rated; 80% were based on bedside tools and 20% on instrumental assessment reflecting a focus on functional rather than specific impairments. Two assessments, which are validated for the stroke population, were used more frequently than others: Standardised Swallowing Assessment (26%) and Functional Oral Intake Scale (16%).

**CONCLUSIONS:** Variation within outcome measures limits the comparison of research and the quality of any meta-analyses. Dysphagia therapy research demonstrates significant variation within outcomes. A Delphi working group is required to develop standardised outcomes for dysphagia research across the international research community, considering the importance of patient and clinician rated, validated tools.

## **Feeding status as a measure of health and predictor of outcome in acute and sub-acute stroke: Validation of a bedside tool**

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**BACKGROUND AND AIMS:** The Feeding Status Scale (FSS) is a 7-point scale based on mode of nutritional intake. Previously shown to be a predictor of poorer outcomes in stroke trials, we assessed whether the FSS is a valid and reliable scale of health status. Ethics approvals were not required as the retrospective data was originally collected with informed consent for analysis by the research group.

**METHODS:** Criterion validity was established through secondary analysis of raw data from 4 prospective trials of acute/sub-acute stroke ( $n=8435$ , age  $\mu=70.18$ ), FSS scores were compared with established stroke measures for impairment (NIHSS), dependency (Modified Rankin Scale), mood (Zung), cognition (Tics-n) and quality of life (EQ-VAS). Inter- and intra- rater reliability were established by two blinded, independent raters without training in the tool; mode of nutrition data ( $n=50$ ) was converted to FSS scores on two occasions one month apart.

**RESULTS:** In the general stroke population, the FSS correlates (concurrent validity) with other stroke scales at baseline ( $p<0.001$ ) and is predictive (predictive validity) of poorer outcomes at end of trial ( $p<0.001$ ). In a population where all patients had post-stroke swallowing difficulties FSS was shown to correlate with measures of dysphagia (concurrent  $p<0.001$ ; predictive  $\leq 0.001$ ) but not overall health status. Both intra- and inter- rater reliability demonstrated excellent agreement ( $\text{ICC}\geq 0.92$ ).

**CONCLUSIONS:** The FSS produces reliable results without specific training. FSS scoring is equitable to other established stroke measures at a number of time points and can be used to predict poorer outcome in a general inpatient stroke population.

## **Prevalence & dysphagia implications of adults that required a tracheostomy in the stroke population**

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**INTRODUCTION:** Respiratory failure can be as a result of a stroke, this can lead to the requirement of a tracheostomy to maintain airway protection and mechanical ventilation (Walcott et al, 2014). Dziewas and colleagues (2018) reported that patients that have a stroke with an associated severe dysphagia and insufficient airway protection cannot be decannulated even 3 months after stroke. However, little is known about the rate of patients with a stroke associated dysphagia and tracheostomy in the UK. This study aims to determine the trend of tracheostomies in a stroke population from a large acute London hospital which includes a stroke unit and Level 1 rehabilitation unit.

**METHOD:** Retrospective data from 2014-2020 was collected from existing internal databases. All adult stroke patients with a tracheostomy tube across the units were identified. The data analysed looked at tracheostomy prevalence and people who required long term tracheostomies due to dysphagia.

**RESULTS:** A simple linear regression assessed whether the total number of tracheostomies changed with year. The regression model was significant [ $F(df1,df4)=23.188, p=0.005$ ]. This suggests a positive relationship between year and total number of tracheostomies for patients that have a stroke. Mean length of tracheostomy wean was 41 days with a range of 7-123 days with patients that have a dysphagia having a longer wean period.

**CONCLUSIONS:** Understanding the prevalence and trend of patients with a stroke and tracheostomy may support the need for developing specific pathways for these patients to ensure that they are receiving neuro specialist patient-centred care.