Dysphagia

Induction

Carla Bryson, Highly Specialist SLT.

Overview of training

- Eating & drinking
- The normal swallow
- Dysphagia
- Management of swallowing difficulties
- Improving the mealtime experience
- Experiential activities

Dysphagia in the press

- **Vulnerable woman starved to death in NHS hospital following “unacceptable” failures**
  - Ms Lewis died in July 2017 from the effects of malnutrition.
  - Whilst an inpatient Ms Lewis did not receive the correct diet - she only ate sandwiches which was contrary to dietary recommendations of a high protein diet
  - Ms Lewis’s family were told by the hospital that she chose the food she ate, however her family argue that the trust has never provided evidence of mental health capacity assessments it said were carried out.
- **Downpatrick care home fined after a resident chokes to death**
  - A care home was fined £20,000 after the death of a resident who choked on a pancake.
  - The care plan outlined that Mr McCullough was to receive mashed or pureed food and liquid only, and "no bread was to be permitted".
- **Care UK fined £1.5m over care home choking death**
  - 86-year-old man was admitted to a care home after being discharged from hospital where he was assessed as at risk of choking and in need of a special diet of soft food.
  - A Care UK regional nurse amended the resident’s eating and drinking plan to state that he ate a normal diet and drank normal fluids.
  - A post-mortem, which found he had eaten large pieces of meat, concluded his cause of death as choking on food.

Dysphagia in the press

- **Care home fined £82, 429 after man chokes on porridge**
  - In June 2015 the man choked on his porridge while he was receiving his breakfast in bed. He was admitted to hospital. He was re-admitted to hospital that evening after choking again on thick porridge. The hospital diagnosed aspiration pneumonia.
  - Staff were unclear about the consistency of food and drink they should have been giving and did not understand how to safely support the 77-year-old to eat and drink because they did not pass on advice from his SALT or maintain accurate care records
  - SLT advice in March 2015 - normal fluids and a pre-mashed diet (now level 5). The SALT also recommended that he should be upright and have his head supported to eat and drink.
- **Care home fined £640,000 after resident chokes to death on doughnut**
  - The resident was on a diet of minced and moist food and was not supposed to have been given bread products.
  - prior to the resident's death, she had frequently been given sandwiches from the snack trolley, which repeatedly put her at risk of choking.

Mealtimes are important!

- Health
- Happiness
- Family & religious celebrations
- Social event
- Reward
- Evoke memories

- Consider – do any of our patients experience these?

Caregivers are important

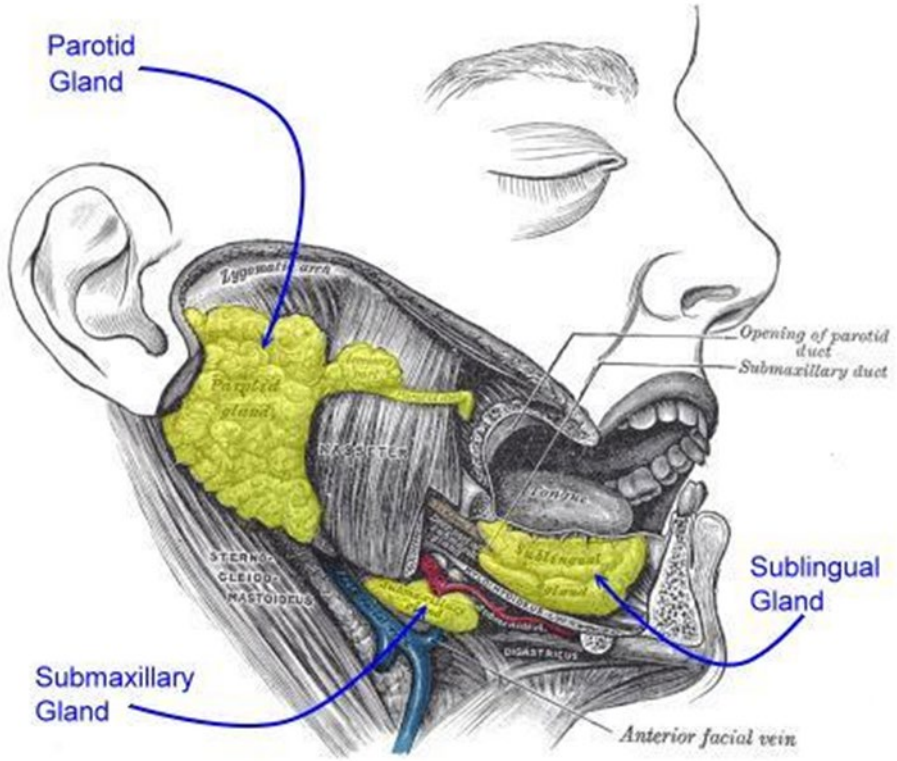
- You spend the most time with the people you are looking after
- You are most likely to notice if someone is having difficulty with eating & drinking
- You can make a big difference in someone's life by passing on information
  - May even save their life! – Aspiration pneumonia can be fatal

Facts!

- How many times do you swallow per day?
  - 600-1000 times
- How much saliva do you swallow each day?
  - Approx. 2 litres
- Do you stop breathing when you swallow?
  - Yes
- How many litres of saliva do you produce during your life?
  - 20000 litres

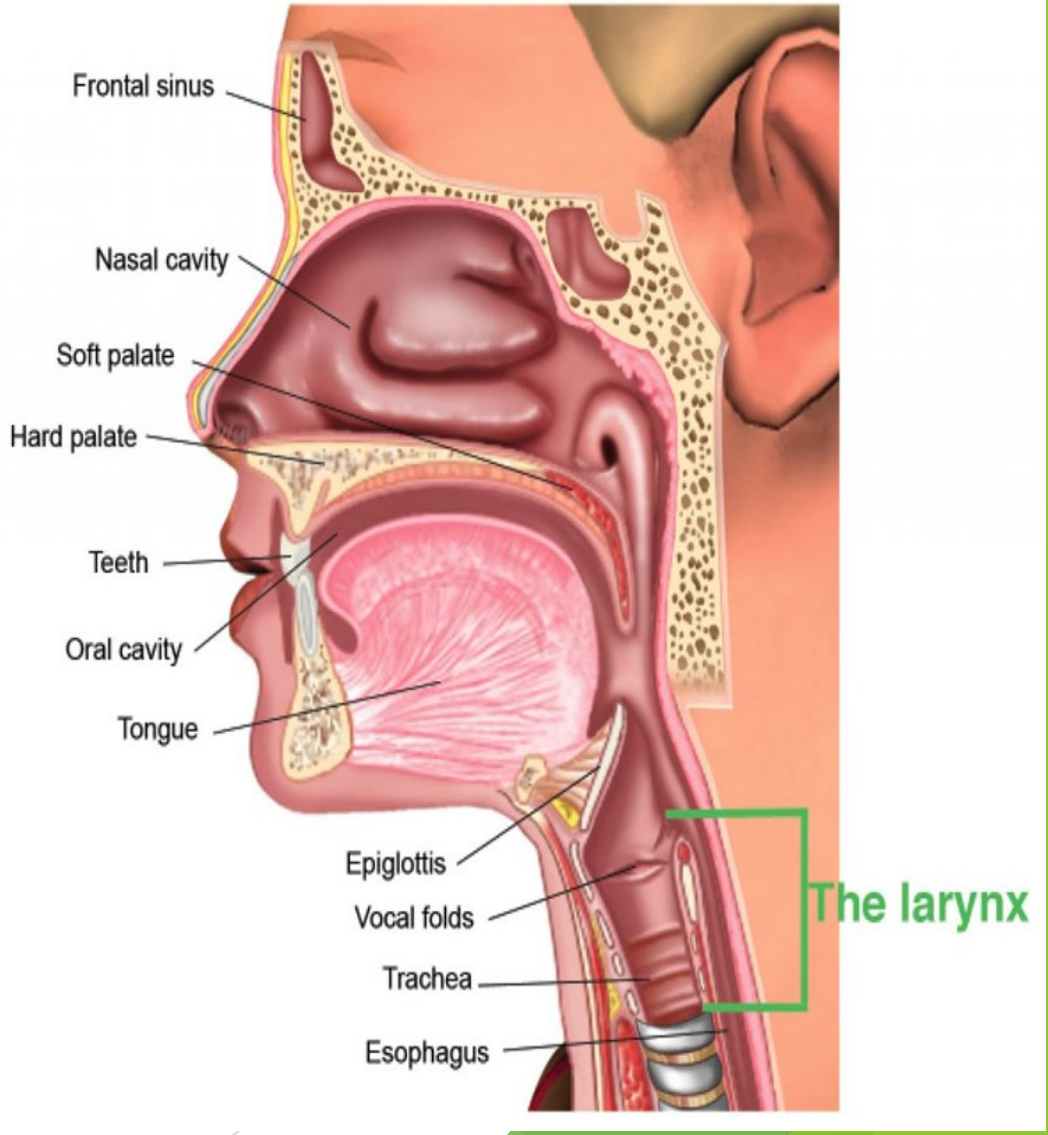
Saliva

- Provides:
  - Protection
  - Buffering
  - Tooth integrity
  - Antimicrobial action
  - Tissue repair
  - Taste sensation
  - Digestion



The normal swallow

- Very complex – involves coordination between neural commands & anatomic structures to precisely sequences physiological & respiratory events needed to transfer food/fluid from the mouth to the stomach.
- 4 phases
  - Oral preparatory
  - Oral
  - Pharyngeal
  - Oesophageal
- “The swallow should be considered as one behaviour with four components acting together in an integrated manner to achieve successful swallow function” (Crary & Groher, 2003)



What is dysphagia?

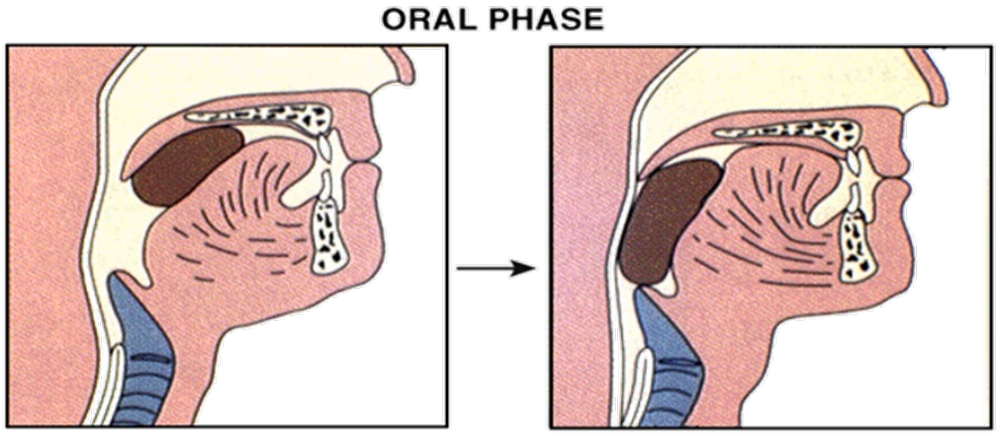
- Dictionary definition:
  - “a condition in which the action of swallowing is either difficult to perform, painful or in which swallowed material seems to be held up in its passage to the stomach”
- Dys = difficulty
- Phagia = eat
- Difficulties can arise in any phase of swallowing
- Can be transient, persisting or deteriorating
- Can range from mild to profound severity
- Affects approx.13.5% of the general population
  - Incidence of dysphagia increases with age -19-33% of individuals older than 80 years-of-age, and up to 50% of individuals living in a nursing home.

Oral preparatory phase

Normal swallow	Possible difficulties
Mouth opens & food/drink is placed in the mouth	Reduced jaw opening
Taste buds activated, saliva production increases	Reduced saliva production – dry mouth
Lips close	Poor lip movement & closure – anterior spillage
Tongue & jaw move food onto chewing surface of the teeth	Reduced tongue & jaw movements – slow/limited/ineffective mastication Pocketing/residue Poor dentition – reduced chewing
Food mixes with saliva	Reduced saliva – less moist bolus
Bolus is formed	Difficulty forming cohesive bolus

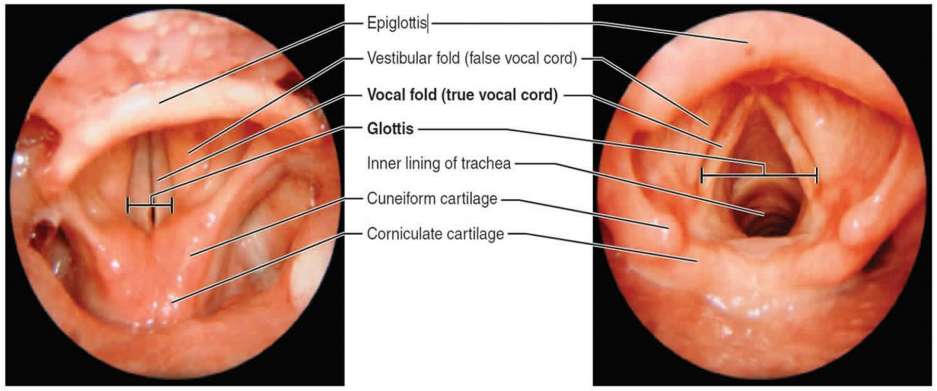
Oral phase

Normal swallow	Possible difficulties
Chewing ceases	Perseverative chew
Tongue propels bolus from front to back of mouth	Limited tongue movement – difficulty moving/controlling the bolus
Sensory receptors in the oropharynx and tongue itself are stimulated and pharyngeal swallow is triggered	Impaired swallow trigger – varying levels of delay or absent swallow



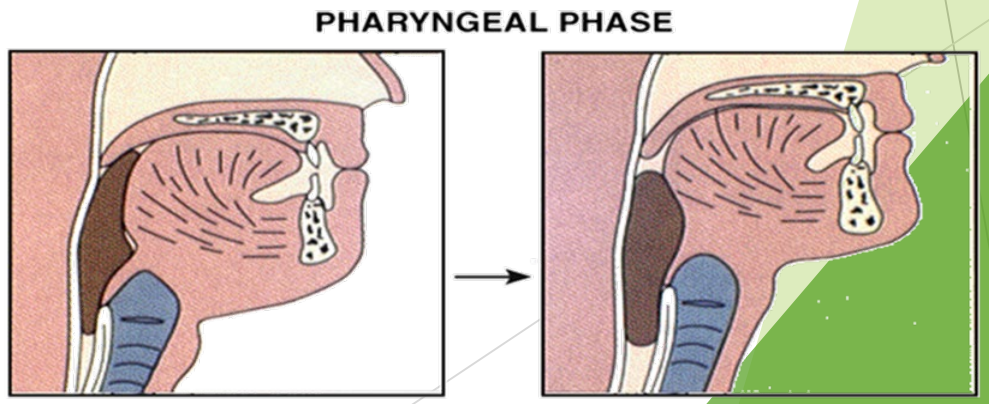
Pharyngeal phase

Normal swallow	Possible difficulties
Soft palate elevates to close nasal cavity & create pressure seal	Nasal regurgitation
Larynx rises & moves forward & epiglottis folds down over the airway entrance	Penetration/aspiration due to insufficient closure of airway
False & true vocal fold close – breathing stops	Penetration/aspiration due to reduced closure Shortness of breath if pre-existing breathing difficulties
Pharyngeal muscles squeeze bolus through pharynx by peristalsis	Sensation of sticking/pooling/residue Overspill penetration/aspiration



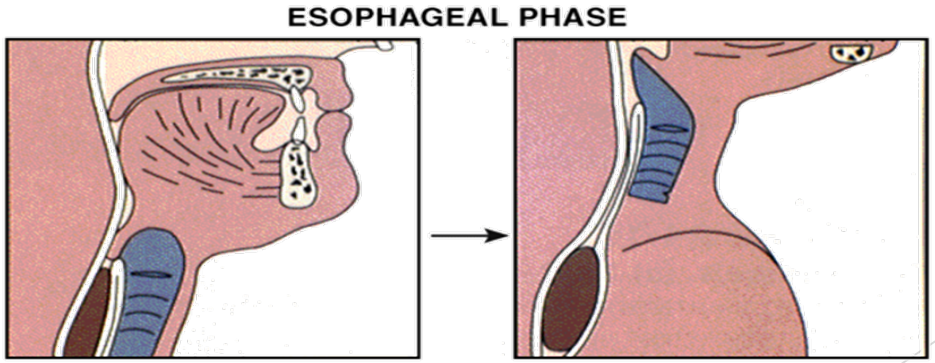
(a) Vocal folds in closed position; closed glottis

(b) Vocal folds in open position; open glottis



Oesophageal phase

Normal swallow	Possible difficulties
Upper oesophageal sphincter relaxes & opens	Reduced opening – pooling/sticking/overspill aspiration
Peristalsis of oesphagus moves bolus to lower oesophageal sphincter	Poor movement of bolus - builds up in oesophagus – reflux/vomiting
Lower oesophageal sphincter opens to allow bolus into stomach	As above



Chronic impact of dysphagia

- Weight loss - inadequate nutrition
- Dehydration – inadequate fluid intake
- Chest infection – aspiration pneumonia
- Drooling
- Fear of eating/drinking or food avoidance/refusal
- Increased mealtimes
- Difficulty taking medications

Causes of dysphagia

- Neurogenic e.g. stroke, Parkinson's disease, Motor neurone disease
- Head & neck surgery
- Trauma e.g. head injury
- Chemo and radiotherapy
- Tracheostomy + mechanical ventilation
- Obstructive sleep apnoea
- Medication
- Gastroesophageal reflux
- Ageing

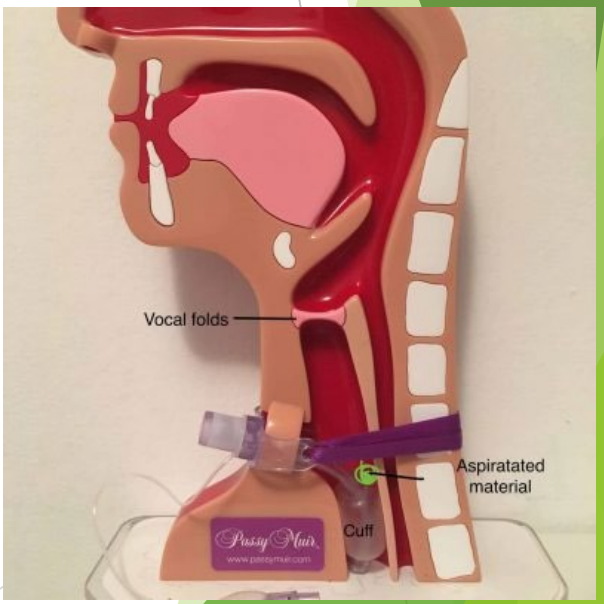
- Consider – how many of our patients at Holy Cross?

Neurogenic dysphagia

- 50% of all stroke patients during the acute phase
- 95% of patients with Parkinson’s disease
- 70% of people with severe acquired brain injury
- 80% of patients with dementia

Tracheostomy tubes

- Dysphagia occurs in 11-93% of tracheostomy patients!
  - Coexists with dysphagia
  - Anatomical location of the tube
  - Medical complexities that resulted in need for artificial airway
- Placement of the tube **may** affect some of the normal sequences of swallowing:
  - Reduced laryngeal elevation & closure
  - Reduced cricopharyngeal opening
  - Compression of oesophagus
  - Disruption of airflow
  - Reduced cough effectiveness
- Cuff deflation does not result in swallowing success or increase swallow safety
- Inflated cuff does not prevent aspiration
  - Once material reaches the level of the cuff it has already been aspirated
  - At most it delays material entering lungs.



Ageing

- Ageing affects the normal swallow pattern – presbyphagia
  - Anatomical & physiological changes
- Changes may occur slowly however can have a significant impact e.g.
  - Reduced functional reserve, capacity & endurance
  - Increasing vulnerability to penetration/aspiration
- More time to chew & swallow
- Arthritis in upper neck
- Changes in taste & smell
- Reduced saliva production
- Dentures/poor dentition – chew for longer
- Reduced thirst sensation

Medications

- 3 major mechanisms of drug-induced dysphagia
- Dysphagia as a complication of the medications therapeutic action
  - Depress CNS
    - antiepileptic's, anti anxiety, narcotics - reduce awareness and voluntary muscle control
- Dysphagia as a side effect of the medication
  - Dry mouth (xerostomia)
    - antimuscarinic/anticholinergic, BP, antiemetics, antihistamines, antidepressants etc.
  - Dry mouth & movement disorders affecting the mouth & tongue (dyskinesias)
    - antipsychotics/anti neuroleptics
  - Those that affect the smooth and striated muscles of the pharynx & oesophagus
  - Impaired saliva production – dry mouth or hypersalivation
    - chemotherapy agents, antihypertensives, antiparkinsonian agents
- Dysphagia as a result of medication induced oesophageal injury
  - Retrosternal chest pain & odynophagia (pain on swallowing)
    - Antibiotics (30-60%), NSAIDs, antivirals, bisphosphonates, chemotherapeutic agents

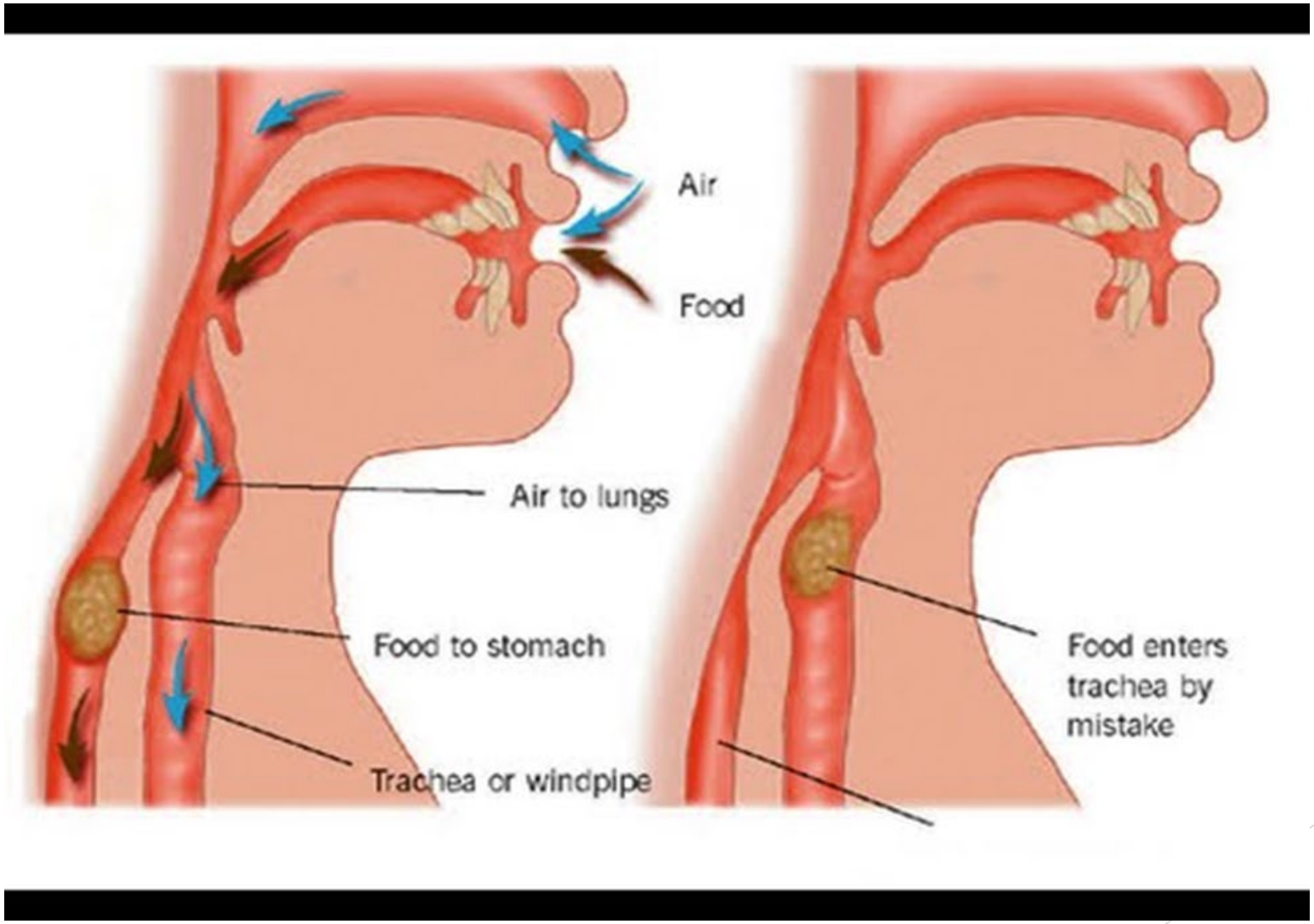
Other factors

- Risky feeding behaviours
  - Eating too fast
  - Large mouthfuls
  - Overfilling mouth
    - Not swallowing before putting the next mouthful in
  - Not chewing sufficiently before swallowing
  - Poor positioning during or after intake
    - Increased risk of aspiration & reflux/regurgitation

Aspiration

- The passage of saliva/food/fluid/gastric contents into the airway below the level of the vocal folds
- Normally due to impaired laryngeal closure
- Also due to overflow from pooling in pharynx
- Can cause aspiration pneumonia – lung infection requiring antibiotics
  - Can be serious even fatal
- Silent aspiration
  - No overt signs at bedside e.g. no coughing/choking/throat clearing
- Poor oral hygiene
  - Infected saliva

Normal swallow vs aspiration



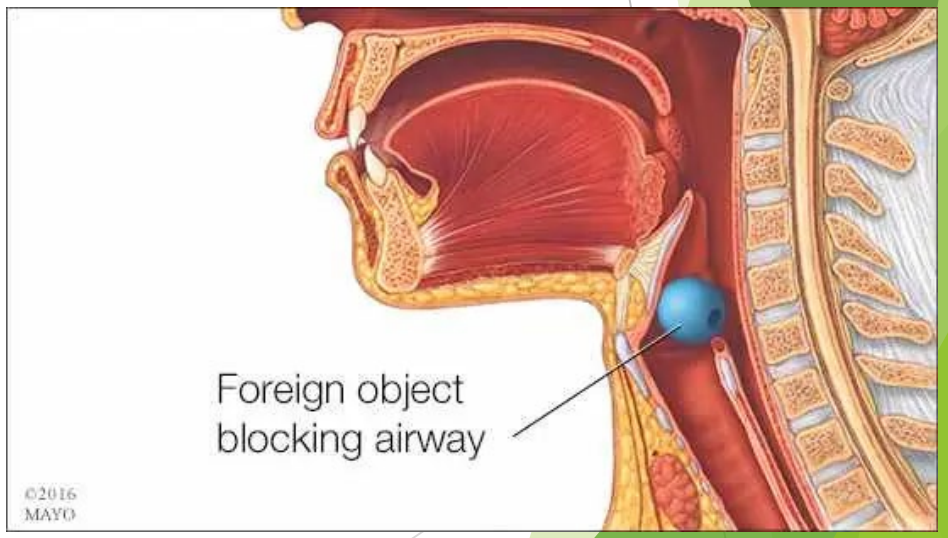
Normal swallow vs aspiration

Choking

- Choking occurs when a patient's airway becomes blocked, causing inability to breathe.
  - This commonly leads to fatal cardiac arrest or lack of oxygen to the brain.
- According to ONS government statistics, 300-400 people die on average every year as a result of choking
  - further analysis of reports published by coroners suggests the true toll is being hidden.
- The patient won't be able to talk or cough

- Choking can kill in less than 10 minutes
  - time is of the essence when somebody begins to choke
  - **4 - 6 minutes of oxygen starvation, brain damage is possible.**
  - **6 - 10 minutes of oxygen starvation, brain damage is probable.**
  - **10+ minutes of oxygen starvation, the victim is likely to die.**

- LifeVac - 3rd line of basic life support



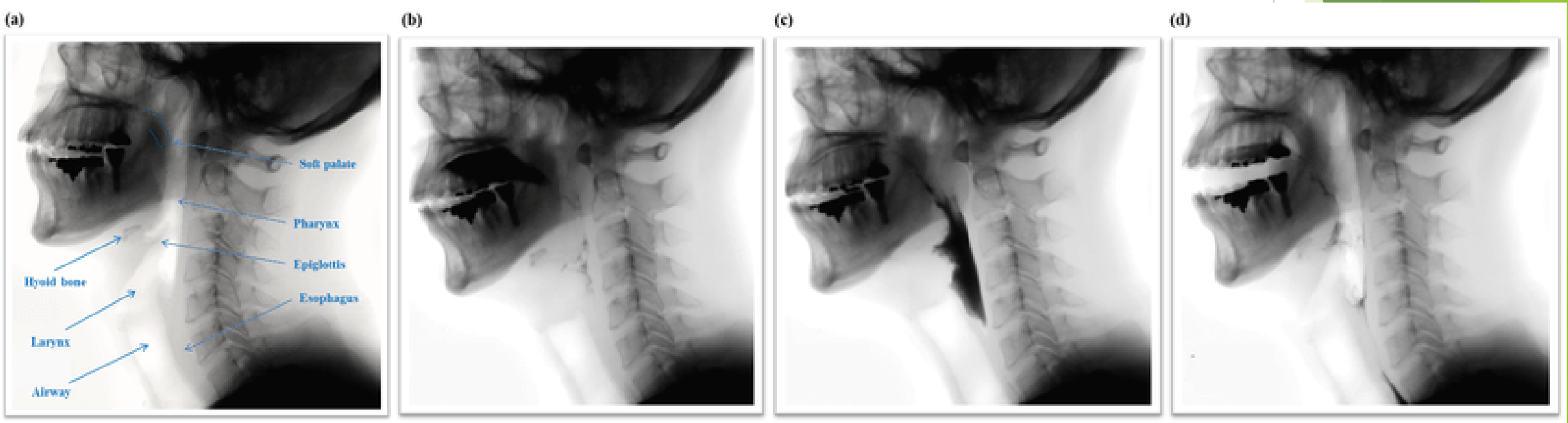
Management of dysphagia

- SLT assessment – objective bedside examination
- Environmental modifications
- Safe swallowing advice
- Modified diet/fluids
- Swallow therapy/strategies
- Postural changes
- Improve oral hygiene
- Non-oral feeding
- Education
- Instrumental evaluation – VDF or FEES

Assessment

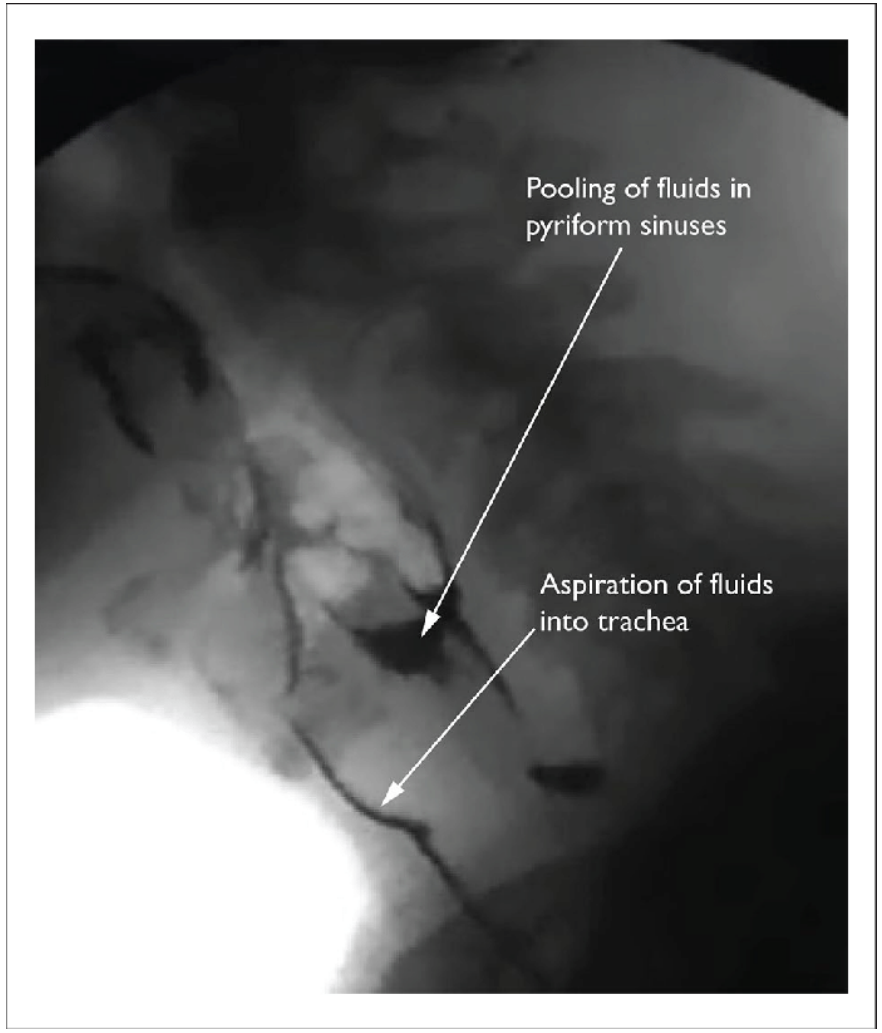
- Detailed case history
- Discussion with patient if able
  - NOK/staff familiar with the patient
- Cognitive abilities & awareness level
- Oromotor examination
- Oral trials if indicated
  - Swallow challenge
- VDF & FEES as appropriate

Videofluoroscopy (VDF) – normal swallow



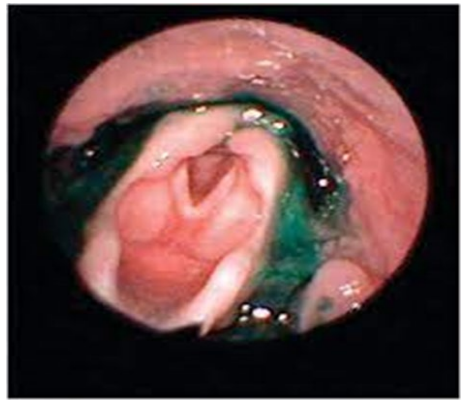
VDF – normal swallow

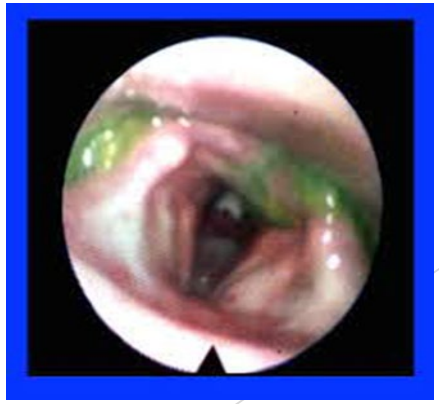
VDF - aspiration



FEES

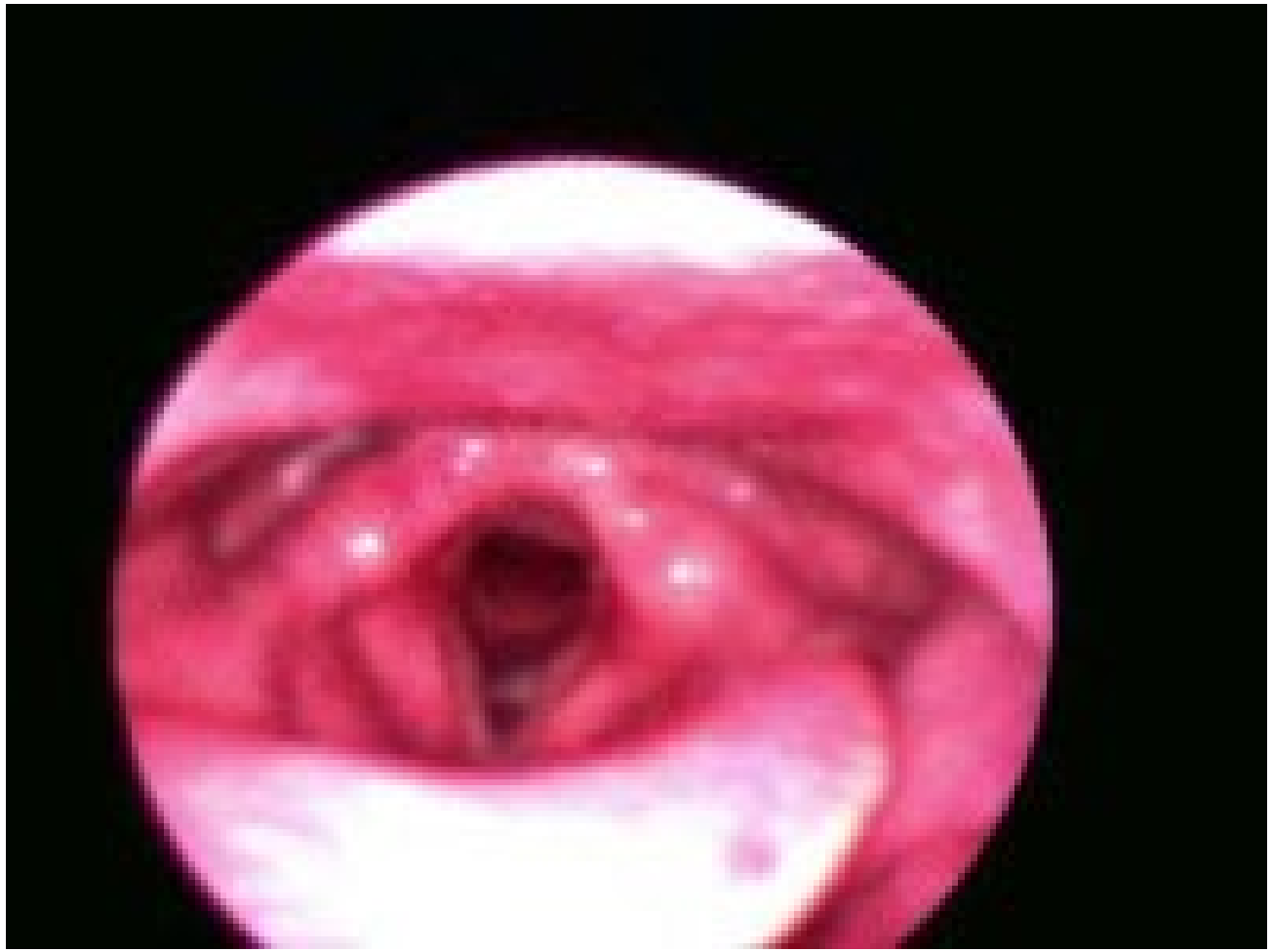
- Clinic now on-site
- Mr David Walker (ENT Consultant)
- Joint clinic with SLT
- Roughly every 8-12 weeks
  - Can provide emergency advice/cover where necessary





FEES – normal swallow

FEES - aspiration



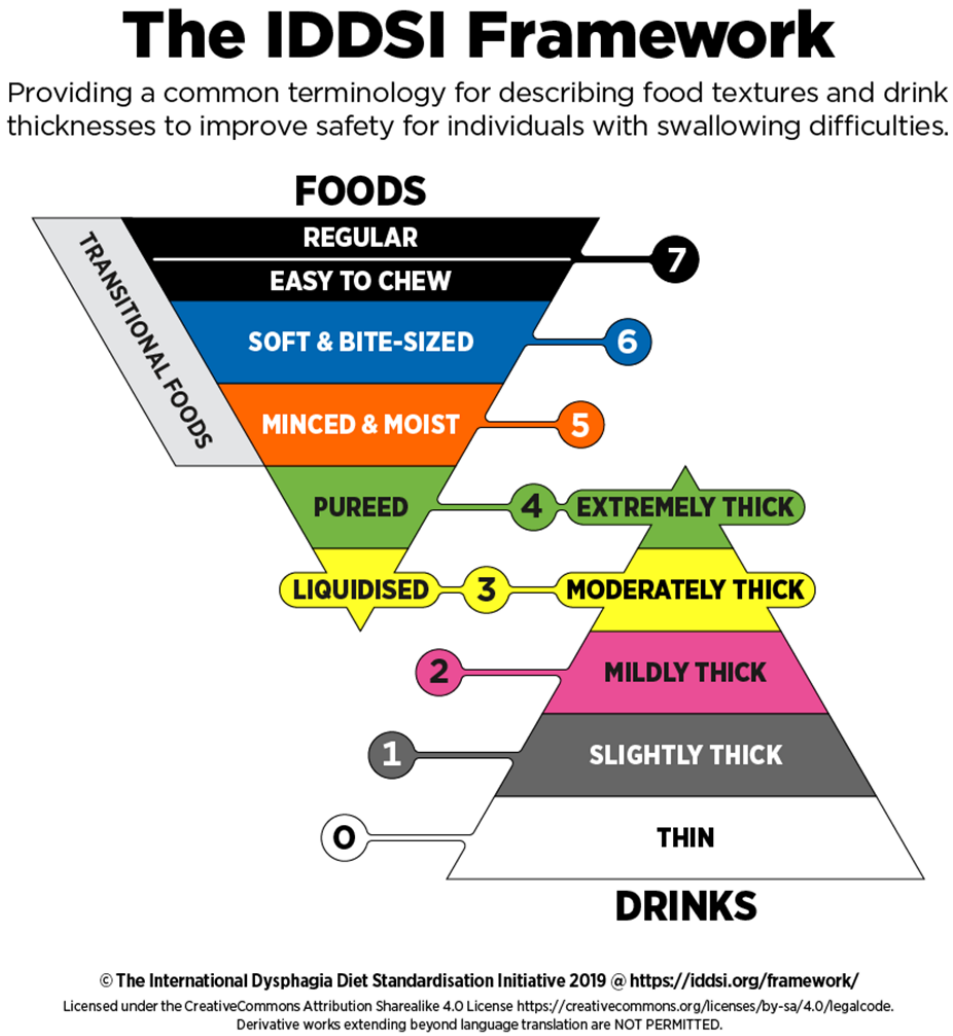
Management

- Nil by Mouth with tube feeding (PEG/PEJ/RIG/NGT)
- Oral trials
- Modified diet & fluids
  - IDDSI (International Dysphagia Diet Standardisation Initiative) levels
- Risk feeding

Risk feeding

- Term used to describe oral intake that is not consistent with SLT recommendations
  - Food and/or drink are being given with an acknowledged risk of aspiration
- Reasons for risk feeding:
  - The patient has an unsafe swallow which is unlikely to improve
  - The patient is at risk of aspiration on all food &/or fluid consistencies
  - The patient is declining modified food &/or fluid recommendations made by SLT
  - The MDT have made the decision the patient is not / no longer appropriate for tube feeding
  - The patient has capacity & does not wish to be tube fed OR the patient is already tube fed but requests or requires small amounts of oral intake for comfort/quality of life
- Capacity assessment necessary
  - Determine if patient understands risks of oral intake & can they communicate their wishes
  - If patient has capacity they can decide to eat/drink whatever they like
  - Reassess capacity at any time when there are concerns this may have changed e.g. during a period of infection
- Best interests
  - If patient doesn't have capacity a decision may be made in their best interests to continue with some level of oral intake for QoL, pleasure etc.
    - E.g. favourite flavour/snack/treat
  - Need to determine if anyone has PoA for health – if so they can make final decision
- Documentation is very important to ensure there is evidence of relevant conversations & decisions

IDDSI


The IDDSI Framework
Providing a common terminology for describing food textures and drink thicknesses to improve safety for individuals with swallowing difficulties.
FOODS
TRANSITIONAL FOODS
REGULAR
EASY TO CHEW
SOFT & BITE-SIZED
MINCED & MOIST
PUREED
LIQUIDISED
7
6
5
4
3
2
1
0
EXTREMELY THICK
MODERATELY THICK
MILDLY THICK
SLIGHTLY THICK
THIN
DRINKS
© The International Dysphagia Diet Standardisation Initiative 2019 @ https://iddsi.org/framework/
Licensed under the CreativeCommons Attribution Sharealike 4.0 License https://creativecommons.org/licenses/by-sa/4.0/legalcode.
Derivative works extending beyond language translation are NOT PERMITTED.

Food testing methods

LEVEL 4 - PUREED

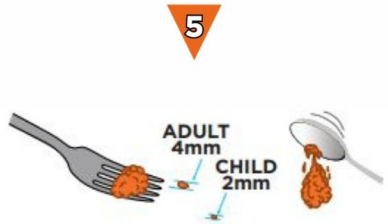
FORK DRIP TEST (Left)

- Fork sits in a mound on dinner fork
- Does NOT drip continuously through fork

SPOON TILT TEST (Right)

- Holds shape on spoon
- Food slides off spoon when tilted with little residue

LEVEL 5 - MINCED & MOIST



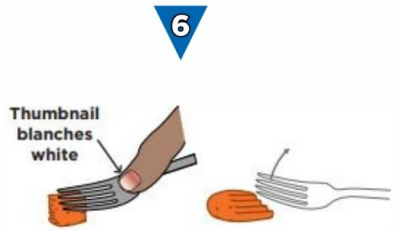
FORK PRESSURE TEST (Left)

- Food pieces fit between prongs of fork
- Food is mashed with light pressure from dinner fork

SPOON TILT TEST (Right)

- Holds shape on spoon
- Food slides off spoon when tilted with little residue

LEVEL 6 - SOFT & BITE-SIZED

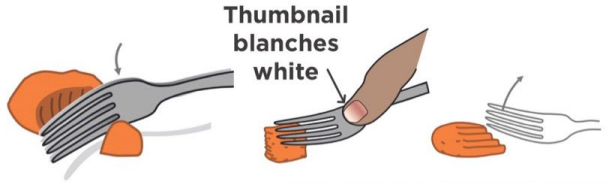


FORK/SPOON PRESSURE TEST

- Push down on piece of food with metal fork/spoon until thumb nail turns white
- Food must NOT return to original shape

IDDSI
International Dysphagia Diet Standardisation Initiative
www.iddsi.org

7 EASY TO CHEW



Must be able to break food apart easily with the side of a fork or spoon

Easy to Chew foods must break apart easily and pass Fork Pressure Test!

IDDSI Fork Pressure Test

To make sure the food is soft enough, press down on the fork until the thumbnail blanches to white, then lift the fork to see that the food is completely squashed and does not regain its shape

How to prepare thickened fluids

- **ALWAYS** use a shaker to make thickened fluids:
- Make up your patient's drink to 200mls in the shaker
  - If you need less than 200mls throw the excess away
  - If your patient needs more than 200mls then make a second drink of 200mls and use as much as necessary
- Add the recommended amount of Nutilis Clear powder
  - **ONLY USE** level scoops – slightly too much or too little can make a big difference to the thickness.
- Screw the lid on tightly then shake for 5- 10 seconds until the powder has dissolved
- Stir the drink gently for 1- 2 minutes – check it has reached the correct consistency
- Serve in a suitable cup/glass/mug

Practical – thickening fluids

01

In group

02

Make 4 drinks – 1 at each level of thickness

03

Try each one

- How do they look
- How do they taste
- How do they feel in the mouth

Mealtime safety

- Positioning
- Alertness
- Correct food & fluid consistencies
- Allow time to chew and swallow before giving the next sip/bite
- Alternate food & fluids

Ward staff role

- Turn on lights
- Reduce distractions (TV, radio)
- Glasses & hearing aids if needed
- Ensure dentures fitted (if needed)
- Don’t rush – feed at a pace suitable for each patient
- Be aware of patients likes & dislikes
- Consider level of support needed to eat & drink
  - Enable to be as independent as possible

Ward staff role

- Sit next to person & assist from eye level
- Identify food as you give it
- Make positive comments about the food
- Ensuring appropriate meals are provided
- Monitoring intake - completion of food/fluid charts
- Monitor oral hygiene
- Report any difficulties that you see or that patients report

Pink forms!

- Vital to be completed in full at every meal and snack time.
- SLT – allows prioritisation of patients who are having difficulties & identification of patients who are potentially ready for upgrade
- Dietitian – allows accurate monitoring of oral intake for decisions around tube feed levels and need for supplements
- Information gathering:
  - Circle the consistency of the food/fluid provided
  - Ask RN or CTL or SHCA with an extended role to check the consistency is correct & to sign the form
  - Write down what has been served
  - Tick the amount eaten/drunk
  - Comment on any difficulties the patient had

Oral hygiene

- Good oral hygiene is vital in all patients
  - Prevents aspiration pneumonia from residue left in the mouth or from infected saliva
- Cleans & moistens the mouth and teeth
- Prevents/reduces pain
- Reduces risk of gum & tooth infections
- Improves swallow function
- Need regular dental check ups
- Equipment
  - Toothbrush & toothpaste (non foaming if NBM)
  - Suction
  - Chlorhexidine gluconate gel/spray
  - Lip moisturiser

Oral hygiene

Mouth Care Advice

- **Use finger guard** to hold the mouth open—ensure the "wings" are pointing up and down

- **Wet the mouth** with a small soft toothbrush using clean water/saline **every 2-3 hours**.

- Apply a **water based moisturiser** to the lips and inside mouth **every 2-3 hours**

- Use **Chlorhexidine Gluconate gel/ spray** around gums, cheeks and tongue **twice a day**

- Brush teeth **twice a day** with anti-tartar toothpaste with 1450ppm sodium fluoride
  - ⇒ Use a **small soft dry** toothbrush
  - ⇒ Use **suction** regularly throughout oral care to remove any excess fluid/toothpaste

Assistive devices

- Increase independence with eating & drinking
  - Increased self esteem
- Increase safety at mealtimes
  - Improved swallow function if feeding themselves
- Improve mealtime experience for patient & staff

Assistive devices

- Nosey cups
  - Notch cut out for nose
  - Avoids tipping head back when drinking
- Double handled mugs
  - Prevents spills & provides more independence

Assistive devices

- Weighted/angled cutlery
  - Heavy built up handles for easy grasp
  - Reduces hand tremors
  - More food remains on the utensil

Assistive devices

- Non slip mats
  - Prevents plates from sliding
  - Promotes self-feeding

- Plate/bowl guards
  - Attach to rim of the plate/bowl
  - Prevents food being pushed off the side
  - Promotes self-feeding

Assistive devices

- Bolus control cups – Provale or Drink-Rite
  - Limit the amount a person can take with each sip
  - 5 or 10ml lids
- One way straws
  - Contain a valve to stop fluid falling back down the straw

Assistive devices

- Hydrant
  - Enables independent drinking throughout day
  - Can be hooked on wheelchair or bed

- Drink-up
  - Non-return valve

Devices

- IQoRO
  - Neuromuscular training device
  - 3 sessions per day 30 seconds each
  - Available on prescription

- Biozoon foams
  - allows patients who are unable to eat and drink normally the ability to taste again
  - the foam instantly disappears leaving nothing in the mouth and without the need to swallow

Any questions?