



**Fibreoptic Endoscopic Evaluation of Swallowing (FEES):  
The role of speech and language therapy**

**POLICY STATEMENT  
2005**

**Royal College of Speech and Language Therapists**

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## Acknowledgements

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## Position Statement

Fibreoptic Endoscopic Evaluation of Swallowing (FEES) is defined as an endoscopic examination of the pharyngeal stage of swallowing<sup>2</sup>. It incorporates assessment of laryngopharyngeal anatomy and physiology as it relates to swallowing, assessment of swallowing function (saliva and food/fluid) and intervention to determine which postural and behavioural strategies facilitate safer and more efficient swallowing<sup>3</sup>. An extended form of FEES (known as FEESST) incorporates sensory testing<sup>4</sup>.

It is the position of the RCSLT that FEES and FEESST are within the scope of practice for speech and language therapists (SLTs) with expertise and specialist training in dysphagia. Medical practitioners are the only professionals qualified to make medical diagnoses related to the identification of laryngopharyngeal pathology.

Speech and language therapy practice is dynamic and changing. The scope of practice grows along with advances in technology enabling practitioners to provide new and improved methods of diagnosis and treatment. By identifying FEES as within the scope of practice, it is not intended to limit any other new or emerging areas from being developed by SLTs to help improve diagnosis and treatment of swallowing disorders. If practitioners choose to perform these procedures, indicators should be developed to continuously monitor and evaluate the appropriateness, efficacy and safety of the procedure conducted.

This policy statement encompasses the following: background and evidence base, training and competencies, procedure and interpretation, health and safety, types of clinics, medico-legal aspects, patient populations and documentation.

# Section 1

## Context

### 1.1 Background and evidence base

FEES is a recognised tool for the assessment and management of swallowing disorders. It has been carried out by SLTs since its inception and description by Susan E. Langmore in 1988<sup>2</sup>. It involves the trans-nasal insertion of a fibreoptic nasendoscope to the level of the oropharynx/hypopharynx to evaluate laryngopharyngeal physiology, management of secretions and the ability to swallow food and fluids. See Appendix A for FEES protocol.

Since its initial description, FEES has been extended to incorporate testing of laryngopharyngeal sensory function in a technique described as FEESST<sup>4</sup>. FEES and FEESST are safe procedures with a low incidence of complications<sup>3,5,6</sup>. A number of studies have reported that FEES is a valid tool for detecting aspiration, penetration and pharyngeal residue when compared with videofluoroscopy<sup>7-10</sup>. Other studies have commented on the benefits of using FEES across the spectrum of clinical populations including paediatrics<sup>11</sup>, stroke<sup>12</sup>, traumatic brain injury<sup>13</sup>, critical care<sup>14</sup> and head and neck cancer<sup>15</sup>. The practical and clinical applications of FEES will be discussed in section 1.3.

### 1.2 Purpose of FEES

The indications for FEES<sup>3,16</sup> may include:

- Assessing secretion management
- Assessing patients at high risk of aspiration (unsafe for food trials)
- Visualising laryngopharyngeal structures
- Assessing laryngopharyngeal sensation
- Biofeedback/teaching
- Assessing swallow fatigue over time
- Assessing swallowing of specific foods
- Assessing patients who cannot undergo videofluoroscopy (due to immobility, equipment or medical instability)
- Repeated assessment

The outcomes of endoscopic assessment may include evaluation of:

- Anatomy and swallow physiology
- Secretion management and sensation
- Airway protection as it relates to swallowing function
- Swallowing of foods/fluids
- Postures, strategies and manoeuvres
- Optimum delivery of bolus consistencies and sizes
- Therapeutic techniques

(See Appendix E for a detailed description of the indications for FEES)



### **1.3 Suitability of FEES - patient groups and contraindications**

FEES may be suitable for use with the following dysphagic patient groups:

- Acquired neurological disorders
- Traumatic brain injury
- Benign and malignant head and neck disorders
- Critical care, ie tracheostomised and/or ventilated patients
- Respiratory disorders
- Spinally injured
- Neuro-degenerative
- Burns and trauma
- Paediatrics (with appropriately-sized nasendoscope)
- General medical
- Older people

This is a non-exhaustive list.

Caution should be exercised with the following patient groups as the nature of their disorder may preclude safe assessment. The suitability and safety of FEES should be assessed on an individual basis by the medical team. We recommend that an ENT surgeon is present when FEES is performed on high-risk patients, including those with the following:

- Severe movement disorders and/or severe agitation
- Base of skull/facial fracture
- Recent history of severe/life-threatening epistaxis
- Sino-nasal and anterior skull base tumours/surgery
- Nasopharyngeal stenosis

This is a non-exhaustive list.

### **1.4 Multidisciplinary context**

FEES should be performed as part of a multidisciplinary team approach to dysphagia management.

The physician or surgeon overseeing the patient's care should be made aware of the intention to perform FEES. A medical practitioner may or may not be present during the FEES examination. However, a doctor must be within easy access (ie, in the same building) to provide emergency medical backup should a complication arise (see section 3.2 Health and safety).

### **1.5 Instrumental evaluation**

As with any instrumental evaluation, FEES should be preceded by clinical swallowing evaluation<sup>18</sup>.

FEES should not be considered as a replacement for videofluoroscopy or any other instrumental dysphagia evaluation. The choice of instrumental assessment is guided by clinical indications (see Appendix E)

### **1.6 Local arrangements**

The SLT must ensure that approval has been given by their employer and manager with recognition of competence to perform the procedure (see section 2.0). Use of FEES must be written into the SLT's individual job description. It is good practice to inform other colleagues (ie, referrers) as appropriate.

In order to obtain full clinical privileges to perform independent FEES evaluation of swallowing, the SLT clinician must have undertaken the appropriate training as set out in this policy statement.

### **1.7 Facilities and equipment**

FEES is a safe assessment of swallowing when performed with the appropriate equipment. It is essential the procedure is recorded (either on video or digitally) and documented. A good-quality, undamaged nasendoscope, light source, camera and monitor will enable clear and effective illumination of the laryngopharynx. (See Appendix B)

### **1.8 Different types of FEES clinics**

FEES is a portable and accessible assessment tool. It can be performed in a range of settings, including at bedside, on the intensive care unit or in a designated clinic room. The philosophy of effective team working should be applied to any FEES clinic. A minimum of two persons is required to safely and effectively carry out the procedure. This may involve two SLTs (where one acts as the endoscopist) or one SLT and a doctor competent in nasendoscopy. There are three levels of clinical FEES practice (see section 2.4)

## Section 2

### Training and competency

#### 2.1 Knowledge and skills

Underpinning the knowledge and skills required to perform FEES, the SLT will have achieved core competencies in dysphagia. Each SLT is ethically responsible for achieving the appropriate level of training to perform FEES competently.

The core pre-requisite knowledge and skills are:

- Postgraduate dysphagia training
- Advanced clinical knowledge of normal and disordered anatomy and physiology for respiration, airway protection and swallowing
- Current and regularly updated skills and knowledge in dysphagia
- Knowledge of swallowing changes over the lifespan
- Experience in working independently with dysphagic patients (minimum three years)
- Competence in performing videofluoroscopy independently
- Knowledge of the indications and contraindications for different instrumental evaluations
- Relevant local and national dysphagia policies eg, *RCSLT Invasive Procedures Guidelines*<sup>19</sup> and this document

#### Knowledge required to perform FEES

The SLT clinician will be able to:

- Select appropriate patients for FEES
- Recognise anatomical landmarks as viewed endoscopically
- Recognise altered anatomy as it relates to swallowing function
- Identify elements of a comprehensive FEES examination
- Detect and interpret abnormal swallowing findings
- Apply appropriate treatment interventions - postural changes, manoeuvres, consistency selection and modification
- Make appropriate recommendations to guide management
- Make appropriate referral or request second opinion eg, ENT, neurology, other expert SLT
- Request a second opinion from ENT when anatomical variation is suspected
- Know when and how to re-evaluate the swallow
- Use FEES as a biofeedback and teaching tool

#### Skills required to perform FEES

The Endoscopist (SLT) will:



- Operate, maintain and disinfect the equipment needed for an endoscopic evaluation
- Insert and manipulate the scope in a manner which minimises discomfort and risk and optimises the view of the laryngopharynx
- Apply topical anaesthetic/decongestant if required (see section 3.2)

The Assessing Clinician (SLT) will:

- Direct the patient through appropriate tasks and manoeuvres as required for a complete and comprehensive examination
- Direct the endoscopist to achieve the desired view
- Monitor the patient's comfort and safety and know when to discontinue the procedure
- Interpret, communicate and document findings

## **2.2 Methods of acquisition of the knowledge and skills**

Competence in FEES may be acquired using a range of learning methods including:

- Didactic/classroom teaching (internal/external)
- Attendance at established FEES clinics
- Mentoring
- Practice interpretation of previously-recorded FEES examinations
- Supervised clinical experience, including observation and guided practice
- Peer review of clinical practice
- Attendance at relevant conferences
- Journal clubs (critical appraisal of the literature)

## **2.3 Training structure**

These are the minimum suggested requirements suggested for the SLT to achieve competency. It is the responsibility of the individual therapist to recognise when further training is required.

### **Endoscopy performed by an SLT**

- Observation of a minimum of two nasendoscopy procedures performed by a competent endoscopist
- Successfully passing the nasendoscope through the nose and into the pharynx a minimum of five times under the direct supervision of a competent endoscopist
- Successfully performing nasendoscopy for the purposes of FEES under direct supervision 20 times.
- Cleaning and disinfecting the scope according to local infection control policies
- Administering topical anaesthetic/nasal decongestant when required

## **The Assessing Clinician (SLT)**

- Observation of five FEES examinations carried out by an SLT competent in FEES
- Rating of five previously recorded FEES with a competent SLT. This will take the form of the trainee and the FEES-competent SLT observing the FEES recordings together and the trainee completing a rating scale under direct supervision.
- Carrying out and interpreting 20 FEES procedures under the direct supervision of a SLT competent in FEES.

Training schedules must be logged and signed by the supervising endoscopist and the trainee.

We acknowledge that at the time of writing there are few formal FEES training opportunities and established FEES clinics nationally. The RCSLT is developing an implementation plan to address this gap.

### **2.4 Levels of competency and expertise**

#### **Level one**

- Has pre-requisite knowledge and skills (see section 2.1)
- Undergoing training to become competent in FEES as defined in section 2.3

#### **Level two**

- Competent to perform FEES independently ie, without direct supervision
- Has the knowledge and skills and has achieved competencies outlined in sections 2.1 and 2.3
- Performs FEES on complex cases with supervision

#### **Level three**

- Expert practitioner
- Can supervise and train others
- Can perform FEES assessment and endoscopy for FEES simultaneously (in unusual circumstances only and always with the assistance of a nurse or other health care practitioner)
- Has performed a minimum of 150 FEES assessments ie, carrying out and interpreting the procedure.
- Performs FEES on complex cases independently

### **2.5 Verification of competency attained**

An otolaryngologist or level three SLT FEES practitioner will verify endoscopy competence. An experienced FEES clinician will verify FEES competencies (experienced level two or level three). A competency checklist is attached (Appendix F).

## **2.6 Maintenance of competencies**

SLTs are responsible for maintaining their competency to perform FEES and to ensure the pre-requisites for practice are in place. It is anticipated this would involve regular practice (at least monthly). There is a professional responsibility to review competencies for FEES if the procedure has not been performed for one year.

## Section 3

### Procedural issues

#### 3.1 The FEES procedure

FEES involves passing a nasendoscope transnasally to evaluate laryngopharyngeal anatomy and physiology related to swallowing, laryngopharyngeal sensation, management of secretions, trials of foods/fluids and therapeutic techniques. See Appendix A for FEES protocol.

FEESST is Fibreoptic Endoscopic Evaluation of Swallowing with Sensory Testing. FEESST uses a nasendoscope with an internal port or an endosheath through which air pulses are delivered. The air pulses of increasing intensity are administered to the mucosal surfaces innervated by the superior laryngeal nerve to elicit the laryngeal adductor reflex and thus determine sensory thresholds<sup>4</sup>.

#### 3.2 Health and safety

##### First aid and resuscitation

Due to the invasive nature of the procedure, SLTs involved in performing FEES must undergo regular training in first aid and cardio pulmonary resuscitation. Resuscitation equipment and trained personnel (medical, nursing and physiotherapy) should be within easy access ie, within the building and readily contactable.

##### Anaesthesia and decongestants

Topical anaesthesia and/or nasal decongestant may be applied to the nasal passages if required. Since May 2004 SLTs are entitled to administer topical anaesthesia under patient group directions (document MLX 294)<sup>20,21</sup>.

FEES can be performed safely without anaesthesia. Routine use is not recommended as sensory aspects of the swallow may be compromised. SLTs should be aware of possible contraindications and adverse reactions. Lubrication gel applied to the nasendoscope should be sufficient to minimise discomfort in most cases.

##### Environments

FEES should be performed in an appropriate setting with ready access to a doctor (see 1.4). This may be on a hospital ward, rehabilitation unit, on the intensive care unit or in a designated clinic. If FEES is to be used in other environments, such as nursing homes, SLTs must be a level three FEES practitioner (see 2.4), a doctor must be available for immediate assistance (and therefore within the same building), the nursing home and patient's GP must have given consent and appropriate equipment must be used (see 1.9).

##### Food colouring



Drops of blue or green food dye may be added to secretions, food and liquids to facilitate visualisation. The amount used should be kept to a minimum as it can colour urine and skin. Bottles of dye should be stored appropriately and once opened should be disposed of after three months. The use of methylene blue is not recommended, as it is a biologically active product.

### **Disposal of food and fluid materials**

All used trial foods and fluids should be disposed of appropriately at the end of each FEES procedure. Any used items of consumable equipment (see Appendix B) should be disposed of as clinical waste or as advised by local infection control policy.

### **Decontamination and infection control**

Disease transmission is possible via contact of equipment contaminated by saliva, blood and other bodily fluids. Sterilisation and storage of equipment should adhere to universal, local and institutional infection control policies to avoid cross infection<sup>22</sup>. Patients with known infection status should be seen at the end of the FEES clinic if possible and the nature of the infection documented. Appropriate precautions should be taken if substances hazardous to health are to be used for equipment decontamination.

### **Adverse effects of the procedure**

FEES is a safe 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-moderate<sup>5</sup>.
- Epistaxis. Nose bleeds are unusual despite FEES being performed on many stroke patients placed on anticoagulant medications<sup>3</sup>.
- 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 result in further risk<sup>3</sup>.
- Allergy to topical anaesthesia (see “Anaesthesia and decongestants”)
- Laryngospasm. This is unlikely if the nasendoscope is adequately distanced from the larynx<sup>16</sup>.

A survey carried out in 1995 by Langmore on the safety of FEES found that of 6000 procedures there were only 27 cases of the adverse effects noted above. Clinicians aborted 3.7% of FEES procedures, compared with 3.1% of videofluoroscopy procedures, due to side effects such as gagging or aspiration requiring suctioning<sup>3</sup>. As with any swallowing investigation, the examination should be performed with care to avoid the risk of complications arising from severe aspiration.

## **Indications and contraindications**

When considering performing a FEES examination, the SLT must always consider possible contraindications. These are outlined in section 1.3. The rationale for performing FEES on an at-risk patient must be clearly outlined in patient records. Failure to demonstrate and record careful consideration of the risks and benefits to the patient in these circumstances prior to proceeding with the FEES examination may constitute a breach of acceptable professional conduct (see Section 4, Medico-legal Issues).

## **Incident reporting**

If an adverse reaction occurs during a FEES procedure, appropriate medical assistance should be sought and local incident reporting procedures followed.

### **3.3. Patient and carer information**

Patients should be fully informed about the FEES procedure prior to the examination. Information should be given in verbal and written form and include the nature, purpose and likely effects of the examination (see Appendix C).

### **3.4 Consent**

The NHS Good Practice in Consent<sup>23</sup> states the need for changes in the way patients are consented. It recognises that consent procedures vary between trusts. Prior to FEES being carried out, the SLT must explain the procedure and provide written information where appropriate to the patient and/or their carer (see appendix). FEES is an invasive procedure that carries some risks and hence written consent must be obtained prior to the examination. Where the patient is unable to give or withhold consent eg, when affected by dementia, it may still be appropriate to proceed with treatment with the consent of carers<sup>18</sup>. SLTs should document consent in the patient's records. Consent policy must be reviewed regularly and adapted in light of regular local and national changes.

### **3.5 Documentation**

#### **Archives**

The FEES should always be recorded either on video or digitally and videotapes and storage media labelled and securely stored. Failure to do so may result in a breach of confidentiality. Documentation should be kept according to the RCSLT professional guidelines.

#### **Rating**

Structured rating formats are available<sup>3</sup>.

See Appendix D for sample airway protection, penetration-aspiration and secretion rating scales.

### **3.6 Audit**

FEES services should be audited on a regular basis within a local clinical governance framework.

## **Section 4**

### **Medico-legal issues**

This document is the RCSLT's official statement of professional practice for SLTs using FEES. Adherence to its content and recommendations are the professional responsibility of the individual therapist. Proof and assurance of this adherence will ensure professional indemnity through the individual's employer. Failure to comply with the details of this policy statement may amount to a breach of acceptable professional conduct.

The RCSLT acknowledges that professional practice continues to grow and develop. Members should contact the RCSLT for advice about any areas of practice development relevant to this policy.

### **Policy Review**

A review of this policy in two years (2007) is advised.



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## Appendices

<b>Appendix A</b>	FEES Protocol
<b>Appendix B</b>	Equipment and consumables
<b>Appendix C</b>	Patient information
<b>Appendix D</b>	Rating scales
<b>Appendix E</b>	Indications for selecting FEES or videofluoroscopy
<b>Appendix F</b>	Competency development programme

## Appendix A

### The FEES Protocol

#### Part A. Laryngopharyngeal structures- anatomy and physiology

##### 1. Velopharyngeal competency

Tasks: oral and nasal sounds, sentences and dry swallow

##### 2. Pharynx (including base of tongue, epiglottis, valleculae, posterior and lateral pharyngeal walls, lateral channels, pyriform sinuses)

Tasks:

- Puff cheeks: dilate pharynx and open pyriform sinuses
- post-vocalic “l”, - retract base of tongue
- strained high pitch on /i/- contraction of lateral pharyngeal walls
- observe general movement during speech and dry swallowing

##### 3. Larynx and supraglottis (including aryepiglottic folds, interarytenoid space, false and true vocal folds, subglottic shelf, proximal trachea)

Tasks:

Observe laryngeal movements during:

- breathing at rest
- gentle and effortful breath hold
- adduction on cough/throat clearing
- sniff
- phonation on /i/

##### 4. Laryngopharyngeal Sensation

Tasks:

Observe briskness and adequacy of glottic closure in response to light touch of the scope against the posterior pharyngeal wall and the right and left aryepiglottic folds

During the FEES observe response to secretions, residue, penetration and aspiration (see Appendix)

##### 5. Secretions

Use secretion-rating scale (see attached). If the patient is unable to manage secretions introduce one drop of blue dye onto the tongue and observe dry swallowing.

#### Part B. Bolus Presentation

If safe, proceed with trials of the following:

Ice chips, thin liquids, thick liquids, puree, soft food, solid food, mixed consistencies. The order may vary.



Observe;

- amount and location of premature spillage
- pharyngeal residue
- penetration and aspiration

Other aspects to be considered:

- timing of swallowing
- overall strength of the swallow and whiteout
- evidence of fatigue
- timing of glottic closure and reopening
- regurgitation from proximal oesophagus to hypopharynx

### **Part C. Therapeutic Interventions**

Evaluate the effectiveness of postural modifications, manoeuvres, bolus modifications, compensatory strategies and sensory enhancement on the swallow.

### **Part D. Biofeedback**

Encourage patient to observe the examination to facilitate understanding of swallowing, recommendations, and to learn therapeutic interventions.

## **Appendix B**

### **Equipment and consumables**

#### **Equipment**

- Fibreoptic nasendoscope (with/without air port)
- Light source
- Chip camera
- Recording source (VCR or digital)
- Monitor
- Microphone
- Trolley
- Printer
- Air pulse generator (optional)

#### **Consumables**

- Food and fluid
- Ice chips
- Food dye (green or blue)
- Gauze
- Cotton buds
- Spoons
- Straws
- Cups
- Aprons
- Lubrication gel
- Alcohol wipes
- Defog spray
- Sterilising equipment
- Endosheaths (optional)
- Topical anaesthetic/decongestant

## **Appendix C Patient information**

### **Fibreoptic Endoscopic Evaluation of Swallowing (FEES) Clinic**

#### **SAMPLE INFORMATION SHEET**

You have been given an appointment to attend the FEES Swallowing Clinic. This is a clinic coordinated by *name*, speech and language therapist.

This information sheet provides you with information about the clinic.

#### **1. Why have I been given an appointment in the clinic?**

You have been referred to the speech and language therapy department because you have had some difficulties swallowing or have had surgery or other treatment that may affect your swallowing.

The speech and language therapists are trained to assess and treat swallowing problems and some throat symptoms. The FEES clinic enables examination of your swallowing and your throat in detail. It also enables us to try different foods and/or different techniques if appropriate to help you swallow more effectively.

#### **2. What happens in the clinic?**

A team of two people will carry out the examination. This team will be made up of one speech and language therapist and one ear, nose and throat surgeon, or two speech and language therapists. Other members of staff, such as a nurse or a dietitian may also be present.

You will be asked to sit in a comfortable chair. A small, flexible telescope will be placed into one nostril and moved through your nose. When the end of the telescope is positioned just beyond the back of the nose, a clear view of your throat is obtained.

You will be able to see your throat (including your vocal cords) on the television monitor if you choose. You may be given some food and liquid to swallow. This is dyed with a small amount of blue or green food dye to enable a clearer view of your swallowing. Your swallowing will be observed and videotaped to enable analysis at a later time.

#### **3 Is the procedure safe? Is it uncomfortable?**

The procedure is extremely safe with a low risk of complications or side affects. At times the passing of the telescope through the nose causes mild to moderate discomfort. Once the telescope is positioned above the throat, any discomfort usually recedes. Discomfort can be reduced by the application of local anaesthetic to the nose prior to the telescope being passed, although this is rarely necessary.

If anaesthesia is required, a small cotton swab soaked in anaesthetic will be placed into the front part of the nose and removed before the examination. A spray is not used as this may numb your throat and alter your swallowing.



#### **4. When will I know the results?**

You will be given some basic feedback and advice immediately after the procedure. However, detailed results will only be available when a report has been written. The report will be sent to the doctor who referred you to the clinic and a copy will be placed in your medical notes.

#### **5. How long will it take?**

The procedure takes approximately 10 to 15 minutes. Although the clinic generally runs on time, you may experience a small delay. Your patience in these circumstances would be appreciated.

#### **6. Can I eat before my appointment?**

Unless you have been advised otherwise, you can eat and drink as normal before your appointment. If you are currently feeding through a tube, you can take your feeds as normal up until your appointment time.

#### **7. What happens afterwards?**

You can return to the ward or go home immediately after the appointment. If appropriate, a follow-up appointment will be made for you to see the speech and language therapist to discuss the results in more detail, and to give you further advice and exercises to make your swallowing easier. You may also have an appointment made for you to attend the outpatients department.

If you have any questions about the clinic or the procedure, call *name*, speech and language therapist on *telephone number* (Monday to Friday).

## Appendix D Sample Rating Scales

### Patterns of tight breath holding

1. Breath holding not achieved
2. Transient breath holding with glottis open
3. Sustained breath holding with glottis open
4. Transient true vocal fold closure
5. Sustained true vocal fold closure
6. Transient true and ventricular fold closure
7. Sustained true and ventricular fold closure

### Secretion severity rating scale

- 0 Normal rating: Ranges from no visible secretions anywhere in the hypopharynx, to some transient secretions visible in the valleculae and pyriform sinuses. These secretions are not bilateral or deeply pooled.
- 1 Any secretions evident upon entry or following a dry swallow in the protective structures surrounding the laryngeal vestibule that are bilaterally represented or deeply pooled. This rating would include cases in which there is a transition in the accumulation of secretions during observation segment.
- 2 Any secretions that change from “1” rating to a “3” rating during the observation period.
- 3 Most severe rating. Any secretions seen in the area defined as laryngeal vestibule. Pulmonary secretions are included if they are not cleared by swallowing or coughing by the close of the segment.

Murray (1999) “The Laryngoscopic Evaluation of Swallowing or FEES”. In Manual of Dysphagia Assessment in Adults, 1999, Singular Publishing Company.

### Penetration-Aspiration Scale

- 1 Material does not enter the airway
- 2 Material enters the airway, remains above the vocal folds, and is ejected from the airway
- 3 Material enters the airway, remains above the vocal folds, and is not ejected from the airway
- 4 Material enters the airway, contacts the vocal folds, and is ejected from the airway
- 5 Material enters the airway, contacts the vocal folds, and is not ejected from the airway
- 6 Material enters the airway, passes below the vocal folds, and is ejected into the larynx or out of the airway
- 7 Material enters the airway, passes below the vocal folds, and is not ejected from the trachea despite effort
- 8 Material enters the airway, passes below the vocal folds, and no effort is made to eject

Rosenbek, J et al, (1996) *Dysphagia* Vol 11: 93-98.





## Appendix E

### Indications for selecting FEES or videofluoroscopy (VF)

Indications for VF	Indications for FEES
<ul style="list-style-type: none"><li>▪ Evaluation of all stages of swallowing</li><li>▪ Evaluation of swallowing physiology: base of tongue retraction velopharyngeal closure; hyolaryngeal elevation; pharyngeal contraction upper oesophageal sphincter opening</li><li>▪ Measuring impact of therapeutic interventions on swallowing physiology</li><li>▪ Upper oesophageal dysfunction suspected</li><li>▪ Suspected aspiration during the swallow</li></ul>	<ul style="list-style-type: none"><li>▪ Very high risk of aspiration</li><li>▪ Evaluation of secretion management</li><li>▪ Visualisation of altered laryngopharyngeal anatomy/physiology</li><li>▪ Impairment of laryngopharyngeal sensation is suspected</li><li>▪ Extended examination to measure effects of fatigue or therapeutic interventions</li><li>▪ Evaluation with real food and fluid</li><li>▪ Biofeedback</li><li>▪ Need for repeated swallowing examinations</li><li>▪ Patient medically unfit for VF</li><li>▪ Patient unable/unsafe to sit</li></ul>

(Bastian, 1991<sup>17</sup>; Kidder, Langmore et al. 1994<sup>16</sup>; Langmore, 2001<sup>3</sup>)

## Appendix F

### Competency development programme for the assessing clinician (SLT)

Topic	Date Achieved	Signed by
Read RCSLT Position Statement on FEES		
Obtain “core pre-requisite knowledge and skills” (RCSLT Position Statement FEES)		
Obtain “knowledge required to perform FEES” (RCSLT Position Statement FEES)		
Demonstrate knowledge of local policies/guidelines on consent and health and safety		
Observe five FEES examinations		
Rate five previously-recorded FEES with supervisor		
Successfully perform and interpret 20 FEES under direct supervision (see additional competency assessment list)		

### Competency development programme for the endoscopist (SLT)

Topic	Date Achieved	Signed by
Read RCSLT Position Statement on FEES		
Obtain “core pre-requisite knowledge and skills” (RCSLT Position Statement FEES)		
Obtain “knowledge required to perform FEES” (RCSLT Position Statement FEES)		
Demonstrate knowledge of local policies / guidelines on consent and health and safety		
Observe two nasendoscopy procedures		
Successfully pass nasendoscopy five times under direct supervision		
Successfully perform nasendoscopy for FEES under direct supervision 20 times		
Clean and disinfect nasendoscope according to local infection control policies		
Administer topical anaesthetic/nasal decongestant when required		