Management of Patients with Stroke

III: Identification and Management of Dysphagia

A National Clinical Guideline recommended for use in Scotland by the Scottish Intercollegiate Guidelines Network

Pilot Edition November 1997

SIGN

Getting validated guidelines into local practice
The definitions of the types of evidence and the grading of recommendations used in this guideline originate from the US Agency for Health Care Policy and Research and are set out in the following tables.

<table>
<thead>
<tr>
<th>Level</th>
<th>Type of Evidence</th>
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<tbody>
<tr>
<td>Ia</td>
<td>Evidence obtained from meta-analysis of randomised controlled trials.</td>
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<tr>
<td>Ib</td>
<td>Evidence obtained from at least one randomised controlled trial.</td>
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<tr>
<td>IIa</td>
<td>Evidence obtained from at least one well-designed controlled study without randomisation.</td>
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<tr>
<td>IIb</td>
<td>Evidence obtained from at least one other type of well-designed quasi-experimental study.</td>
</tr>
<tr>
<td>III</td>
<td>Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case studies.</td>
</tr>
<tr>
<td>IV</td>
<td>Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities.</td>
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<table>
<thead>
<tr>
<th>Grade</th>
<th>Recommendation</th>
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</table>
| A     | Required - at least one randomised controlled trial as part of the body of literature of overall good quality and consistency addressing specific recommendation.  
       | *(Evidence levels Ia, Ib)*                                                                               |
| B     | Required - availability of well conducted clinical studies but no randomised clinical trials on the topic of recommendation.  
       | *(Evidence levels IIa, IIb, III)*                                                                      |
| C     | Required - evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities.  
       | *(Evidence level IV)*                                                                                 |
|       | Indicates absence of directly applicable clinical studies of good quality.                              |

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Notes for users of the guideline

Development of local protocols
It is expected that this guideline will be adopted after local discussion involving clinical staff and provider and purchaser management. The Area Clinical Audit Committee should be fully involved. Local arrangements will then be made for the derivation of specific local protocols to implement the national guideline, reflecting local circumstances in individual hospitals, units and practices. The staff groups who require to be involved in the development of and be familiar with protocols derived from this guideline are set out in Annex 1.

Following the development of local protocols, providers should consider how best to implement and audit their use. Local protocols should be discussed with and circulated to all relevant staff, and displayed in all areas where acute strokes are managed.

SIGN consents to the copying of this guideline for the purpose of producing local protocols for use in Scotland.

Statement of intent
This report is not intended to be construed or to serve as a standard of medical care. Standards of medical care are determined on the basis of all clinical data available for an individual case and are subject to change as scientific knowledge and technology advance and patterns evolve.

These parameters of practice should be considered guidelines only. Adherence to them will not ensure a successful outcome in every case, nor should they be construed as including all proper methods of care or excluding other acceptable methods of care aimed at the same results. The ultimate judgement regarding a particular clinical procedure or treatment plan must be made by the doctor in light of the clinical data presented by the patient and the diagnostic and treatment options available.

Significant departures from the national guideline as expressed in the local protocol should be fully documented and the reasons for the differences explained. Significant departures from the local protocol should be fully documented in the patient’s case notes at the time the relevant decision is taken.

A background paper on the legal implications of guidelines, prepared by Dr Pamela Abernethy of Simpson & Marwick W.S., is available from the SIGN Secretariat.

Review of the guideline
This guideline was issued in November 1997 and will be reviewed in 1999. Comments are invited to assist the review process. All correspondence and requests for background information regarding the guideline should be sent to:

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Summary of Recommendations

**Screening**

All stroke patients should be screened before being given food or drink, to identify those patients with dysphagia. The screening test is normally a simple **water swallow test**, but checks should also be made on:

- conscious level
- presence of any **laryngeal abnormality**
  - (e.g. voice quality, laryngeal elevation, quality of cough).

In non-acute admission, observations should also be made on:

- respiratory status
- nutritional status.

**Abnormalities** on any of the above observations should lead to **immediate referral to a speech and language therapist** or other suitably trained person for a more detailed functional examination of swallow.

**Assessment**

Patients presenting with features indicating dysphagia and/or risk of aspiration should receive **further clinical evaluation**, which may include:

- trial food of differing consistency
- postural techniques
- swallowing manoeuvres
- sensory stimulation.

This assessment should be initiated within two working days of referral.

**Videofluoroscopy examination** should be considered where, following bedside examination:

- the risk/benefit ratio of proceeding with trial food is poor
- there is doubt about future management options
- there is need for clarification of diagnosis.

**Management**

A documented **rehabilitation plan** or modified feeding and nutrition plan should be agreed with and communicated to the patient, carers, and all members of the health care team.
Documentation of each patient’s **nutritional status and fluid intake** should be routinely entered in the patient’s medical and nursing notes, and regularly updated.

**Gastrostomy** is recommended for appropriate patients requiring enteral feeding, particularly in those where it is required for longer than four weeks, but may be considered earlier in some patients.

**Awareness and Education**

Speech and language therapists with responsibility for dysphagia assessment should have **suitable training.**

**All personnel in contact with stroke patients** in the acute stage should be made aware of the possibility of dysphagia as a complication of stroke.

**Nurses and junior doctors should receive appropriate education** in the recognition of dysphagia, the prognosis and possible complications.

**Catering staff** should receive information and training to enable them to appreciate the importance of specific food consistencies and to produce these with the required nutritional supplement.
1 Introduction

1.1 Definition
Dysphagia, a difficulty in swallowing, can be caused by many pathologies, including stroke disease. In stroke it is characterised by difficulty in safely moving a bolus from the mouth to the stomach without aspiration and may also involve difficulty in oral preparation for the swallow, e.g. chewing, tongue movement.

1.2 Incidence
A prospective study identified dysphagia in 45% of stroke admissions to hospital. A prospective study identified dysphagia in 45% of stroke admissions to hospital. Subsequent studies found similar high rates.

1.3 Dysphagia and stroke severity
The severity of stroke and severity of dysphagia are associated, although the presence of dysphagia may be an indicator of poor prognosis independently of its association with severity of stroke.

1.4 Duration of dysphagia after stroke
Dysphagia after stroke is transient in many patients. The fact that many patients recover within a few weeks is a further complicating factor in attempts to determine the prevalence of dysphagia. Reported recovery rates within the first few weeks vary from 43% to 86%. The different rates may depend on the techniques used for assessment: studies using videofluoroscopy report lower rates of recovery and longer periods of time for recovery than those using bedside evaluation.

1.5 Consequences of dysphagia
Post-stroke dysphagia is a complication associated with excess morbidity and increased mortality rates compared to strokes without dysphagia. Up to one third of alert stroke patients with dysphagia are reported to die within the first six months following stroke, compared with fewer than 10% of other alert stroke patients. Dysphagia is associated with risk of:

- Aspiration and associated bronchopulmonary infections
  The most immediate danger to health in most patients is aspiration of material into the tracheobronchial tree, which presents a triple threat of chemical pneumonitis, bacterial pneumonia, and mechanical obstruction of the airways. Dysphagia in acute stroke has been shown to be associated with an increased risk of chest infection independent of aspiration.
• Fluid depletion and undernutrition
  Dysphagia has been demonstrated to relate to decline in nutritional status in the first month following a stroke.\textsuperscript{7} There is also a risk of fluid depletion.\textsuperscript{2}

1.6 Aim of the guideline
The aim of this national guideline is to assist practitioners in reducing the morbidity associated with dysphagia by early detection of swallowing disorders in stroke patients and application of appropriate methods to support food and fluid intake.

This guideline is the third in the series of four SIGN guidelines to assist in the delivery of good quality clinical care following an acute stroke:

<table>
<thead>
<tr>
<th>I</th>
<th>Assessment, investigation, immediate management, and secondary prevention</th>
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<tr>
<td>II</td>
<td>Management of carotid stenosis and carotid endarterectomy</td>
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<tr>
<td>III</td>
<td>Identification and management of dysphagia</td>
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<tr>
<td>IV</td>
<td>Prevention and management of complications, rehabilitation and discharge planning.</td>
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</table>
Thorough clinical examination will identify dysphagia but may fail to identify 40-58% of patients aspirating. Various studies have looked at aspiration and sought clinical correlates in order to devise an effective screening test and a variety of bedside screening tests have been developed to detect those at risk from aspiration. These usually involve clinical observation and a water swallow test.

2.1 Clinical predictors of aspiration
The presence of abnormal laryngeal features in particular indicates the possibility of aspiration. Abnormal chest features and poor conscious level should raise further suspicion.

Some clinical features are good predictors of the presence or absence of aspiration, whereas others described in the literature are only useful in combination to increase reliability:

<table>
<thead>
<tr>
<th>Good predictors in isolation</th>
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<tbody>
<tr>
<td>Wet phonation (wet hoarse voice quality)</td>
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<tr>
<td>Reduced laryngeal elevation</td>
</tr>
<tr>
<td>Abnormal voluntary cough</td>
</tr>
<tr>
<td>Abnormal voice quality</td>
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<tr>
<td>Poor conscious level</td>
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<td>Older age</td>
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<table>
<thead>
<tr>
<th>Poor predictors in isolation</th>
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<tbody>
<tr>
<td>Gag reflex</td>
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<tr>
<td>Communication disorders</td>
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<tr>
<td>Cough</td>
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<tr>
<td>Chest x-ray</td>
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<tr>
<td>Good conscious level</td>
</tr>
<tr>
<td>Younger age</td>
</tr>
<tr>
<td>Site of lesion</td>
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<tr>
<td>Lack of subjective complaint</td>
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</table>
Combined features for more reliable prediction

**Low probability of aspiration:**
- Good conscious level, normal voluntary cough and absence of cough on a 5ml teaspoon of water\(^{24, 25}\)

**High probability of aspiration:**
- Wet hoarse voice quality and impaired pharyngeal gag reflex\(^{22}\)
- Reduced pharyngeal sensation and coughing or change in voice quality on drinking 50ml of water\(^6\)
- Bilateral stroke, abnormal gag reflex and impaired voluntary cough\(^{23}\)

### 2.2 Water swallow tests
Several simple tests for swallowing difficulties consist of the patient drinking a specified volume of water with the examiner observing for choking, coughing, change in voice quality or effortful swallowing. Amounts of 10ml; 50ml in 5ml aliquots; and 90ml presented in a cup to be drunk without interruption have all been used.\(^{6, 26, 27}\) Most of these methods detect dysphagia in the majority of cases but can fail to identify aspiration in between 20-40% of patients on validation by videofluoroscopy.

The **Timed Water Swallow Test** consists of the patient drinking 150ml water from a glass as quickly as possible, with the examiner recording time taken and number of swallows. From this data the speed of swallowing and average volume per swallow can be calculated. The timed water swallow test is reported to have a predictive sensitivity of 96% in identifying the presence of a swallowing disorder but this has not been validated by videofluoroscopy.\(^{28}\)

A combination of clinical observation and a water swallow test has been used in protocols within hospitals\(^{25, 29}\) and it is anticipated that these tests could be carried out by medical or nursing staff whether the patient is in hospital or not.

### 2.3 Recommendations

*All stroke patients should be screened before being given food or drink to identify those with dysphagia*

*Grade B, level III*
The screening test is normally a simple water swallow test, but checks should also be made on:

- conscious level
- presence of any laryngeal abnormality (e.g. voice quality, quality of cough or in laryngeal elevation)
- respiratory status
- nutritional status

The presence of abnormalities on any of the above observations should lead to immediate referral to a speech and language therapist or other suitably trained personnel for a more detailed functional examination.

These observations should be written into the protocol for admission notes.

Grade B, level III
3 Assessment

Assessment of oropharyngeal swallow by trained personnel (currently Speech and Language Therapists) can define the physiological dysfunction or identify the need for further investigation, which may be instrumental; test the effectiveness of selected treatments; and enable development of a treatment plan, taking into consideration the medical diagnosis and history.30-32

3.1 Clinical assessment

A full clinical examination is vital in order to obtain information on the following:14

- History of the patient’s disorder
- Nutritional and respiratory status
- Oral anatomy
- Labial and lingual control
- Palatal function
- Laryngeal control
- Best position of food in the mouth
- Best food consistency
- Ability to follow directions
- Symptoms during attempts to swallow.

This assessment should normally be initiated within two working days of referral.33

Some attempts have been made to structure the clinical assessment in a test format17, 34 but most evaluators follow their own checklist. This should include notes on:

- The history and nature of the complaint from the patient, the carer and the medical notes.
- General observations on level of consciousness, posture, cognitive status and ability to co-operate.
- Orofacial examination to assess the structure, function and sensitivity of the face, lips, tongue, palate, and larynx, including reflexes.
- Results of a direct test of swallowing using different food consistencies and observing features of the oral and pharyngeal phases. Excursion and timing of the laryngeal movement should be measured by both visual and tactile monitoring. Voice quality should be assessed. The effects of compensation strategies should be noted.
**Clinical assessment should normally be initiated within two working days of referral**

*Grade C*

Patients presenting with features indicating dysphagia and/or risk of aspiration should receive further clinical evaluation, which may include trial food of differing consistency, postural techniques, swallowing manoeuvres or sensory stimulation

*Grade B, level IIa & IIb*

3.2 **Instrumental investigation**

A limitation of clinical examination is that information on the pharyngeal stage of swallow can only be inferred and ‘silent’ aspiration may go undetected. Findings from clinical assessment should be confirmed using a complementary technique when there is any doubt about management.

3.2.1 **Videofluoroscopy**

Videofluoroscopy (the modified barium swallow) identifies aspiration in patients which cannot be identified clinically and remains the gold standard in patients who require a complete evaluation of pharyngeal dysfunction.

3.2.2 **Other instrumental investigations**

Alternative methods of examination, e.g. videoendoscopy and cervical auscultation, may be employed where the patient’s mobility precludes videofluoroscopy, although videofluoroscopy remains the most common, reliable and easily available assessment at present.

This will confirm subsequent patient management, either to work directly on swallowing using food and drink, postural techniques, swallowing manoeuvres, sensory stimulation, or changing food consistencies; or to work indirectly with oral motor exercises and facilitation techniques, giving nil by mouth.

3.3 **Benefit of videofluoroscopy**

There have been no clinical trials to examine if changes in treatment following videofluoroscopy examination improve outcome. A retrospective study of videofluoroscopy in a variety of clinical disorders showed a significant increase in aspiration pneumonia in one group for which there was no specific management of dysphagia compared with a group where dysphagia was actively managed following videofluoroscopic identification of aspiration. A number of descriptive studies support the view that videofluoroscopy has an important role in monitoring the effectiveness of different therapy techniques.
Videofluoroscopy examination should be considered where, following bedside examination, the risk/benefit ratio of proceeding with trial food is poor, where there is doubt about future management options, or where there is need for clarification of diagnosis

Grade B, level II & III
4 Management

4.1 Treatment strategies
The decision whether to work directly on swallowing (i.e. to use food and/or drink) or to work indirectly (i.e. to provide exercises to improve motor control without the need to swallow) is based largely on the patient’s level of aspiration risk and susceptibility to complicating sequelae.

- **Oral feeding** is best where possible.\(^4^5\)
- **Modification of food consistencies** can significantly reduce the incidence of aspiration pneumonia.\(^4^6\)
- **Posture techniques** have a significant impact on the safety of the swallow.\(^3^2\)
- **Sensory enhancement** can facilitate the triggering of the swallow in some cases.\(^3^1, 4^7\)
- **Swallow manoeuvres** alter selected aspects of pharyngeal swallow.\(^4^8, 4^9\)

4.2 Fluid and nutritional needs of dysphagic stroke patients
Prevention of dehydration is a priority when a patient is unable to manage an adequate fluid intake. Videofluoroscopic evaluation of aspiration predicts pneumonia and death but not dehydration following stroke\(^5^0\) and regular monitoring for evidence of fluid depletion is required (e.g. fluid balance charts, serum electrolytes).

Protein energy malnutrition is found in up to 16% of stroke patients admitted to hospital,\(^5^1\) and in other patient groups this is associated with poor recovery and rehabilitation.\(^5^2-5^4\) Although no specific studies have been carried out with stroke patients, early recognition of malnutrition and prompt nutritional intervention has been shown in other patient groups to improve recovery and lead to a reduced hospital stay.\(^5^5-5^8\) Documentation of nutritional status aids early identification of nutritional problems.\(^5^9\) The hospital menu should be adapted to provide suitable choices for patients requiring modification of food consistencies.

4.3 Alternative feeding
Artificial nutritional support may be required in those patients who are not in a terminal state where oral intake is considered to lead to high risk of aspiration or where oral intake does not meet nutritional requirements. An initial trial of nasogastric (NG) feeding is appropriate, particularly if feeding may be required for only a few days. However the risk of aspiration, which persists with both NG and gastrostomy feeding, may be exacerbated with NG feeding.\(^6^0\)
Endoscopic gastrostomy has been demonstrated to be a safe technique in those with persisting neurological dysphagia. One study has shown that gastrostomy feeding introduced two weeks post-stroke in those with persisting dysphagia reduces mortality and improves nutritional indices compared to nasogastric feeding. However, the mean survival time for patients post-gastrostomy appears to be poor and more research is required to clarify the timing and type of nutritional support and the benefits to be found.

A rehabilitation plan or modified feeding and nutrition plan should be agreed with, documented and communicated effectively to the patient, carers and all members of the health care team

Documentation of each patient’s nutritional status and fluid intake should be routinely entered in the patient’s medical and nursing notes, and regularly updated

Gastrostomy is recommended for appropriate patients requiring enteral feeding, particularly in those where it is required for longer than four weeks, but may be considered earlier in some patients

Grade C

4.4 Continuing education
All personnel in contact with stroke patients in the acute stage should be aware of the possibility of dysphagia as a complication of stroke. Multidisciplinary training opportunities improve staff awareness and understanding of dysphagia patients’ needs with regard to food texture, safety, dignity, psychological and physical well-being. Nurses and junior doctors should receive appropriate education in screening for dysphagia, the prognosis and possible short and long term complications. Speech and language therapists with responsibility for dysphagia assessment should have suitable training as recommended by the Royal College of Speech & Language Therapists. Catering staff should receive information and training to enable them to appreciate the importance of specific food consistencies and to prepare appropriate meals or food items, with any necessary nutritional supplementation advised by a dietitian.

Grade C
5 Implementation of the Guideline

5.1 Health gain which may accrue from the implementation of this guideline:
- Prompt identification of dysphagia may minimise the risk of pulmonary problems.
- Therapeutic strategies may enable patients to swallow safely, while protecting the airway.
- Videofluoroscopic assessment may identify silent aspiration which cannot be diagnosed from bedside assessment.
- Prompt nutritional intervention may lead to improved recovery and reduced stay in hospital.

5.2 Appropriate management of dysphagia may be promoted in the following ways:
- **Patient-specific reminders at time of consultation or admission**
  Several examples of dysphagia protocols and patient specific reminders which may serve as the basis for development of local protocols are shown at Annex 3.
- **Audit of key outcome indicators**
  Identification of suitable outcome indicators is difficult as dysphagia is only one of many possible causes of bronchopulmonary infection. The nutritional status and quality of life of surviving patients should also be considered.
- **Audit of process**
  The minimum provisions and clinical core dataset required for audit of process are listed at Annex 2.
6 Development of the Guideline

6.1 Responsible bodies
The series of SIGN guidelines on management of patients with stroke was developed through the Royal College of Physicians and Surgeons of Glasgow, under the chairmanship of Dr Margaret Roberts, acting on behalf of the Scottish Intercollegiate Guidelines Network (SIGN) and these have been accepted by SIGN as the Scottish National Guidelines from which local protocols should be derived. Membership of the dysphagia guideline development group is listed at the front of the guideline. Declarations of interest of guideline development group members are held by the SIGN secretariat.

6.2 Development process
Successive drafts were developed by synthesis of the literature (identified by Medline search with references in key papers followed up), correspondence and full discussion. The draft recommendations were discussed at two consensus conferences held in Glasgow and Edinburgh, attended by 350 health care professionals and representatives of Chest, Heart & Stroke Scotland.

6.3 Recommendations for further research
- Development of new techniques for assessment and non-invasive tests for measurement of outcomes of dysphagia management
- The relative risks of aspiration, silent and overt, to a stroke patient
- Home care needs of patients with dysphagia
- The effect of dysphagia therapy and management on the incidence of pneumonia and other morbidity
- Communication and compliance, involving the dysphagia team, patients and carers
- Timing and type of nutritional support required in dysphagic patients.
Annex 1

Staff groups who require to be involved in development and implementation of local protocols derived from this national guideline.

- Hospital and primary care medical staff
- Nursing staff in hospital and community
- Pharmacy staff
- Occupational Therapy staff
- Physiotherapy staff
- Speech & Language Therapy staff
- Dietetic staff
- Catering staff
- Area audit committees
- Deans and Postgraduate Deans of University Faculties of Medicine in Scotland and other relevant professional educational bodies
- Radiologists and radiographers
Annex 2

Minimum provisions and core dataset required for audit of process

1. All stroke patients screened by trained nursing or medical staff on receiving ward for aspiration risk prior to presentation of food or drink.
2. Patients presenting with risk features referred to speech and language therapist for specialist evaluation, with involvement of other members of the multidisciplinary team as appropriate.
3. Speech and language therapy and dietetics response to referral within agreed response time.
4. Outcome of speech and language therapy assessment and dietetic assessment recorded in the medical/nursing notes.
5. Availability and appropriate use of videofluoroscopy to clarify risk/benefit of oral intake.
6. Management plan for oral intake agreed by multidisciplinary team and documented.
7. Completeness of food record chart in notes.
8. Availability of appropriate diet of recommended consistency and nutritional content for next meal, provided 1.5 hours’ notice given.
9. Availability of appropriate snacks between meals.
10. Appropriate use of alternative feeding.
11. All disciplines adhere to management plan.
12. Evidence of communication with patient and/or carers about dysphagia.
Examples of dysphagia protocols and patient specific reminders which may serve as the basis for development of local protocols

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**Dysphagia screening protocol and referral guideline from the Victoria Infirmary, Glasgow**

*To be undertaken by a trained nurse or doctor*

Before testing for swallow competence observe the patient for the following signs, which may be indicative of difficulty:

- Wet phonation (wet hoarse voice quality)
- Reduced laryngeal elevation on swallow
- Abnormal voluntary cough
- Abnormal phonation quality
- Poor conscious level.

Ensure patient is sitting or well-supported in sitting position and alert

If conscious level is good and voluntary cough is normal, give 5ml teaspoon of water. If patient does not cough with this, repeat with controlled mouthful from a cup.

If patient coughs or chokes at any stage or shows any of above signs of possible aspiration, refer to speech and language therapy.

*If the above screening is satisfactory, a further trial may be undertaken with 5ml puree, free drink of 50ml fluid in a cup, and then a small biscuit. This is normally carried out by nursing staff prior to giving food.*
Examples of dysphagia protocols and patient specific reminders which may serve as the basis for development of local protocols

**Dysphagia screening protocol from the Victoria Infirmary Glasgow**

- **Problem at conscious level**
  - Nil by mouth until able to sit up with support and respond

- **Note predictive features**
  - Conscious level, voice quality, voluntary cough, problem at oral stage
  - Note chest condition, nutritional status

- **Good conscious level, normal voice & voluntary cough**
  - Carry out water swallow test 5ml of liquids

- **No involuntary cough on 5ml of liquids**
  - 5ml amounts fruit puree
  - 10ml amount water
  - Controlled swallow from cup

- **No problems**
  - Feed with care and observe

- **Speech and Language Therapy (SLT)**
  - Full clinical assessment

- **No aspiration risk**
  - Recommend appropriate diet/modified food consistencies

- **Aspiration risk**
  - Videofluoroscopy assessment
  - Modified barium swallow

- **Team decision**
  - Assess risk/benefit of giving food/drink with appropriate modification of posture/food consistencies

- **Nutrition assessment**
  - Agree feeding method

- **Wet, hoarse voice, poor voluntary cough problem at oral stage**
  - Refer for SLT assessment
  - Refer to nutrition team or dietitian

- **Implement modified feeding plan and/or rehabilitation plan**

**Examples of dysphagia protocols and patient specific reminders which may serve as the basis for development of local protocols**
Examples of dysphagia protocols and patient specific reminders which may serve as the basis for development of local protocols

**Dysphagia care model from the Western General Hospital, Edinburgh**

- **Check referral is appropriate**
  - Symptom of dysphagia condition associated with dysphagia
  - Consistently alert
  - Managing own secretions

- **Obtain full history**
  - Medical
  - Respiratory
  - Nutritional
  - History of swallowing problems

- **Observe patient**
  - Conscious level
  - Ability to follow/remember instructions
  - Positioning
  - Abnormal laryngeal features
  - Presence of equipment
  - Spontaneous cough/swallow

- **Bedside assessment**
  - OFE (orofacial examination) direct test

- **Plan management**
  - Normal feeding
  - Modified regime (posture, diet, supervision)
  - Nil orally
  - Compensatory strategies
  - Therapy

- **Implement management**

- **Evaluate progress**

- **Discharge**
  - No abnormality detected
  - Assessment and advice
  - Problem resolved
  - Present potential realised
  - Deteriorating medically
  - Non compliant
  - Transferred
  - Failure/unable to attend
  - Died

- **Reassess**

- **Reffer for specialist opinion/investigation**

- **Liaise with team**
  - Doctor
  - Nurse
  - Physiotherapist
  - Dietitian

- **Referral received**
  - No
  - Yes
Examples of dysphagia protocols and patient specific reminders which may serve as the basis for development of local protocols

Example of a dysphagia protocol from the Western General Hospital, Edinburgh

Aims of Service
To provide a comprehensive and responsive service to clients presenting or at risk of presenting with oropharyngeal swallowing disorders.
To facilitate intervention as part of the multidisciplinary team.

Referrals
Inpatients:
Verbal referral by nurse or paramedical team member must be supported by a doctor’s written consent. A consultant may agree to blanket referrals for his patients where individual written consent is not necessary.

Outpatients:
A written request by the consultant or GP is required.

Videofluoroscopy:
If the referral is from outwith the trust, a Speech & Language Therapy report is requested in addition to the doctor’s letter.

Patients will be accepted into the service who:
• have a presenting symptom of oropharyngeal dysphagia
• are at risk of having a presenting symptom as a result of having a condition associated with dysphagia
• are consistently alert for periods of 15-20 minutes
• are able to manage their own secretions

To provide a dysphagia service, the department must have:
• appropriate staffing
• appropriate skillmix

in order to discharge the ‘duty of care’ in full.

Aetiologies
Patients with oropharyngeal dysphagia arising from neurological, structural or psychogenic origins will be seen. Only adult patients will be seen as there are specialist services for children elsewhere in the area.

Response Times
Standards:
• All inpatients to be seen within one full working day of receipt of referral.
• All outpatients to be sent an appointment within one working week of receipt of referral and will be seen within three working weeks of referral receipt.

On receipt of referrals, close liaison with the relevant health and social care teams should be instituted in order to gain the maximum information regarding the client and presenting disorder and to assess urgency.

The service should be flexible enough to respond to urgent outpatient referrals within one working week, provided sufficient information is available to contact the patient.
Settings
Patients will be seen within the trust as inpatients and outpatients. Domiciliary visits may be carried out, but a full assessment may not be carried if the risk to the patient is considered too great.

Reporting/Documentation
Each intervention, including assessment results and therapy given (including consistencies and volumes taken), will be reported in the Speech & Language Therapy notes within 24 hours of the event.

Written summary reports of assessment results progress, management changes and discharge will be submitted to the medical notes at appropriate intervals.

A written, individualised care plan will be placed in the nursing notes or at the bedside for inpatients or given to the patient or carer in the case of outpatients.

Verbal reports will be made to medical, nursing and other appropriate staff.

Safety Procedures
1. Full history should be obtained and patient should be observed before direct testing takes place.
2. A physiotherapist should be present when assessing unknown patients initially. Consideration to having a physiotherapist present should be given during subsequent assessments and therapy.
3. Therapists should adhere to the requirements of the Food Handling Act (1990).
4. Therapists should follow the trust infection control policy.
5. Therapists should observe manual handling guidelines.
6. Therapists should comply with radiation protection standards.
7. Therapists should be familiar with emergency procedures in the trust.

Professional Relationships
The therapist will liaise with other professionals, carers and relevant voluntary agencies to achieve the best, integrated care for the patient.

The dysphagia team may include: doctor, nurse, auxiliary nurse, physiotherapist, dietitian, diet cook, and occupational therapist (amongst others), as well as the patient and their carers.

* Where disputes concerning management occur, the therapist should aim to resolve the discussion. If the dispute cannot be resolved, the therapist may have to consider withdrawing from the case.

Discharge
The patient is discharged from the service under the following circumstances:
- assessment complete and advice given
- problem resolved
- modified regime established - potential realised
- deteriorating medical condition
- non-compliance
- transferred
- deceased
- therapist withdrawal

Team members, the patient and family/carers should be involved in the decision to discharge.

The procedure for further contact with the department should be made clear to patient/carers where required.
Example of an oral feeding protocol, summarising the decisions that have to be made about nutritional management following bedside and/or radiographic assessment.

Reproduced from Clinical Rehabilitation by kind permission of Arnold Publishers
### Example of modified food consistencies from the Royal Infirmary of Edinburgh

<table>
<thead>
<tr>
<th>Food Consistency</th>
<th>Examples</th>
<th>Points to Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thin liquid</td>
<td>normal liquid such as tea, water, lemonade or squash</td>
<td>• food thickeners can be added to liquids (cold or hot)</td>
</tr>
<tr>
<td>Thick liquid</td>
<td>viscous liquid that still pours from a spoon, e.g. thick milkshake or syrup</td>
<td>• smooth, thick and uniform consistency with no hard lumps</td>
</tr>
<tr>
<td>Pureed ‘practice stage’</td>
<td>set yoghurts (no fruit pieces) pureed fruit semi-solid supplements smooth mousse</td>
<td>• restricted in quantity</td>
</tr>
<tr>
<td></td>
<td><strong>unsuitable foods:</strong> ice-cream jelly porridge</td>
<td>• think of it as a “tool” which allows the patient to practise swallowing</td>
</tr>
<tr>
<td>Pureed ‘full stage’</td>
<td>as for ‘practice stage’ plus liquidised porridge thickened liquidised soups liquidised meats mashed potato/pureed vegetables thick milk pudding (custard, sago) ice-cream jelly</td>
<td>• smooth, thick and uniform consistency with no hard lumps</td>
</tr>
<tr>
<td></td>
<td><strong>unsuitable foods:</strong> rice pudding</td>
<td>• larger quantities than in ‘practice stage’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• no separate liquid from food</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• do not mix food textures to eat at the same time e.g. ice-cream and jelly or liquidised porridge and milk</td>
</tr>
<tr>
<td>Minced/mashable</td>
<td>porridge minced meat scrambled egg flaked fish in sauce soft pudding (sponge and custard) ice-cream and jelly brown bread</td>
<td>• foods can be easily mashed with a fork</td>
</tr>
<tr>
<td></td>
<td><strong>unsuitable foods:</strong> stringy or fibrous textures e.g. sausages chips salad vegetables white bread (more difficult to swallow) crisps biscuits</td>
<td>• foods likely to need a thick sauce or gravy</td>
</tr>
<tr>
<td>Soft/bite-sized</td>
<td>sandwiches with soft filling (no crusts) soft biscuits tinned fruit boiled egg tender stews</td>
<td>• foods can be easily chewed</td>
</tr>
<tr>
<td></td>
<td><strong>unsuitable foods:</strong> raw vegetables and crunchy fruits stringy or fibrous textures e.g. pineapple</td>
<td>• avoid patient becoming tired from chewing</td>
</tr>
<tr>
<td>Normal</td>
<td>roast meats boned fish salad vegetables</td>
<td></td>
</tr>
</tbody>
</table>
Key points for primary care

- All personnel in contact with stroke patients in the acute stage should be made aware of the possibility of dysphagia as a complication of stroke.

- A prospective study identified dysphagia in 45% of stroke patients admitted to hospital.\textsuperscript{2} Subsequent studies found similar high rates.\textsuperscript{3}

- Up to one third of alert stroke patients with dysphagia are reported to die within the first six months following stroke, compared with fewer than 10% of other alert stroke patients.\textsuperscript{4}

- The most immediate danger to health in most patients is aspiration of material into the tracheobronchial tree, which presents a triple threat of chemical pneumonitis, bacterial pneumonia, and mechanical obstruction of the airways.\textsuperscript{8-13}

- Thorough clinical examination will identify dysphagia but fail to identify 40-58% of patients aspirating.\textsuperscript{14,15}

- A simple water swallow test is feasible in the primary care setting to screen for stroke-associated dysphagia.


References

33 Van der Graay A. Communicating Quality: professional standards for speech and language therapists. 2nd ed. London: Royal College of Speech and Language Therapists; 1997.
44 Neumann S. Swallowing therapy with neurological patients: results of direct and indirect therapy methods in 66 patients suffering from neurological disorders. Dysphagia 1993; 8: 150-153


Management of Patients with Stroke

Identification and Management of Dysphagia

A Quick Reference Guide

Derived from the National Clinical Guideline recommended for use in Scotland by the Scottish Intercollegiate Guidelines Network (SIGN)

A B C refer to grade of recommendation

45% of stroke patients admitted to hospital may have dysphagia

All personnel in contact with stroke patients in the acute stage should be made aware of the possibility of dysphagia

Up to one third of alert stroke patients with dysphagia die within the first six months following stroke (compared with fewer than 10% of those without dysphagia)

The most immediate danger to health in most patients is aspiration of material into the tracheobronchial tree

Thorough clinical examination will identify dysphagia but fail to identify 40-58% of patients aspirating

Screening

All stroke patients should be screened before being given food or drink to identify those patients with dysphagia

The screening test is usually a simple water swallow test

Checks should also be made on conscious level, voice abnormality, and respiratory and nutritional status

Videofluoroscopy should be considered if:
- the risk/benefit ratio of proceeding with trial food is poor
- there is doubt about future management options
- there is need for clarification of diagnosis

Assessment

Patients presenting with features indicating dysphagia and/or risk of aspiration should receive further clinical evaluation, e.g.
- trial food of differing consistency
- postural techniques
- swallowing manoeuvres
- sensory stimulation

Abnormalities on any of the above observations should lead to immediate referral to a speech and language therapist (or other suitably trained person) for detailed functional examination of swallow

Nutritional status and fluid intake should be monitored and recorded

Gastrostomy is recommended for appropriate patients requiring enteral feeding

Management

A documented rehabilitation plan or modified feeding and nutrition plan should be agreed with and communicated to the patient, carers, and all members of the health care team

Catering staff should receive information and training to enable them to appreciate the importance of specific food consistencies and to produce these with the required nutritional supplement

Additional copies of this Quick Reference Guide and the full guideline are available from

SIGN Secretariat, 9 Queen Street, Edinburgh, EH2 1JQ
This Quick Reference Guide was issued in November 1997 and will be reviewed in 1999