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# ABSTRACTS

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# Retrospective analysis of findings from fiberoptic endoscopic evaluation of swallow used in the Intensive Care unit in St Vincent's University Hospital, Dublin

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OBJECTIVE: Speech & language therapists (SLT) carry out fiberoptic endoscopic evaluation of swallow (FEES) routinely within the Intensive Care unit (ICU) to assess oropharyngeal swallow, laryngeal function, secretion management (McRae et al 2020). SLT's must have advanced practice in Endoscopy for FEES (RCSLT 2020). Silent aspiration is a common occurrence in ICU and can cause many adverse effects including prolonged ICU length of stay and increased mortality (Zuercher et al., 2019). Incidental findings are frequently noted by SLT on FEES and can have significant impact on rehabilitation, particularly swallow, cough and voice (Schiedermayer et al 2020). Early detection is vital in order to optimise rehabilitation goals within the ICU. A well-establish pathway to ENT exists within SVUH in order to escalate the incidental findings noted on FEES.

METHODS: Retrospective data analysis of the FEES completed only in the ICU setting was carried out over a 4 year period (2019-2023). Overall numbers were reduced during the Covid-19 pandemic, as restrictions were in place for aerosol-generating-procedures. Data was analysed for incidence of silent aspiration, tracheostomy, ventilator dependence and incidental findings.

RESULTS: Total 119 FEES were analysed. 65% of FEES showed silent aspiration. 45% of the total FEES completed had a tracheostomy (5% ventilator dependent). 48% of total tracheostomy had a FEES assessment. Incidental findings were noted in 18% and all were escalated to ENT as per our FEES pathway.

CONCLUSIONS: FEES in ICU carried out by highly trained SLT's can provide a valuable service to enhance rehabilitation and recovery within the ICU.

# Alterations and preservations in approaches to thickened liquids: An international survey

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Objective: Speech and language therapists commonly thicken liquids to reduce aspiration in people with dysphagia and believe it to be effective intervention. Recent studies point to poor evidence, low acceptance and unintended consequences with this intervention. This paper examines whether current debates are reflected in SLT perceptions and perspectives.

METHODS: Participants were recruited via professional associations in Australia, New Zealand, Ireland, the UK and USA and an e-survey was disseminated. Descriptive and inferential statistics were

employed to examine the data. Principal component analysis was used to summarise SLT practices and perspectives.

RESULTS: 370 respondents were included in the analysis. Decision making is underpinned by "best treatment" and "it works" beliefs. One in four SLTs frequently recommend TL and these respondents are more likely to believe TL is effective and evidence-based, reduces aspiration and improves hydration. They are also most influenced by their own clinical experience. While person-centredness is important to SLTs, significant numbers would implement TL against patient wishes. Quality-of-life and improvements in aspiration status are important reasons SLTs cite to discontinue TL.

CONCLUSION: While current debates are influencing practice, there clearly remains a significant number of SLTs continuing to recommend TL. This study's findings highlight both alterations and preservations in SLT's approach to TL and calls for the discipline to reframe our thinking regarding this intervention.

## Thickened liquids: The road to de-implementation

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BACKGROUND: There is considerable evidence that thickened liquids in an intervention beset by problems. There is limited supporting evidence, patient dislike and adherence issues and a range of unintended and some harmful consequences. Given some serious risks associated with the use of this intervention, SLTs should reconsider TL as the first and safest option for dysphagia management. This paper outlines the authors' road to this position and in doing so highlights the multiplicity or research, practice, patient and other issues with TL.

METHODS: The audience will be taken on a journey through the more recent literature integrating the papers the Swallow Perspectives, Advocacy and Research Collective (SPARC) group has published with those of other writers. This exercise will highlight the build-up in recent years of a range of opinion and evidence which undermines the global employment of this intervention by SLTs and culminating in the 2023 RCSLT position statement and paper on the topic. The concept of de-implementation will be presented.

RESULTS: The range of evidence and theory underpinning current positions regarding the deficits and dangers of TL will be presented for the audience to consider and reflect upon.

CONCLUSION: TL is an intervention beset by problems and capable of doing harm. The SLT discipline is required to be person-centred and ethical in their management of dysphagia and as such, our practice in this area must be immediately reviewed.

## Detecting the unique contribution and impact of FEES in a tertiary hospital setting

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BACKGROUND: FEES is a well evidence based evaluation to assess dysphagia. It contributes significant cost benefits, efficiency and added value in terms of quality of patient care when compared with clinical swallowing evaluation. The positive impact on patient outcomes, such as earlier return to oral intake or tracheostomy weaning, means that FEES should be considered an essential tool available to all SLT dysphagia services. (RCSLT Position Paper 2020). FEES has been used at King's College Hospital for more than ten years, however its unique contribution to outstanding patient care has not previously been explored at this NHS Trust. This project was initiated to provide information on the unique contribution and impact of FEES in a tertiary hospital setting.

OBJECTIVE: To provide information on the unique contribution and impact of FEES.

METHODS: Cross-sectional efficacy and impact review.

SUBJECTS: Inpatient FEES Jan 2022 to Jan 2023.

DATA: Demographic information, outcomes and recommendations.

RESULTS:

157 patients, 49% with tracheostomy;
59% sensorimotor dysphagia, 41% motor;
35% progressed oral intake, 1% reduced;
26% silent aspiration;
28% provided swallowing rehabilitation advice;
35% referred to ENT;
12% referred for follow-up elsewhere;
14% reflux identified;
2 patients went on to develop an aspiration pneumonia post-FEES.

CONCLUSION: FEES supports timely return to oral intake and progression of recommendations pertaining to dysphagia. Additionally provision of targeted swallowing rehabilitation has served to improve patient outcomes and wellbeing with recommendations proven to be appropriate by the very small number of patients who went on to develop aspiration pneumonia post-assessment.

## Modified diets and medication in dysphagia – The effect of thickener on drug bioavailability: A systematic review

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BACKGROUND: Dysphagia is associated with long-term conditions including strokes, dementia, Parkinson's disease and frailty. Dysphagia affects 30-40% of the population aged over 65-years-old. Adults with dysphagia are likely to experience long-term conditions requiring multiple medications

(often >5) to manage this. The thickening of liquids is a common compensatory strategy in dysphagia management. Studies suggest that immersion in thickened liquids affects medicines' solubility in vitro. Clinicians and pharmacists are unaware of the pharmacokinetic/therapeutic effects of thickened liquids on oral medicines. We conducted a systematic review of existing literature on thickeners' effects on drug bioavailability.

METHODS: We performed a literature search of MEDLINE and EMBASE. Search terms included: dysphagia/thickened diet (EMBASE only)/ bioavailability or absorption of medicines or pharmacokinetics; excluded: NG feeds/animal studies. Studies included: all genders, countries, >18 years, community and hospital settings. PRISMA guidance was followed.

RESULTS: 526 results were found and 15 articles identified following reference list review. Following abstract review, 508 were rejected. 33 received a full text review, 18 were rejected, and the remaining 15 included. Most articles evaluated the effect of thickeners on dissolution profiles of medications in-vitro. Few studies assessed bioavailability or used clinical outcome measures. Often these were small studies on limited numbers of medications.

CONCLUSION: Despite dysphagia and polypharmacy being common in older adults, little is known about the effects of altering liquid viscosity on the pharmacokinetics and therapeutic effect of most medications. Small single-centre studies suggest that immersion in thickener may negatively affect drug pharmacokinetics and therapeutic outcomes.

## Investigating dysphagia therapy in adults with a tracheostomy

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BACKGROUND: In the adult population, swallowing impairments and tracheostomy can coexist. There is an abundance of research in dysphagia therapy, however there is limited information pertaining to specific dysphagia therapy interventions for people with a tracheostomy. This study aims to understand and describe what is known about dysphagia therapy for adults who have a tracheostomy.

METHODS: 1) a scoping review which used the Joanna Briggs Institute and Preferred Reporting Items for Systematic Reviews guideline. Ten electronic databases from inception to July 2021 were searched. Data extraction included population demographics, aetiology and dysphagia therapy design. 2) A self-administered cross-sectional online questionnaire completed by UK based speech and language therapists to identify current clinical practice.

RESULTS: 1) Twenty studies were included. Most studies lacked methodological detail and consistency on key features for dysphagia therapy interventions including outcome measures, dysphagia therapy type and intensity of therapy intervention. 2) Responses from 94 speech and language therapists were analysed. The type of dysphagia therapy used is varied with the most 'often' used therapy types as effortful swallowing and oral trials.

DISCUSSION: Methodological flaws and lack of consistency across dysphagia therapy types makes it difficult to extrapolate meaningful information to guide clinical practice. Despite this lack of evidence, speech and language therapists are using dysphagia therapy interventions, however there is variability in practice.

CONCLUSION: Based on the scoping review and survey of clinical practice, the evidence to use dysphagia therapy for adults with a tracheostomy is inconclusive. Further research in this subgroup is required.

## Chin tuck against resistance with feedback to improve swallowing in frail older people admitted to hospital with pneumonia: a possible treatment

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BACKGROUND: Aspiration of infected saliva may be aetiology of community acquired pneumonia (CAP) in older adults. Rehabilitation exercises strengthening anterior neck and suprahyoid muscles, including chin tuck against resistance (CTAR), can improve swallowing and the amount eaten. We have conducted a pilot study using a CTAR intervention (CTAR-SwiFt), incorporating real-time feedback via Blue tooth to a mobile phone/tablet (ExerPhager) to achieve a pre-set target (PST – 30% of an averaged maximal squeeze) effort.

METHODS: Adults >75 years, admitted acutely with CAP were randomised to either standard care, low (once daily) or high intensity (twice daily) CTAR-SwiFt exercises for 12 weeks with a further follow up for 12 weeks. Outcomes included recruitment rate, retention, and exercise regime completion.

RESULTS: Twenty-one participants were randomised. Recruitment rate was 1/month. 37.5% of those approached were willing to participate; 45.8% completed the study. Mean (SD) CTS increased by approximately 21% from 3.8 (2.2) to 4.6 (2.4) kg after 12 weeks. Maintaining PST improved from a mean of +/- 22% to +/-16% at week12. Feedback as to the usability of the ExerPhager was mixed.

CONCLUSIONS: Studies have been conducted previously using CTAR, both in Korea and Denmark, demonstrating an improvement in swallowing ability after the intervention. This is the first study to show that using biofeedback it is possible for patients to "squeeze" consistently. Participants feedback that they would have benefited from more support during the study. The ExerPhager was not unduly complex.

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## Availability of dysphagia assessment procedures and/or protocols for 2–6-year-old children with paediatric traumatic brain injury

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Paediatric Traumatic Brain Injury (PTBI) results in irreversible disruptions in brain functioning, which manifests in impairments in various domains – notably in feeding and swallowing i.e., dysphagia. Dysphagia is present in 10-15% of children with moderate TBI, and 68-76% in children with severe TBI between 2 - 6 years old. In order to facilitate effective evaluation of dysphagia symptoms, the identification of what may constitute as acceptable assessment procedures and/or protocols may aid evidence-based management of feeding and swallowing problems prevalent in PTBI populations. Use of a scoping review was employed to determine available dysphagia assessment and identify any research gaps within the field of dysphagia in PTBI patients in order to inform quality patient management. Information was retrieved from a total of 26 articles (n=26) that complied with the set criteria for the charting, analysis, and discussion of the data. While no prescribed protocols were identified, ranging use of 60 non-instrumental and instrumental dysphagia procedures was noted. Use of the identified procedures largely depends on operational factors such as access to resources and the clinician's skill, which may become a barrier in middle-low-income countries where access to resources and opportunity for upskilling is limited. In order to alleviate barriers in achieving comprehensive assessment, the promotion of a prescribed/set dysphagia assessment protocol remains a priority in dysphagia care for PTBI patients, with the essential inclusion of the MDT. This will aid in the facilitation of safe feeding and swallowing practices and quality care provision, particularly in middle-low-income countries.

## Preventing and treating swallowing impairment with non-oropharyngeal exercise: A scoping review

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BACKGROUND: The prevalence of swallowing impairment is increasing in this aging society. Swallowing is not merely a movement of oropharyngeal factors but rather a complex function involving effective musculature, innervation, respiration, and expectoration. Therefore, the current intervention of oropharyngeal exercises may not be ideal. It is necessary to establish effective prevention and treatment of swallowing impairment that can be applied to the general population, especially those with sarcopenic dysphagia. Whole-body exercises have been reported to be effective but its benefits and indications are unknown.

METHODS: This was a scoping review to investigate the extent and content of publications on non-oropharyngeal exercise in the prevention and treatment of swallowing impairments. There were no restrictions in age, ethnicity, setting, or language.

RESULTS: From a total of 13,421 studies, 11 papers (including 1 randomised control trial) were eligible. All non-oropharyngeal exercises were instructed by physiotherapists and other healthcare professionals. Five studies were aimed at prevention, while 6 focused on the treatment of swallowing impairments. A variety of exercises were studied, but no study focused on resistance exercises. All

studies reported some improvement in oral physiological and/or physical measurements. Study quality was generally assessed as low owing to the design.

CONCLUSIONS: Current literature presents limited evidence to suggest beneficial effects of non-oropharyngeal exercises on the prevention and treatment of swallowing impairments. No clinical recommendations can be made from the available studies. In order to identify effective types of exercises and population groups, robust randomised controlled studies with standardised patient-relevant outcome measures are necessary.

## Perceptions and understanding of the role of speech and language therapists in dysphagia within medical students and doctors: Is our protocol for inter-professional education 'fit and healthy'?

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BACKGROUND: IPE is essential for optimal patient care and outcomes (Schott et al, 2020), however, it's not a mandatory element in healthcare curriculums (Cust, 2021). The NHS recognises the importance of MDT working to narrow health inequalities in the UK (NHS England, 2022), However, training at an undergraduate level doesn't always survive transition to professional practice (Wilhelmsson, 2013), and research suggests continuing professional development (CPD) is not incorporating adequate IPE to professionals, as it's not currently mandatory to do so (Karas, 2020).

OBJECTIVE: The aim of the study was to assess the current understanding of medical students and professionals working in acute services in the UK regarding SLT provision.

METHODS: 57 medical students and 19 Doctors (including Specialty Doctors, Consultants, Registrars, Core Training Doctors and Foundation Doctors) were surveyed to determine understanding of SLT provision in hospitals. Questions assessed understanding of IDDSI, dysphagia, referral criteria for communication and swallowing assessments, and SLT provision. The survey also assessed whether relevant information had been provided by the participants' education setting or hospital trust.

RESULTS: 72% of participants were unaware of how to refer a patient to the acute SLT service. 95% had never heard of the IDDSI Framework. Only 14% of participants reported basic information had been provided to them by their university or place of work. 92% of participants suggested that they'd find further information about SLT useful. Only 52% of participants were aware that SLT could see patients in palliative care, cardiology (28%) and NICU (40%).

## What does it mean to be nil by mouth? A scoping review of the psychosocial impacts of no longer eating and drinking as an adult

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BACKGROUND: A clear relationship exists between quality of life and eating and drinking. However, for those unable to maintain oral intake, the psychological and social impact of being nil by mouth (NBM) is often overlooked.

OBJECTIVE: This scoping review maps existing literature capturing the psychosocial impact on adults who are NBM and their families, as well as outcome measures used.

METHODS: We undertook a comprehensive search of six electronic databases (CINAHL, Embase, MEDLINE, PsycINFO, SCOPUS, and Web of Science) for studies published before February 2023, supplemented with a systematic grey literature search of Google and Google Scholar. We also hand searched citations of included papers. Inter-rater reliability was established from an independent reviewer. We registered a protocol on the Open Science Framework (osf.io/43g9y) and followed JBI guidance, reporting in accordance with PRISMA-ScR. We used descriptive statistical analysis and narrative synthesis and included Patients and Public Involvement (PPI) in findings discussions.

RESULTS: We included 23 papers; 14 primary studies and 9 grey literature. Distress, both global and NBM-specific, were experienced by patients and their families. Furthermore, both patients and families were negatively impacted socially. Outcome measures used (n=9) were limited and non-specific to NBM.

CONCLUSION: Being NBM has psychosocial consequences for both patients and their families. Despite wide-ranging conditions associated with recommending discontinuation of oral intake, there continues to be limited outcome tools to measure the psychosocial impact of being NBM. Establishing a robust method of measuring the psychosocial impact of being NBM is needed to evaluate potential interventions and improve patient care.

## Factors influencing oral feeding outcomes following neonatal hypoxic ischaemic encephalopathy: A mixed methods systematic review

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BACKGROUND: Hypoxic ischaemic encephalopathy (HIE), a common neonatal brain injury, is associated with cerebral palsy and feeding disorders. Robust studies of outcomes important to families are required to effectively determine factors that positively and negatively influence oral feeding outcomes following HIE. Here, we outline the findings of a systematic review aiming to answer: 'what factors influence oral feeding outcomes following neonatal HIE?'

METHODS: Eleven databases were searched in November 2022 and again in July 2023. Titles/abstracts and full-texts were screened against inclusion criteria (e.g., born >34 weeks, aged <5 years). 100% of titles/abstracts and 20% of full-text were double-screened. Reference lists and citations were checked for all included papers, and 138 relevant review papers were screened. Authors were contacted for further details as needed. See PROSPERO (CRD42023375506) for full methods.

RESULTS: After removing duplicates, 2779 titles and abstracts were screened, with 422 meeting inclusion criteria for full-text screening. 60 papers are included in this systematic review. Over 10 feeding outcomes have been studied in relation to over 50 influencing factors. No interventions specifically targeted feeding/swallowing function, and only one study used a standardised feeding measure. No qualitative or mixed methods studies were found and no studies explored outcomes

from the perspective of the child or family. Meta-analysis is planned for suitable outcomes, including effects of neuro-protective treatments on swallow function.

CONCLUSIONS: This systematic review and meta-analysis identifies factors that influence oral feeding outcomes after HIE. These can then be harnessed for the development of HIE-specific feeding interventions.

## Factors influencing breastfeeding and lactation outcomes following neonatal hypoxic ischaemic encephalopathy: A mixed methods systematic review

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BACKGROUND: Hypoxic ischaemic encephalopathy (HIE) is the most common form of brain injury in term-born infants. It is associated with feeding disorders and can significantly add to breastfeeding and lactation challenges. To better understand these challenges and potential solutions, this systematic review aims to answer the question: 'what factors influence breastfeeding and lactation outcomes after neonatal HIE?'

METHODS: Searches of eleven databases were carried out in November 2022 and July 2023. Qualitative, quantitative, and mixed methods papers were screened against specified criteria (e.g., not born before 34 weeks gestation). Double screening was carried out for all titles/abstracts and 20% of full texts. 138 review papers were also searched, and reference lists and subsequent citations for all included papers were checked. Where necessary, authors were contacted for clarification of details. Full methods are registered on PROSPERO (CRD42023375506).

RESULTS: Following removal of duplicates, 2779 titles and abstracts were screened, of which 422 met the criteria for full-text screening. 9 papers were identified for inclusion in this review. No studies of clinical factors or infant characteristics were identified. Neuroprotective interventions, such as therapeutic hypothermia and magnesium sulphate, may improve breastfeeding and lactation outcomes in the short-term. Only one study investigated outcomes beyond the neonatal phase, and no interventions specifically designed to improve breastfeeding and lactation were identified.

CONCLUSION: Improved understanding of the factors influencing breastfeeding and lactation outcomes following HIE is urgently needed to inform the development of interventions to maximise the success of breastfeeding and lactation for families affected by HIE.

# 'That was a bigger blow than getting the cancer in the first place… to be diagnosed with recurrence' patient and carer experience of recurrent oropharyngeal cancer (OPC) and changes to swallowing and quality of life: A qualitative study

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BACKGROUND: Treatment options for recurrent OPC often mean that patients have to make trade-offs between survival and quality of life or swallowing function. A systematic review (Brady et al., in press) found a dearth of literature on how patients experience functional and quality of life (QoL) changes during and after treatment for recurrent OPC.

METHODS: As part of a larger mixed methods study, longitudinal and retrospective qualitative interviews were conducted with patients and carers, to explore their experiences of how QoL and swallowing function changed over time. Patients recruited prospectively were interviewed pre-treatment and six months later. Retrospective interviews were conducted at around 12 months following treatment initiation. Data were analysed using a Framework approach (Ritchie & Spencer, 1994).

RESULTS: 22 patients and 7 carers have been interviewed to date. Preliminary analysis suggests four themes which are important to patient and/or carers before embarking on treatment for recurrent OPC. These include receiving the diagnosis, involvement in decision making, information provision, and consequences of further treatment. At six and twelve months there appears to be a focus on reframing of QoL, rehabilitation, and living with the side effects of treatment/ disease, including persisting and/ or new swallowing difficulties.

CONCLUSION: Qualitative data on patient and carer experiences at different time points provides rich insights into the realities of treatment for recurrent OPC. These data will be triangulated with swallowing outcome and QoL data collected prospectively and longitudinally, to inform pre-treatment counselling and ongoing support services for patients with recurrent OPC.

# Beyond the PhD - Developing research capacity in Allied Health Professions: a NHS teaching hospital initiative

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Research engagement amongst Allied Health Professions (AHPs) is growing and gaining momentum despite many challenges. Creation of integrated clinical academic career pathways by the National Institute of Health Research and medical research charities such as the Stroke Association exemplifies supporting AHP capacity for clinical-academic careers.

A recent Sheffield Teaching Hospitals initiative is the creation of a clinical-academic postdoctoral fellowship (CPDF). Within the hospitals Combined Community and Acute (CCA) Care Group a growing number of AHPs are forging their research careers but there was a lack of a structured

pathway to facilitate and advance postdoctoral clinical-academic development. This new CPDF enables the time necessary for the successful applicant to engage in research and develop and submit a research grant or postdoctoral fellowship application.

This presentation will describe: the organisational mechanisms involved in the creation of the CPDF, including the CCA Care Group research infrastructure, funding of the award and the role of research leaders and facilitators; the remit of the CPDF and eligibility requirements; and the responsibilities, activities and expectations of the fellow which will be presented through the lens of the first CPDF fellow (SE).

The first year of the award has been deemed a success. Success is quantified by increased AHP capacity in a range of research engagement activities, the award of a prestigious Stroke Association Postdoctoral Clinical Academic Fellowship which will provide SE with the skills and training for development of an independent career in post-stroke dysphagia research and continual funding of the CPDF for aspiring clinical-academic leaders.

## Using flavoured foam tastes with adults with severe and chronic neurogenic dysphagia: An exploration of patient responses and the implications for quality of life

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BACKGROUND: People with severe acquired dysphagia may be Nil By Mouth (NBM). This can have a strong negative impact on their quality of life (QOL). This study describes the use of flavoured foam tastes to enable people who are NBM due to neurogenic dysphagia to experience flavour. The study aimed to gather information on signs or expression of enjoyment/dislike from patients and the implications for QOL.

METHODS: The clinical records of fourteen patients who had trialled foam tastes were retrospectively evaluated. All patients were nil by mouth at the time of the trial, had a range of different neurological diagnoses, cognitive status and tracheostomy status, and resided on a rehabilitation unit or in a highly specialist nursing home setting. Information on behavioural responses when tasting the foam was retrospectively gathered. Four patients had been able to provide additional follow-up information on their opinion of the foam.

RESULTS: Behaviours observed in response to the foam tastes were 57% positive, 10% neutral and 33% negative across all trials. Overall, a majority (nine patients) had a guideline issued for regular ongoing foam tastes following the trial. The four patients who could give additional qualitative information gave mostly positive feedback.

CONCLUSIONS: For some NBM severely dysphagic patients, when practical precautions were taken, having flavoured foam tastes appeared to offer enjoyment and may enhance QOL. This approach could be applicable to client groups beyond those with neurological impairments. Further studies on the risks and benefits of using foam tastes are needed.

# Refining a complex intervention: Swallow strength and skill training with surface electromyographic biofeedback in acute post stroke dysphagia (ssSIP)

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BACKGROUND: Ensuring complex interventions are feasible and implementable as well as effective is important to improve the value of research and reduce waste. Using core elements of the Medical Research Council and National Institute of Health Research complex intervention guidance we refined the ssSIP intervention.

METHODS: The refinement process involved 1. Reviewing up-to-date literature including the findings from an earlier feasibility study, 2. Testing out the latest biofeedback equipment and software. 3. Consulting a Public Patient Involvement (PPI) group with lived experience of dysphagia and 4. Co-designing a training package with a stakeholder group of speech and language therapists and assistants (SLT(A)s).

RESULTS: Changes to the protocol were made such as reducing session length, increasing the frequency of breaks and adding a level of step down to facilitate achievement in tasks. Electrodes were upgraded although the sEMG device and BiSSkiT software remained the most fit-for-purpose. A train-the-trainer package for training SLT(A)s to deliver the intervention was created incorporating the refinements. A programme theory and logic model was developed defining the core components of the intervention, the mechanisms behind them, ongoing uncertainties, context and key outcomes. The core components are inclusion of strength *and* skill exercises which are challenging but achievable and responsive to patients with reliable, clear, visual and verbal biofeedback about performance and delivered intensively and early post stroke by trained SLT(A)s.

CONCLUSION: The ssSIP clinical trial will attempt to test the refined intervention and address ongoing uncertainties about its feasibility and effectiveness.

# The experiences of decision-making by individuals with dysphagia when oral intake modifications are recommended

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Dysphagia and resulting aspiration are widely recognised as having potentially serious effects on a person's health and wellbeing. However, there is a poorly understood relationship between dysphagia and aspiration, a mixed evidence base for the efficacy of modifying oral intake, and a potentially detrimental effect on the individual's quality of life from modified consistencies. It is therefore vital that clinicians understand how individuals with dysphagia perceive and make decisions when approaching conversations about modified oral intake.

This study aims to understand how and why individuals with dysphagia make decisions about oral intake when they have been recommended modified food or drink consistencies. A total of 14 participants shared their experiences of dysphagia via online 'stories' and 30 completed a questionnaire about their decision-making when faced with dysphagia and resulting clinical recommendations.

How participants approached decision-making about eating and drinking is discussed via mixed methods analysis. Participants frequently cited being told that aspiration was the main risk to their health from not eating and drinking recommended consistencies. However, when deciding, more participants mentioned difficulty chewing, risk of choking, or weight loss as being determining factors. Whilst most participants reported feeling that they could choose not to follow recommended consistencies, only 43% felt there were other options to the recommendations. Further themes were analysed including the nature of information given or sought to guide decision-making, as well as reported decision-making behaviours and how these interact with actions taken. More broadly, experiences of having dysphagia are also analysed and themes discussed.

## Underpinning implementation science in the design of a feasibility study of the implementation of a free water protocol in acute stroke unit setting

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BACKGROUND: Designing implementation research can be a daunting task for applied health researchers who are new to the field of Implementation Science (IS). There are different tools available that apply IS concepts and principles to inform the design of implementation research that aim to implement evidence-based interventions into clinical settings.

METHODS: The ImpRes Tool (Hull, 2018) was identified as an IS research development tool to facilitate the design of a feasibility study of the implementation of a Free Water Protocol (FWP) in a NHS acute stroke unit setting. ImpRes contains 10 core domains for researchers to review and consider when designing implementation research.

RESULTS: The ImpRes Tool helped to: articulate the aims of the study; consider the degree of focus placed on evaluating the implementation efforts and outcomes (primary outcomes: feasibility, acceptability, tolerability) versus clinical effectiveness of the intervention (secondary outcomes: quality of life, hydration, development of pneumonia); identify the Consolidated Framework for Implementation Research (CFIR) to guide, embed and evaluate the research; consider methods for prospectively identifying contextual factors and determinants including a systematic review, survey and interviews with healthcare professionals responsible for delivering the FWP in practice; collaborate with patients and the public; and engage stakeholders in intervention and implementation strategy workshops.

CONCLUSION: Designing implementation research can be a complex task. The ImpRes Tool was found to be a helpful tool to facilitate the design of a feasibility study about the implementation of the FWP in acute stroke unit setting.

# Improving understanding of barriers and facilitators to minimise stroke-associated pneumonia in stroke survivors with dysphagia: Learnings from an ethnographic study

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BACKGROUND: Dysphagia is associated with increased risk of stroke-associated pneumonia (SAP). The multifactorial pathophysiology of SAP and inter-play of care processes make it challenging to unpack which components are associated with risk of SAP. The aim of the research was to capture contextual aspects of dysphagia management to build knowledge of how care processes can impact on SAP.

METHODS: The methodology was ethnography and participant observation the method. Implementation of specialist swallow recommendations, positioning, and oral care processes of 10 stroke patients were observed around mealtimes during the first 72-hours of hospital admission. The International Classification of Functioning, Disability and Health model was used to analyse data. People affected by stroke were involved in the analysis process, and cogenerated themes and implications for clinical practice.

RESULTS: Four themes were generated from the data: 1. Communication about the person's dysphagia management plan and staff attitudes; 2. Variations in staffing resources and assistive products, implementation of the dysphagia recommendations and oral care, and knowledge of dysphagia diets; 3. Patient preparation for mealtimes and medications; and 4. Swallowing and oral care is everyone's business.

CONCLUSIONS: This research increases understanding of environmental barriers and facilitators to reduce risk of SAP. Implications for practice include: processes for communication of the swallowing recommendations; patient-carer information needs; staff awareness of dysphagia diets and maximising opportunities for peer education; exploring ways to alleviate staffing pressures to set-up patients for mealtimes; provision of mouthcare; and availability of resources to support implementation of the swallowing management plan and oral care.

# Validity and reliability of Dysphagia Outcome Severity Scale (DOSS) when used to rate Flexible Endoscopic Evaluations of Swallowing (FEES)

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BACKGROUND: The Dysphagia Outcome and Severity Scale (DOSS), incorporating WHO ICF components, is used both clinically and within dysphagia research, internationally. Although it was developed using videofluoroscopic swallowing studies (VFSS), it is frequently used to rate Flexible

Endoscopic Evaluations of Swallowing (FEES). The validity and reliability of DOSS-use with FEES, however, has not previously been evaluated. This study investigated the validity and rater reliability of clinicians using DOSS to rate FEES. Effect of clinical experience was also investigated.

METHODS: Eleven Speech-Language Pathologists (SLPs) with varied dysphagia experience were recruited to review and DOSS-rate 17 soundless FEES (198 bolus swallows) recorded from 12 heterogenic dysphagic patients, 2 repeat FEES, and 3 healthy adult FEES. The SLP DOSS-ratings were compared against the initial comprehensive dysphagia examination (including patient diagnosis, interview, cranial nerve and complete FEES assessment) with Functional Oral Intake Scale (FOIS) and DOSS outcome measures. The SLPs were blinded to patient details and comprehensive dysphagia examination. Re-randomised rating of FEES cases occurred two weeks later for intra rater reliability.

RESULTS: Criterion validity for DOSS-ratings (compared against comprehensive dysphagia evaluation with FOIS and DOSS) were strong ($r_s$=0.821 and 0.896 respectively; p<0.001). Both intra and inter rater reliability demonstrated excellent agreement (ICC>0.94) regardless of dysphagia experience or previous experience of using DOSS.

CONCLUSION: This study's results, with strong criterion validity and excellent rater reliability by SLPs (with varied dysphagia experience), adds to the evidence for DOSS-use with FEES. Future validity research comparing DOSS with both FEES and VFSS simultaneously is recommended.

## An innovative liquid thickener improves palatability and overall user satisfaction of thickened fluids for people with swallowing problems

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BACKGROUND: Texture, flavour and overall user experience need significant improvements to increase acceptance and compliance of thickened fluids for people with oropharyngeal dysphagia (OD). Commonly cited reasons for noncompliance are poor texture, flavour and overall user experience. Carers' beliefs that modified fluids are unpalatable and challenges/inconvenience associated with preparation also contribute. Precise Thick-N INSTANT (PTI) is an innovative liquid xanthan gum (XG) thickener. This prospective multi-centre single-arm feasibility study compared palatability and user experience of PTI to powdered XG thickeners in a cohort of OD patients.

METHODS: Oral fluids were thickened with PTI, adhering to standardised requirements, and tested for palatability (primary outcome) and ease of use (secondary outcome), by medically diagnosed OD participants for 14 days, following 7 days under powdered XG regime and a 5-day washout period. Results: Mean (n=24) overall palatability perceptions were significantly higher (p<0.001) for PTI-thickened beverages (mean 8.04) than for XG powder (mean 4.17) with substantive improvements in all individual palatability and satisfaction/ease of use attributes.

DISCUSSION: Individuals prescribed powdered thickeners typically recount thickened beverages as disagreeable/unpleasant using pejorative terms to describe their experiences. Unsurprisingly, patient-initiated intake restrictions, consistency modification and premature treatment termination commonly result. In this study the PTI regime reported higher scores for palatability and substantive improvements in all patient and/or caregiver satisfaction/ease metrics.

CONCLUSION: PTI-thickened beverages are more palatable, and strongly preferred over XG powders. The innovative liquid thickener substantively improves both caregiver and patient experience supporting optimal hydration in adults with OD.

## Quantitative muscle ultrasound (QMUS) echogenicity analysis of the muscles involved in chewing and swallowing: device-settings for the SwallowDM1 study

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Quantitative muscle ultrasound (QMUS) echogenicity analysis enables detection of pathological changes in the muscles involved in chewing and swallowing. These changes in people living with neuromuscular disease (plwNMD) include fatty replacement and fibrosis which reflect sound waves more strongly than muscle and increase echogenicity. The SwallowDM1 research study (ClinicalTrials.gov ID NCT05865483) will use QMUS to establish whether the size and structure of the muscles involved in chewing and swallowing in people living with myotonic dystrophy type 1 (DM1) differ to healthy controls.

QMUS echogenicity analysis is conducted by selecting a region of interest (ROI) from the muscle image and evaluating its grayscale via ImageJ software. This approach requires reference values that are device dependent. Researchers therefore need to understand how the grayscale of the ultrasound image is affected by the hardware set-up and end-user selection of settings of their chosen device.

Manipulable settings on the GE LOGIQe device, including depth, focus and harmonics, were systematically explored to establish the effect of altering these settings on image grayscale. Using a block of tofu (representing a homogenous texture), the effect of altering device settings was analysed after exporting images as DICOM files to ImageJ.

Nineteen different settings were explored, and a comprehensive table developed outlining the impact of each adjustment. Final settings were determined in accordance with QMUS guidelines. By sharing these device-settings we hope to encourage more practitioners to explore use of QMUS in plwNMD. The protocol will now be used in a cohort of 60 healthy controls & 90 plwDM1.

## An investigation of the parameters of swallowing impairment in dysphagic lung cancer patients (LCP) using videofluoroscopy

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BACKGROUND: Oropharyngeal dysphagia in lung cancer leads to adverse outcomes but the nature of swallowing impairment in this cohort is not well documented. This evaluation sought to describe the dysphagia presentation in LCP using videofluoroscopy to guide future management.

METHODS: A retrospective review of videofluoroscopies conducted with LCPs at a UK cancer centre from January 2020-July 2023 was conducted. Examinations followed a protocol and outcomes included Penetration-Aspiration Score (PAS), Dynamic Imaging Grade of Swallowing Toxicity (DIGEST) and MBSImp descriptors.

RESULTS: Of 35 studies; 31 patients had nodal disease, 25 had metastases (66%), 23 had vocal cord palsy (VCP).

Silent aspiration occurred in 40% (n=14, PAS 8) and uncleared aspiration occurred in 14% (n=5, PAS 7). Of those with PAS 7/8, 68% (n=13) had VCP. There was penetration in 29% (n=10, PAS 2/3) and no penetration/aspiration in 17% (n=6, PAS 1).

The most common impairments were: reduced anterior hyoid movement and laryngeal vestibular closure (63%, n=23), delayed swallow (57%, n=20), reduced laryngeal elevation and tongue base retraction (51%, n=18) and epiglottic inversion (49%, n=17). Pharyngeal residue was less common; 26% (n=9) had Grade 1 and 11% (n=4) had Grade 3 Efficiency DIGEST scores.

CONCLUSION: Over half of LCP presented with severe dysphagia with motor and sensory impairments, resulting in silent and/or uncleared aspiration. Of those who aspirated, VCP was common but not always present.

The findings suggest that instrumental assessment is beneficial for LCP. Rehabilitation should target airway protection and further research is needed.

Limitations include the small and retrospective sample size.

## Intrapersonal variability in hyoid movement during normal swallow

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Intrapersonal variation in the physiology of swallowing could be impacted by a range of factors, such as bolus consistency, bolus size, thirst and room temperature (e.g., Sia, et al, 2018; Nagy et al., 2015). It is important for speech and language therapists to understand the amount of intrapersonal variation they might be presented with to differentiate normal from abnormal swallowing. In addition, intrapersonal variability in swallowing function may also impact the representative of a single assessment of swallowing function. This study aims to identify the normal interpersonal variation in hyoid movement during swallowing.

Swallowing data (5ml and 10ml) were collected from 13 healthy participants in two sittings using ultrasound evaluation of swallowing (USES). A pocket-sized ultrasound system (Micro, Articulate Instruments Ltd, Edinburgh, UK) operating in standard B-mode was used for recording. A 2–4 MHz 60 mm radius convex probe was fitted on the UltraFit headset to maintain the probe in the midsagittal plane and reduce movement relative to the head. The movement of the hyoid bone was tracked throughout a swallow using the DeepLabCut with Mobile Network 1.0 network (Wrench & Balch-Tomes, 2022). From the tracked movement of the hyoid, a range of parameters were used to evaluate the amplitude, duration and velocity of the hyoid movement.

The hyoid metrics were compared across the different volumes and the two sittings to evaluate the intrapersonal variation in hyoid movements. This investigation of intrapersonal variation provides insight into normal variation. The clinical implications of the findings will be discussed.

# Dysphagia management in Extra-Corporeal Membrane Oxygenation (ECMO)

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BACKGROUND: Critical care patients have significant risk of dysphagia and benefit from Speech and Language Therapy (SLT). However, requirements for SLT for ECMO patients is not widely reported. This study explores the outcomes of patients treated with ECMO and referred to SLT to inform service provision.

METHODS: Retrospective study over 12 months from July 2022 of all ECMO patients referred to SLT at a UK ECMO centre. Data examined assessment and therapy required, dysphagia outcomes (Functional Oral Intake Scale, FOIS) and tracheostomy management.

RESULTS: 27 patients were referred to SLT (19m, mean 41y) with no contra-indications to SLT. All had been intubated with Severe Respiratory Failure, one had a stroke during ECMO.

70.4% (n=19) were tracheostomised; 9 inserted during ECMO and 10 following decannulation. Six were repatriated with tracheostomies; the remaining 13 were all decannulated with a median (IQR) tracheostomy duration of 14 (5) days.

37% (n=10) required Fibreoptic Endoscopic Evaluation of Swallowing including 1 during ECMO.

29.6% (n=8) required swallow therapy and one had Above Cuff Vocalisation. All received daily assessment and oral trials as indicated.

All were nil by mouth on initial contact; oral intake commenced median 1 day (IQR 11) after initial assessment. 9 were repatriated with ongoing SLT; of the remainder, 77.8% (n=16) were eating and drinking normally (FOIS 7) on inpatient SLT discharge.

CONCLUSION: ECMO patients present with needs that justify a responsive SLT service consistent with other critical care cohorts, including resource for tracheostomy weaning. Patients typically improved to full oral intake as inpatients.

# The effectiveness of an intensive dysphagia therapy program to rehabilitate swallow function: A case study

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BACKGROUND: RG is a 66 year old gentleman who was admitted to an intensive care unit with a diagnosis of ventriculitis and intracranial abscesses, requiring a right VP shunt and left frontal EVD. He transferred to the rehabilitation setting 4 months post onset. He presented with moderate dysphagia characterised by poor pharyngeal sensation and swallow mistiming as evident on initial FEES assessment. He required Level 2 fluids and Level 7 Easy To Chew diet, avoiding mixed consistencies.

METHODS: Therapy was completed 4-5 times per week for 5 weeks. The Expiratory Muscle Strength Training device was used to improve pharyngeal sensation and airway protection alongside trials of fluids using a bolus hold strategy to improve swallow timing and co-ordination.

RESULTS: Repeat FEES indicated evidence of improved pharyngeal sensation. As a result, RG was able to safely manage thin fluids and mixed consistencies, moving from a 5 to a 6 on the Functional Oral Intake Scale (FOIS). RG expressed this had a positive impact upon his quality of life and options for eating and drinking on the ward. FEES was also used as a tool for biofeedback and patient education which led to improved compliance.

CONCLUSION: This case study highlights the importance of utilising FEES for assessment as a diagnostic tool and to guide treatment. It has been useful to trial therapeutic interventions ensuring an individualised therapy plan and to provide biofeedback and education to this patient. It also highlights the effectiveness of EMST to improve sensation within the pharynx.

## An evaluation of speech and language therapy outcomes for inhalation injury patients following burn injury.

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BACKGROUND: Inhalation injury following a burn describes damage to upper airway epithelial cells. Dysphagia and dysphonia are recognised as prevalent and frequently require Speech and Language Therapy (SLT) rehabilitation. No best practice guidelines are available for these interventions. We explored our clinical outcomes over a 3 year period.

METHODS: Retrospective data from a UK adult tertiary hospital, including patients admitted with a burn induced inhalation injury from 24/08/2020- 24/06/2023. Patients with Toxic Epidermal Necrolysis diagnosis, not referred to SLT and/or those too unwell to commence tracheostomy wean or oral intake were excluded. CARMS 19078.

RESULTS: N=51 were admitted with burn injuries and referred to SLT, of these, N= 28 (54.9%) had an inhalation injury.

Of the inhalation injury cohort, N=25 (89.2%) were intubated for average 8 days (range 1-30 days). N=20 (71.4%) required tracheostomy insertion, N= 15 (75%) surgical and N= 5 (25%) percutaneous. N=13/20 (65%) were downsized, N=20/20 (100%) were decannulated prior to discharge. Average time with tracheostomy was 46.6 days (range 8-209 days).

N=21 (75%) of patients with inhalation injury underwent Fibreoptic Endoscopic Evaluation of Swallowing. Main findings included laryngeal oedema, impaired sensation, erythema and ulceration.

N=24 (85%) were discharged on normal diet and fluids, N=2 (7%) on modified diet recommendations and N=2 (7%) required Percutaneous endoscopic gastrostomy placement.

CONCLUSIONS: We identify a positive and complex functional rehabilitation trajectory following inhalation burns. Given the paucity of evidence further prospective investigation in to the assessment and rehabilitation of dysphagia within this cohort would be beneficial.

## Evaluation of a video-based online swallow exercise programme for patients undergoing (chemo)radiotherapy for head and neck cancer.

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BACKGROUND: Swallowing exercises (SE) are recommended for patients undergoing (chemo) radiotherapy ((C)RT) for head and neck cancer (HNC) to minimise the risk of radiation-associated dysphagia. Adherence to SE is challenging and can impact on outcome. Novel resources may support improved adherence and accuracy. We evaluated the impact of a video-based online SE programme (OSEP) developed by our service.

METHODS: All patients at our UK centre provided with SE for primary or adjuvant (C)RT for HNC during two 3-month periods between October 2021 – October 2022 were included. All were seen by Speech and Language Therapy to demonstrate and practise SE. Cohort 1 received written information; cohort 2 received access to the OSEP. On completion of RT both groups were surveyed anonymously about their experience of SE.

RESULTS: Cohort 1 returned 35 responses (90% response rate, 77% male, modal age-group 55-64); cohort 2 returned 37 (95% response rate, 68% male, modal age-group 55-64). Only 57% of cohort 1 were extremely or quite confident that they were completing SE correctly, increasing to 100% of cohort 2. Those completing SE at least once a day increased from 56% (cohort 1) to 75% (cohort 2). 68% of cohort 1 found SE helpful, increasing to 84% of cohort 2.

CONCLUSION: Following introduction of a bespoke, video-based online resource for patients with HNC completing SE, adherence to and confidence with SE increased, and more respondents found SE helpful. Interventions improving adherence can facilitate future work evaluating efficacy of SE and their impact on swallow outcomes.

## Swallowing outcomes following functional salvage total laryngectomy

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BACKGROUND: Functional salvage total laryngectomy (FSTL) may be offered to patients with severe laryngeal dysfunction following primary (chemo)radiotherapy for head and neck cancer, aiming to improve quality of life. Evidence around swallowing outcomes is uncertain necessitating more studies to inform expectations.

METHODS: All patients treated with FSTL at our tertiary cancer centre 2009-2023 were included. Data were extracted from retrospective chart review at baseline, six and 12 months post-surgery. Demographics, airway status and Functional Oral Intake Scale (FOIS) were recorded.

RESULTS: Ten patients were included (mean age at surgery 65.9 years, 70% male), with baseline and six month data available for all and 12 month data for nine. At baseline, all were Nil By Mouth (NBM) and reliant on enteral nutrition (EN) with severe dysphagia, 50% (n=5) required tracheostomies due to upper airway obstruction. By six months (N=10) 70% were on full oral intake (FOIS ≥4), 60% tolerated normal diet (FOIS ≥6), 20% required EN to support oral intake (FOIS ≤3), 10% remained NBM. At 12 months (N=9), 67% were tolerating normal diet, 22% still required EN but none were

NBM. The remaining patient is currently six months post-surgery, increasing oral intake and expected to be off EN by 12 months.

CONCLUSION: All patients were NBM pre-FSTL and most were able to re-establish full oral nutrition post-surgery, but a minority required ongoing EN at 12 months. Further work with a larger cohort may identify factors that influence functional outcome. Variability in outcome should be explained to patients considering FSTL.

## Quantitative ultrasound (QMUS) of the muscles involved in chewing and swallowing in healthy adults aged 18-70 years

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The SwallowDM1 research study (ClinicalTrials.gov ID NCT05865483) will use Quantitative Muscle Ultrasound (QMUS) to establish whether the size and structure of the muscles involved in chewing and swallowing in people living with myotonic dystrophy type 1 (DM1) differ to healthy controls. Whilst reference values exist for children and young adults, QMUS values are device-dependent and no data exit for healthy adults >30 years.

Using pre-established settings, data from 60 healthy adults aged between18-70 years will be collected using a GE LOGIQe ultrasound device. This will include ≥10 adults per 10-year age group (18-29, 30-39, 40-49, 50-59, 60-70), split equally between male and female. Images of anterior belly digastric, geniohyoid, masseter, temporalis, genioglossus, and the transverse muscles of the tongue will be acquired using a previously described protocol. Measurements of each muscle group will include muscle thickness and echogenicity using grayscale analysis. Measurements will be repeated three times using three consecutively acquired images. The mean of each measurement will be used for statistical analysis.

We will examine the influence of independent variables (age, height, weight) on muscle thickness and echogenicity using multiple regression analysis. Differences between male and female participants will be examined using t-tests and measurement inter- and intra-rater reliability will also be described. Reference values will be shared and subsequently used to investigate the mean difference in muscle outcomes between adults with DM1 and healthy controls.

## Decisions on eating and drinking in older adults admitted with pneumonia

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BACKGROUND: As pneumonia in older adults is frequently associated with aspiration, patients are commonly restricted from eating and drinking. However, this risks malnutrition, dehydration, and

poor quality of life. Eating and drinking with acknowledged risks (EDAR) is a decision that enables comfort, dignity, and autonomy for patients who prefer to continue oral intake despite the risk of aspiration. Guidance has been developed to assist the decision-making process. However, identifying appropriate patients and making these complex decisions remains a medical and ethical struggle.

METHODS: We performed a retrospective cohort study of patients ≥ 75 years old, admitted with pneumonia in 2021 and referred to speech and language therapy (SLT). We compared patient backgrounds and outcomes based on decisions regarding their oral intake.

RESULTS: Of the 216 patients undergoing SLT assessment, 14.4% were assessed as appropriate for EDAR, 59.3% for modified diet (MD), 19.9% for normal diet (ND), and 6.5% for nil by mouth. The EDAR group was significantly frailer (p=.007) and had a higher short/long-term mortality (p<.001) compared to the MD/ND groups, with over 90% dying within a year. The pneumonia recurrence rate within 30 days was insignificant among the groups (p=.070).

CONCLUSIONS: A decision for EDAR was made in comparatively few patients and most were associated with end-of-life care. Considering the poor prognosis, it is important to have discussions regarding their preferred choice of intake rather than paternally making a 'safe' decision. As recommended in existing guidance, comfort, dignity, and autonomy are a priority regardless of disease stage.

## Swallowing and Nutritional Outcomes in head and neck cancer patients undergoing (chemo) radiation: A single centre experience

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BACKGROUND: Head and neck cancer (HNC) patients undergoing radiotherapy risk malnutrition and dysphagia. Debate exists in the literature on enteral feeding (EF) type and timing. One of the aims of our joint pre-assessment clinic is to counsel patients on the potential need for (EF). We aimed to examine the rate, nature and timing of EF and swallowing outcomes.

METHODS: A single site retrospective review of HNC patients (n=150) undergoing (chemo) radiotherapy from January 2022- January 2023 was undertaken. Data on EF timing and method, and swallowing outcomes were collected using the Performance Status Scale for Head and Neck Cancer (PSS-HN) Normalcy of Diet (NOD) at baseline and three months post treatment.

RESULTS: The sample included 109 males and 41 females. Average age was 60.7 years (range: 25-87). Tumour sites involved oral cavity (n=31), oropharynx (n=73), nasopharynx (n=9), parotid (n=7) hypopharynx (n=7) and larynx (n=23).

At baseline EF rate was 10% with 62% on solid diet, 4% puree, 3% liquids. EF rate rose to 25% during and in the acute phase post-treatment. After three months EF rate fell to 13% with 46 % on solids, 4% liquids, one NBM.

Median weight loss of 6%, (range -9-25). 10% who declined EF, demonstrated a median weight loss of 11% (range -8.6-18).

CONCLUSION: We have identified that EF rates increase during the acute phase of treatment but decrease by three months correlating with a decrease in PSS rates from baseline. MDT working and shared decision making is essential for recommending EF.

## Safe Efficient and Enjoyable Mealtimes (SEEM Study): Creating a toolkit for families of children who need assistance with eating and drinking: A multi-method investigation

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BACKGROUND: People with dysphagia who require mealtime assistance are at greater risk of emergency hospitalisation and other negative outcomes. However, the abilities and experiences of family-carers providing mealtime assistance to children are unknown. This multi-method PhD investigation will create a toolkit to support family-carers and Speech & Language Therapists (SLT) when developing mealtime recommendations, including the change(s) targeted (texture, pacing) and adherence approaches.

METHODS: The 'develop intervention' stage of the MRC framework for complex intervention development guided 4 studies:

Best research evidence: systematic literature review (Study A)

Clinical expertise: survey of UK SLT clinical practice (Study B)

Patient and/or carer values: qualitative family mealtime exploration (Study C)

These findings will be synthesised and a prototype toolkit produced via co-creation (Study D)

RESULTS: Study A: Prospero registration [CRD42021257596], searches and screening completed. Included studies are highly heterogeneous in both participant type (child, carer or dyad), targeted changes, location and outcomes.

Study B: Recruitment completed (May-July 2021). 102 participants progressed to final question. SLTs used multiple mealtime recommendation targets (n=27) e.g., positioning, utensils. Many frequently (n=22, >60% reporting sometimes-often). Qualitative analysis revealed two main SLT working styles, 'Consultative collaboration' or 'Informative prescription'.

Study C: NHS ethics approval anticipated with planned protocol registration and data collection (October-December 2023).

Study D: Planned (2024-25).

DISCUSSION: Findings so far highlight the complexity of creating mealtime recommendations due to multiple potential targets and a limited research evidence base. Future and current findings will guide the toolkit creation to support this complex practice area.

## Identifying dysphagia risks in people with a learning disability in the community: A speech and language therapy service evaluation

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BACKGROUND: A main cause of preventable deaths in people with learning disabilities is aspiration pneumonia. This is caused by food, drink or stomach contents going into the lungs due to eating, drinking and swallowing difficulties (dysphagia). Speech and Language Therapists support people with dysphagia. There is limited evidence on the assessment and intervention practices for Speech & Language Therapy (SLT) Learning Disability services or how they adapted during the COVID-19 pandemic.

METHODS**:** This study evaluated the current telehealth practices of an existing SLT service supporting people with learning disabilities and dysphagia. An existing Annual Dysphagia Telephone Triage database was accessed, with 33 patient case notes reviewed tracking their SLT dysphagia involvement from 2016-2021. Data was evaluated using descriptive statistics.

RESULTS: Tracking the service provided novel demographic information and outcomes for this group, including reduced hospital admissions during 2020. Inconsistent delivery of the triage service demonstrated the need for more robust methods to highlight dysphagia risks amongst caregivers, health and care providers. It was feasible to conduct video telehealth appointments, but face-to-face assessments were maintained.

CONCLUSION: The results provide a valuable insight into issues faced when aiming to provide appropriate support for people with learning disabilities and dysphagia. It was feasible to offer video assessments as an adjunct to face-to-face assessment. Dysphagia management remains core to SLT delivery, however early detection by the health and care practitioners and caregivers would ensure timely SLT intervention. Further research is warranted to address effective dysphagia identification and subsequent proactive SLT service delivery.

## Eating and drinking outcomes in children with SMA type-1 treated with gene therapy

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This is a retrospective service evaluation using case note review to analyse early bulbar outcome data in children with Spinal Muscular Atrophy type 1 (SMA1).

METHOD: A single-centre retrospective analysis of 25 children treated with gene therapy. Bulbar function was assessed using the Children's Eating and Drinking Ability Scale (CEDAS) at baseline (pre-treatment), then 6, 12, 18 and 24 months post-treatment.

RESULTS: 25 children were treated between 1 month - 7.5 years, mean age. 16 months. All patients had baseline and 6-month CEDAS scores. The mean CEDAS score at baseline was 4.9 (max score 6), at 6 months : 4.9, at 12m (n=14) 4.4, at 18m (n=7) 4.4 and at24m (n=7) 4.4.

16 of the 25 patients were treated under 1 year of age. Mean baseline CEDAS score 4.8, at 6 months 4.9 and at 12 months (n=11) was 5.3. Further statistical group comparisons are planned.

CONCLUSION: This review indicates that children treated with gene therapy maintain bulbar function, with scores stable across the 4 time points. This is in contrast to 1st generation, protein replacement therapy, where bulbar function deteriorates (Weststrate et al, 2022). Analysis of patients treated under 1 year of age suggests not only stability of bulbar function but also improvement over time. These early findings indicate that gene therapy supports stability, and possible progress, in bulbar function over time and contributes to the small, but growing data on this emerging population and the new natural course of SMA1 with disease modifying treatment.

## Development of a head and neck lymphoedema quality of life scale

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BACKGROUND: Head and neck lymphoedema (HNL) is a common consequence of head and neck cancer (HNC) treatment and may result in functional repercussions such as dysphagia which may impact quality of life. Currently, no tool exists to measure quality of life issues related to HNL. As a result, the purpose of this study was to develop an instrument to be used in patients with HNL to better assess quality of life.

METHODS: Candidate items were developed from previously completed qualitative interviews of patients with HNL. Binning and winnowing were completed to minimize item redundancy and to ensure all salient constructs were included. Patients with HNL and HNC practitioners completed a Qualtrics survey regarding the clarity, importance, and intrusiveness of each item. Lawshe's Content Validity Ratio was utilized to establish initial inclusion of items. Based on the Qualtrics survey, the initial instrument draft was created and tested through three-step cognitive interviews with patients with HNL.

RESULTS: Based upon thematic analysis of qualitative interviews, 130 candidate questions were developed. After the binning and winnowing process, 73 items were retained for expert review. 18 participants completed the Qualtrics survey, yielding 52 candidate items to continue to cognitive interviews. Cognitive interviews were completed with 5 individuals with HNL, yielding a final tool comprised of 32 items.

CONCLUSIONS: Applying recommendations for best practice for patient reported outcome measures, we developed an HNL specific quality of life instrument. Future work to establish validity, reliability, and utility of this instrument is planned.

## Generating UK normative data for the Feeding Swallowing Impact Survey

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BACKGROUND: The feeding swallowing impact survey (FS-IS) is an 18-question, 3 subscale, validated tool measuring parent/caregiver impact of children's eating, drinking and swallowing

difficulties. This study aimed to understand how parents of children without eating, drinking or swallowing difficulties rate on the FS-IS, generating UK normative sample data.

METHODS: Parents of children aged 6 months-11 years were invited to complete an anonymous, online questionnaire, consisting of consent, demographic details, relevant medical history, eating/drinking/swallowing difficulty screening (Pedi-EAT-10) and the FS-IS. Median and interquartile ranges (IQR) were calculated (total and subscale scores) and percentile rankings (total score). Preschool and school age medians were compared using Mann-Whitney U test. The relationship between variables was explored using Spearman's correlation and linear regression.

RESULTS: The final sample consisted of 905 parents, 548 of children aged 6 months-4 years (preschool), 357 of children aged 5-11 years (school age). Total scores ranged from 18-63 from a possible score range of 18-90. Median (IQR): total scores: 20 (3). Median (IQR) subscale scores: daily activities 5 (1), worry 9 (2), feeding 6 (0). Percentile rank scores: 5th percentile 18, 50th percentile 20, 95th percentile 28. A statistically significant difference was found in median total scores between preschool and school age children (p=<.001). However, the actual median difference of 1.5 is of limited clinical relevance.

CONCLUSIONS: This data provides UK norms for the FS-IS. This data facilitates evaluation of parental impact of feeding difficulties, a key component of holistic, family-centred care.