The New Zealand Speech-language Therapists' Association (NZSTA)

Practice Standards:

Flexible endoscopic evaluation of swallowing

(FEES) in adults and children in New Zealand

Acknowledgements

Authors
Mary McFarlane– Counties Manukau Health
Anna Miles -The University of Auckland
Becca Hammond– Waitematā DHB

Working Party
Melissa Keesing- Auckland DHB
Laura O Carrigan – Capital & Coast DHB
Mary McFarlane – Counties Manukau Health
Alicia Smith - Hawkes Bay DHB
Antony Ting- Lakes DHB
Jess Clews-Lakes DHB
Brigid Fay- Mid Central DHB
Jodi White- Mid Central DHB
Anna Miles -University of Auckland
Rebecca Ross (née Owen) – Waitematā DHB
Becca Hammond – Waitematā DHB

Reviewers
The New Zealand Speech-language Therapists' Association Executive Committee
The New Zealand Speech-language Therapists' Health Leaders Forum

Background

It is the position of the New Zealand Speech-language Therapists' Association (NZSTA) that Flexible Endoscopic Evaluation of Swallowing (FEES) is within the scope of practice for Speech-language Therapists (SLTs). FEES should only be carried out by SLTs specifically trained to do so and therefore requires a competency framework to provide support to trainers and to ensure trained members perform and interpret FEES safely and accurately.

This competency framework should be interpreted with the unique New Zealand context in mind. As health professionals working in New Zealand and members of the NZSTA, we are committed to upholding the Treaty of Waitangi and to reducing health inequities. Clinicians utilising this resource should ensure their practices are culturally appropriate and demonstrate the importance of holistic views of health and wellbeing that include physical, mental, social and spiritual elements, especially with persons who identify as Māori (see Appendix 1),

Aim

Instrumental assessment of known or suspected dysphagia is vital given the limitations of the clinical/bedside swallowing/feeding evaluation. It is acknowledged that FEES is a validated instrumental swallowing assessment tool and is clinically important (Langmore et al., 1998, Leder et al., 2002). FEES is now becoming more readily available within New Zealand. This has resulted in the need for the development of New Zealand practice standards for SLTs working with FEES.

Purpose

- To ensure SLTs within New Zealand carrying out FEES are practicing within nationally accepted standards.
- To promote and support consistency of FEES practice within New Zealand speech-language therapy services.
- To ensure maintenance of professional standards in order to optimise patient management and safety.
- To provide a supportive and consistent framework for developing and maintaining FEES competency for New Zealand-practicing SLTs.

Definition of FEES

For the purpose of this document, the definition of FEES has been altered from *Fiberoptic* Endoscopic Evaluation of Swallowing to *Flexible* Endoscopic Evaluation of Swallowing to reflect current practices in endoscopic technology.

FEES is a recognised tool for the assessment of swallowing disorders. It has been carried out by SLTs since its inception and description by Susan Langmore in 1988.

FEES is a complete assessment of the pharyngeal stage of swallowing. It includes five components:

- assessment of anatomy relevant to swallowing
- assessment of the pharyngeal stage of swallowing
- assessment of the movement and sensation of critical structures within the hypopharynx and laryngopharynx
- assessment of secretion management
- assessment of swallowing function for food and liquid, and response to therapeutic maneuvers and interventions to improve swallowing (Langmore, 1996).

During a FEES procedure, a flexible endoscope is passed transnasally to the level of the oropharynx and hypopharynx, providing a view of the larynx and surrounding structures. The endoscope is linked to a monitor to enable viewing of the image. This ensures that the procedure can be viewed simultaneously by all clinicians in

attendance and enables recording of the procedure for accurate reporting, patient feedback and maintenance of data.

Following a FEES, the findings are used to develop recommendations on the appropriateness of oral intake, the amount and texture/consistency of oral intake, positioning during oral intake, maneuvers to improve the safety and efficiency of swallowing, planning swallow rehabilitation and consideration of the need for further assessment.

There is good evidence to support the benefits of using FEES across the spectrum of the clinical population e.g. stroke (Bax et al., 2015; Leder et al., 2002), traumatic brain injury (Leder, 1999), critical care (Ajemian et al., 2001), head and neck cancer (Denk et al.,1997) and paediatrics (Leder & Karas., 2010).

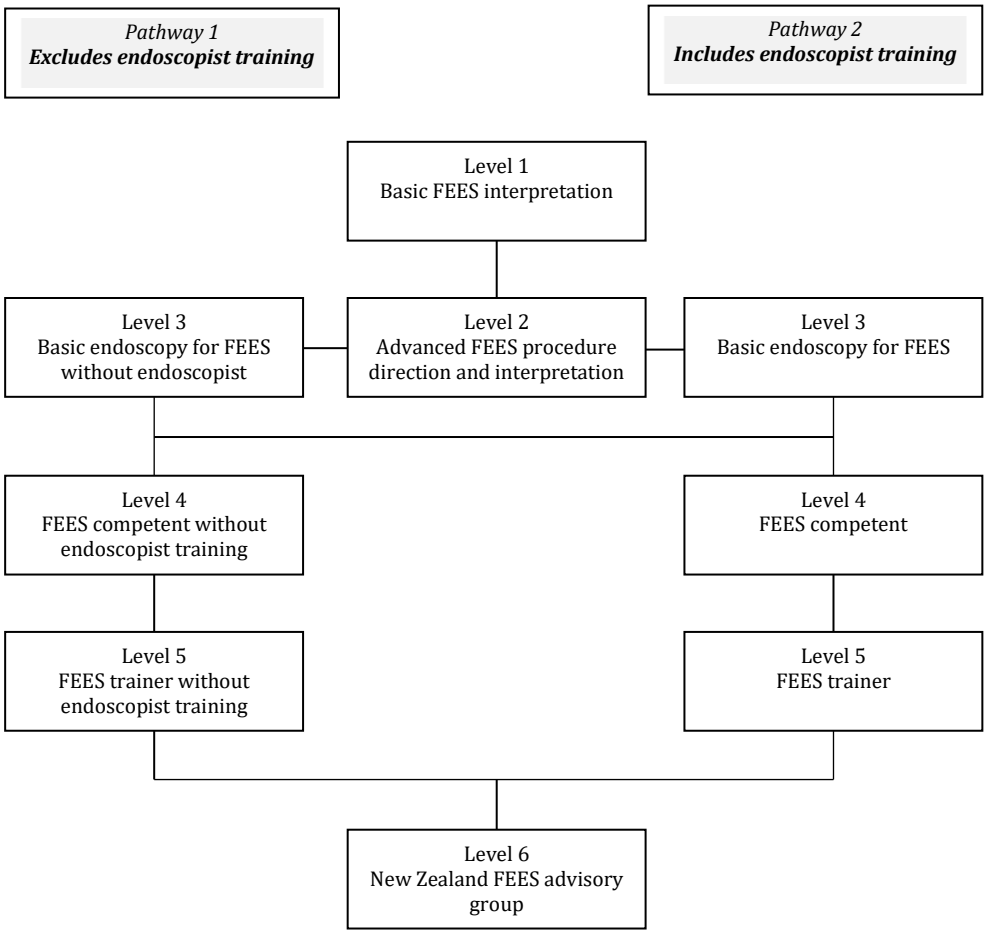
Scope of practice

- It is the position of the NZSTA that FEES is within the scope of practice for SLTs.
- FEES should only be carried out by SLTs specifically trained or training (with supervision in place) to do so.
- Due to emerging FEES practice for the paediatric population in New Zealand at the time of publication, while an SLT may be involved in the procedure and interpretation of FEES for infants/children*the endoscopy itself should be carried out by an experienced registered medical practitioner such as an otorhinolaryngologist (ORL)
- Any newly observed and relevant anatomical abnormality noted during FEES assessment should be documented in the medical record and appropriate specialist referrals initiated. Registered medical practitioners are the only professionals permitted to make medical diagnoses related to the identification of laryngo-pharyngeal pathology.
- FEES is intended as an assessment of the physiology of swallowing only and is not a replacement for otolaryngology assessment of the structural integrity of the upper aerodigestive tract.
- FEES should only be used for the purpose of evaluating and treating patients with known or suspected swallowing disorders.

**in the context of this document, at the time of publication, 'children' is defined as persons under 16 years of age,* however should an adolescent require a FEES as part of their clinical intervention it is expected that local advice should be sought from an experienced registered medical professional such as an ORL in order to ascertain if it is safe for a FEES competent SLT to perform the endoscopy. Full consideration of the specific adolescent and the SLT's level of experience and competency adult endoscopy should be made in each case.

Training and competency

An established competency for FEES is mandatory – see NZSTA recommended FEES Competency Framework.



High risk patients

In the instance that an SLT-led FEES is indicated for a high risk patient (examples provided below), additional medical discussion is required prior to commencement of the procedure. The following factors should be taken into account when considering FEES for high risk patients:

- Age of the patient (infant/children e.g., medically fragile, breastfed infants require the endoscopist to be an experienced registered medical practitioner such as an ORL)
- Level of SLT's FEES-related experience
- Ability of FEES clinician to manage any adverse events should they occur
- Access to medical & life support should it be required
- Need for presence of another professional e.g. ORL
- Team consideration of the benefits versus potential risks of the FEES procedure to the patient.

Consultation with local otorhinolaryngology (ORL) services is recommended in order to develop local policy for specific patient groups that may be contraindicated for SLT-led FEES procedures.

High risk patients for FEES include those with:*

- known scar/ mass/ tumour obstruction in the nasal airway/ nasopharynx
- known or strongly suspected uncooperative behaviour
- base of skull and/or facial fractures sustained or treated within the previous 4 weeks
- history of severe epistaxis (nose bleeds) that occurred in the previous 4 weeks
- sino-nasal and anterior skull base surgery completed in the previous 4 weeks
- bilateral nasopharyngeal stenosis
- current severe respiratory compromise (without adequate respiratory support).

* This is not an exhaustive list.

Complex patients

Endoscopy for complex patients should only be carried out by an SLT in the presence of or by a clinician who has been signed off as FEES Competent Level 4 or above, as per NZSTA Competency Framework, or by an experienced registered medical practitioner such as an ORL. However, it is acknowledged that there will be times where a patient who does not appear complex from the history is found to be complex during endoscopy. In these cases, a clinician with basic endoscopy for FEES - level 3 should continue through the procedure as long as they feel it is safe to do so. As with all clinical activity, SLTs must adhere to the SLT code of ethics and as such work within their own personal skill set and boundaries. If during the procedure it is too challenging to continue, then it should be discontinued.

Complex patients for FEES include those who:

- have demonstrated a previously difficult or poorly tolerated procedure e.g. due to narrow nasal passages
- have positioning limitations
- demonstrate high levels of anxiety
- demonstrate agitation (from mild to profound)
- have significant cognitive impairments
- have movement disorders, including significant dyskinesia

Adverse effects

FEES is widely accepted as a low risk procedure but there are possible complications. The following have been reported:

- **Patient discomfort**: although quite common, discomfort is usually mild. Evidence from 500 consecutive endoscopic swallowing evaluations showed 86% of patients rated discomfort as mild to moderate (Aviv et al., 2000).

- **Epistaxis**: nose bleeds are unusual despite FEES being performed on many stroke patients placed on anticoagulant medications (Langmore, 2001).
- **Vasovagal response**: this is unusual and may be related to very high levels of anxiety. Exercise caution if the patient has a history of fainting.
- **Reflex syncope**: fainting can occur as a result of direct vigorous stimulation of the nasal/pharyngeal/laryngeal mucosa during endotracheal intubation. The type of stimulation occurring for FEES is much less forceful, hence this complication is rare. However, caution must be exercised in patients with unstable cardiac conditions for whom reflex syncope would implicate further risk (Langmore, 2001).
- **Laryngospasm:** this is unlikely if the endoscope is adequately distanced from the larynx (Kidder, Langmore and Martin, 1994).
- **Parental distress:** a well-prepared parent and a calm and organised FEES should not lead to parental distress. It is, however, important to monitor and support family throughout the procedure.

First aid and resuscitation

Due to the invasive nature of the procedure, all SLTs involved in performing FEES must ensure they know and follow local policy regarding patient access to prompt first aid and resuscitation by qualified personnel.

Topical anaesthetic

FEES may be completed with or without topical anaesthetic. However, at the time of publication, topical anaesthesia in New Zealand must be prescribed by a registered medical practitioner and administered by either a registered nurse or registered medical practitioner.

Indications for selecting FEES versus videofluoroscopic study of swallowing (VFSS)

Indications for FEES:

FEES should be chosen where dysphagia appears predominantly pharyngeal in nature as the oral and oesophageal stages of swallowing cannot be visualised using this assessment method. However, FEES should be chosen over VFSS in the following instances:

- Breast-fed infants where feeding difficulties are a concern.
- Severe dysphagia with very weak, possibly absent swallowing reflex.
- Assessment of management of pharyngeal secretions.
- Need to assess fatigue or swallowing status over the duration of a meal.

- Therapeutic examination that requires extended time to trial several maneuvers, several consistencies, variations in position and/or adaptive feeding equipment.
- Assessment of vocal fold closure and ability to protect the airway, hold breath volitionally or sustain breath holding
- Patient is unable to access VFSS or there are concerns around radiation dosage.
- Serial swallowing assessments are required (i.e. avoid serial VFSS which expose the patient to excessive radiation).

Indications for VFSS:

VFSS may be used to gather information on all stages of swallowing based on a limited number of food/fluid trials (due to the need for patient exposure to ionizing radiation) however it should be chosen over FEES where information on the following is required:

- assessment of oral stage of swallowing
- cricopharyngeal function
- assessment of oesophageal stage of swallowing
- impact of structure and/or anatomy on swallowing
- assessment of underling physiology of pharyngeal impairment e.g. hyolaryngeal excursion.

VFSS is also preferable where the patient is unlikely to tolerate endoscopy.

FEES procedure

A minimum of two people are required to be present for all FEES procedures - one as endoscopist and ideally another person to support interpretation. At the minimum a second person is required to assist the patient/whānau/family with food and drink. In paediatrics, it is expected that the endoscopist be an experienced and registered medical practitioner such as an otolaryngologist. A standardised procedure for FEES is advisable – see NZSTA recommended FEES Procedure.
Where two SLTs are conducting FEES together, the level of FEES competence of each SLT must be considered in accordance with NZSTA FEES competency framework.

Referral guidelines & consent

Guidelines for referring patients

- Patients under the care of SLT for the assessment and management of dysphagia can be referred for a FEES procedure as per local protocol (Appendix 2).
- For adult patients (over 16 years), responsibility for weighing up the risks and benefits for the procedure sits with the FEES competent Speech-language Therapist. The FEES trained SLT is required to review available medical records and identify any contradictions or risks for FEES prior to completing a FEES procedure. Where ambiguity or concerns are raised, the FEES competent SLT will

liaise with the patient's registered medical practitioner or an ORL specialist to discuss. For children (under 16years) the registered medical practitioner responsible for the patient must be fully informed and in agreement that the procedure is appropriate.
- Follow local policy regarding necessity of verbal/written consent before the procedure can be carried out.
- A clinical bedside intervention prior to FEES allows determination of the nature and severity of dysphagia and guides the type, appropriateness and timing of instrumental assessment thus maximising its clinical relevance and effectiveness.

Consent

Local policy should be followed for gaining informed consent for a FEES procedure. Informed consent should include an explanation of the procedure, including description of potential risks and benefits. Provision of written information to the patient and/or their whānau/caregiver is recommended where appropriate.

Reporting & recording

Recording

- FEES should always be recorded with sound and vision.
- Local policy should be developed to ensure safe storage and cataloguing of recorded procedures for easy identification.

Reporting

- Contemporaneous and accurate documentation of completion of a FEES assessment, including SLT impression, recommendation and plan should be written in the patient's clinical record as per local policy.
- A standardised report template is advisable – see NZSTA recommended Adult FEES Assessment Report for Adults and FEES Assessment Report for Children for minimum expected standards, for both inpatient and outpatient settings.

Infection prevention & control

Infection control

Local infection control advice **must** be sought for patient populations with known or suspected infectious diseases **prior** to completing FEES. Due to scope decontamination implications, this is of particular importance for patients with suspected or possible Creutzfeldt-Jakob disease (CJD). Use of personal-protective-equipment for FEES procedures with patients with known infectious diseases should always be in accordance with local policy e.g. wearing respiratory masks when working with patients with known/suspected/potentially airborne diseases.

Decontamination of the endoscope

- It is mandatory that a local policy is present to ensure safe decontamination of the endoscope and that a record is available for audit purposes.

- Evidence of the use of a decontaminated scope for the FEES procedure is also mandatory for each FEES completed.
- Local protocol for disinfecting the SLT endoscope must be followed at all times.
- The endoscopist is responsible to ensure local protocol has been followed.

Food hygiene
Local protocol for handling food safely must be followed at all times.

References

- Ajemian MS, Nirmul GB, Anderson MT, Zirlen DM, Kwasnik EM. Routine fiberoptic endoscopic evaluation of swallowing following prolonged intubation: implications for management. *Archives of Surgery* 2001; 136 (4) 434-437.
- Aviv JE, Kaplen ST, Thomson JE, Spitzer J, Diamond B, Close LG. The safety of flexible endoscopic evaluation of swallowing with sensory testing (FEESST): an analysis of 500 consecutive evaluations. *Dysphagia* 2000; 15 (1):39-44.
- Bax, L., Miles, A., Green, E., & McFarlane, M. (2014) Introducing an SLT-led FEES service: Functional outcomes for acute stroke patients. Journal of Stroke & Cerebrovascular Diseases, 23 (3); 195-200. DOI: 10.1016/j.jstrokecerebrovasdis.2013.09.031.
- Denk DM and Kaider. Videoendoscopic bio feedback a simple method to improve the efficacy of swallowing rehabilitation of patients after head and neck surgery. ORL J otorhinolarygol related spec 1997; 59 100-105.
- Kidder TM, Langmore SE, Martin BJ. Indications and techniques of endoscopy in evaluation of cervical dysphagia: comparison with radiographic techniques. *Dysphagia* 1994; 9 (4):256-261.
- Langmore SE, Schatz K, Olsen N. Fiberoptic endoscopic examination of swallowing safety: a new procedure. *Dysphagia* 1988; 2 (4): 216-219.
- Langmore SE. Dysphagia in neurologic patients in the intensive care unit. *Seminars in Neurology.* 1996; 16:329-339.
- Langmore SE. Endoscopic Evaluation and Treatment of Swallowing Disorders. New York: Thieme. 2001.
- Leder SB. Fiberoptic endoscopic evaluation of swallowing in patients with acute traumatic brain injury. *Journal of Head Trauma Rehabilitation* 1999; 14(5): 448-453.
- Leder SB, Espinosa JF. Aspiration risk after acute stroke: comparison of clinical examinations and fibreoptic endoscopic evaluation of swallowing. *Dysphagia* 2002;17 (3): 214-218.
- Leder, S., Karas, D.E. Fibreotpic endoscopic evaluation of swallowing in the pediatric population. The Laryngoscope 2010; 110 (7): 1132-1136.
- Willette, S.,Hinkes Molinare L., Thompson, D.M., Schroder, J.W. Fibreoptic examination of swallowing in the breastfeeding infant. The Laryngoscope 2015.
- Sitton, M., Arvedson, J., Visotcky, A., Braun, N., Kerschner, J., Tarima, S., Brown, D. Fibreoptic endoscopic evaluation of swallowingin children: feeding outcomes

related to diagnostic groups and endoscopic findings. International Journal of Paediatric Otorhinolaryngology 2011; 75: 1024-1031.
- Suterwala, M.S., Reynolds, J., Carroll, S., Sturdivant, C., Armstrong, E. S. Using fiberoptic endoscopic evaluation of swallowing to detect laryngeal penetration and aspiration in infants in the neonatal intensive care unit. Journal of Perinatology 2017 00, 1-5.

Related documents

This Practice standards document should be read in conjunction with the New Zealand Speech-Language Therapists' Association core documents including:

- NZSTA Flexible Endoscopic Evaluation of Swallowing (FEES) Competency Framework (2020)
- NZSTA Flexible Endoscopic Evaluation of Swallowing (FEES) for Adults – Recommended FEES Procedure (2018)
- NZSTA Flexible Endoscopic Evaluation of Swallowing (FEES) for Children – Recommended FEES Procedure (2018)
- NZSTA Flexible Endoscopic Evaluation of Swallowing (FEES) for Adults – Recommended FEES Report (2018)
- NZSTA Flexible Endoscopic Evaluation of Swallowing (FEES) for Children – Recommended FEES Report (2018) – in preparation
- NZSTA Flexible Endoscopic Evaluation of Swallowing (FEES) – Interpretation E-learning module (2018)
- NZSTA Tracheostomy training programme for therapists working with adult patients (2013)
- NZSTA VFSS Guideline (2011)
- NZSTA Principles & Rules of Ethics (2015)
- NZSTA Scope of Practice (2012)
- NZSTA Professional Development Policy (2014)
- NZSTA Supervision Policy (2017)
- Competency-based Occupational Standards for Speech Pathologists (2011)
- NZSTA Full Member Return to Practice Framework (2015)

Appendix 1: Summary of advice from Cultural Advisors on maximising cultural sensitivity within a FEES procedure

The following advice was gained from a variety of cultural advisors who observed an FEES procedure and reviewed the guideline document. This advice is aimed at supporting speech-language therapists to maximise the cultural responsiveness and sensitivity of their services.

Whānau
Value and acknowledge the role and/or participation of whānau and other support people. Provide an opportunity for patient to invite or include others. In many cultures the importance of the family/whānau as a collective must be acknowledged. Including whānau and other support people can contribute to a broader and clearer understanding of the procedure and its purpose. This may also reduce any anxiety for patient and support a higher level of participation with recommendations.

Information
If relevant cultural support services are available, inform patient and/or whānau of these services as early as possible. If patient and/or whānau consent, provide an opportunity for these services to be involved.
Information methods need to be flexible, innovative and relevant to the individual patient and the service they are accessing.

Food
Demonstrate an awareness and openness of diverse beliefs and customs around food as this will assist with the provision of appropriate assessment and management.
Consider: the type of food, how it is prepared, how it is presented and how it is offered
Invite family/whānau to bring appropriate food to the procedure or check with patients and their whānau about the appropriateness of your food options.
Ensure food is prepared, stored and served in accordance with the relevant cultural beliefs and practices of each patient.
Offer the opportunity of karakia (a blessing/prayer) prior to consumption of food.

Thank you to the following cultural advisors at Counties Manukau DHB for giving time to observing FEES procedures and viewing the Guideline drafts and providing valuable advice to our profession. Thank you also to the NZSTA for their valuable contribution.

Ian Kaihe-Wetting - TIP Facilitator, Te Kaahui Oro (Māori Health Services), Counties Manukau DHB
Karla Rika-Heke - Te Kaahui Ora Nurse Educator, Counties Manukau DHB

Appendix 2: Example Referral for FEES – Speech & Language Therapy Department- Waitemata District Health Board

Patient Details

Referrer: **Designation:**
Verbal consent: …❑ **Written consent form:** …❑
Consent for teaching:…❑ **Medical team consent:** …❑

History of presenting illness:

_____

_____

Relevant past medical history:

_____

_____

Does the patient t have a history of epistaxis (nose bleeds); naso-pharyngeal surgery; base of skull/facial fractures or masses; any ORL history? Yes* ☐ No ☐
* If yes, please describe_____

_____

Communication skills:_____

_____

Mobility: Walk ❑ Wheelchair ❑ Bed ❑
Transfers: Independent ❑ Assist ❑ Hoist ❑

Rationale/Goal for FEES: _____

_____

_____

_____

Is the patient going to be able to:
Maintain alertness for 15-20 mins? Yes / No
Have sufficient oral controls to take a bolus? Yes/No

Current diet:
Baseline diet:

Specific strategies you want to trial during assessment? Yes* ☐ No ☐
* If yes, please describe_____

Signature: Date: