

## Day 2

# Respiratory, Cardiovascular, Dysphagia and Constipation



# Pre –Course questionnaire



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# Learning outcomes

## You will have knowledge of the Respiratory System

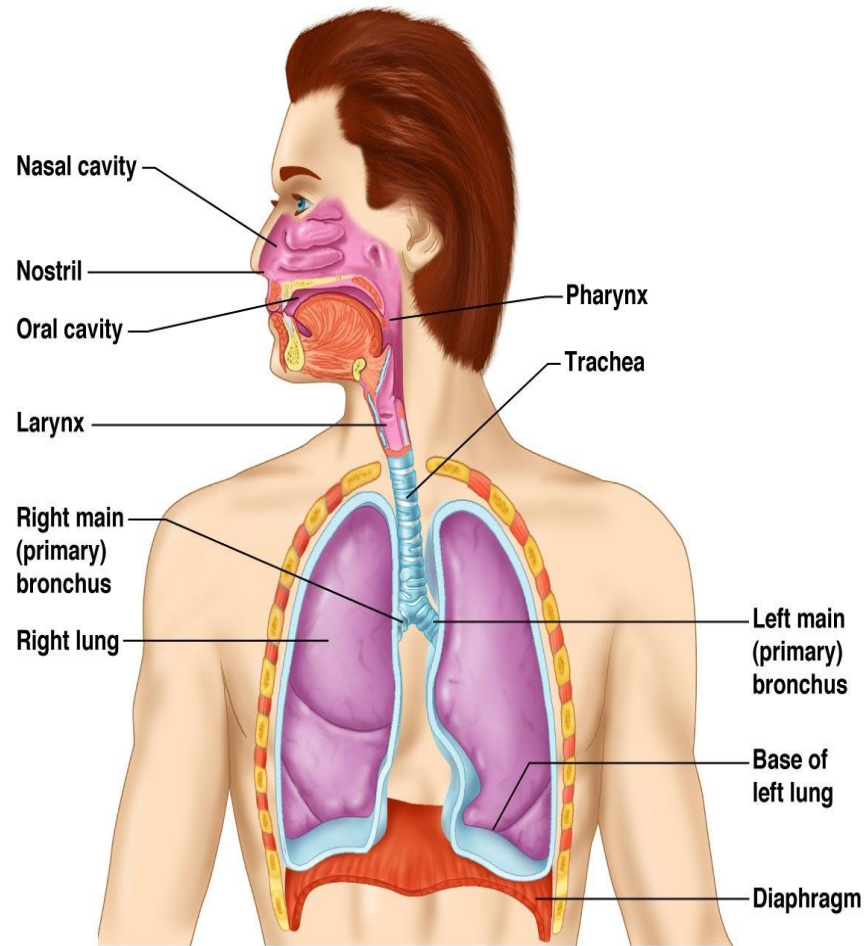
- ✓ Describe Anatomy
- ✓ Know anatomy normal abnormal processes of respiration.
- ✓ Understand the effects of Smoking,
- ✓ Areas covered
  - ❖ Asthma
  - ❖ COPD
  - ❖ Infection – ‘simple’, TB, Covid-19
  - ❖ Pulmonary embolus
  - ❖ Pulmonary oedema
  - ❖ Respiratory depression
  - ❖ Obesity hypoventilation



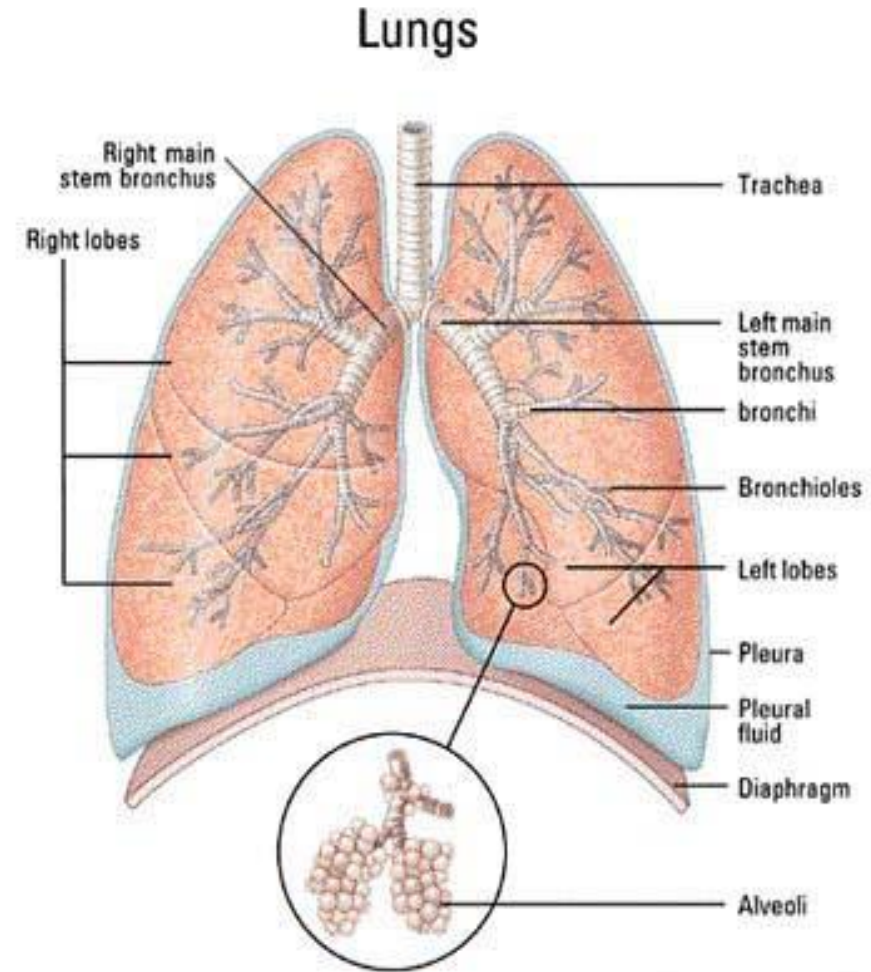
- Terence physical appearance was observed not to be alright during medication round around 0950. He was restless in bed and very confused. Vital observations were taken and recorded as BP-85/54, P-72, RR-22, 02SATS-92%, T-35.8 and BM-8.7. (NEWS2 = 11, 2 red scores).
- At 13:45 Terence appeared to be deteriorating; his blood pressure continues to go lower the last Vital sign before taken to A&E reads; BP- 78/52, P-84, RR- 22, 02SATS-89% , T-36.9. He appeared very drowsy and confused, with cracking sound on his chest and refusing to eat but responding



# Respiratory System



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Primary function is to obtain oxygen for use by body's cells & eliminate carbon dioxide that cells produce

Includes respiratory airways leading into (& out of) lungs plus the lungs themselves



Breathing is a largely unconscious process, requiring the contraction of muscles.

The primary muscles of respiration:

- ❖ intercostal muscles (located between the ribs)
- ❖ the diaphragm (a sheet of muscle located between the thoracic & abdominal cavities)

Your respiratory rate automatically changes – when active/anxious/distressed/physically unwell it goes up. When less active or sleeping or brain assaulted (head injury, drugs, alcohol), it goes down



Respiration dependent on brain function and chemoreceptors (chemical sensors) located in the aorta, carotid arteries and brain –  
Contents of the blood, pH, oxygen & carbon dioxide levels, hormones constantly monitored and reacted to





# Lungs are the organ of breathing

anything affecting the lungs will affect breathing, respiration, O<sub>2</sub> and CO<sub>2</sub> levels and cellular health of whole body

Lung disease one of the most common medical conditions in the world.

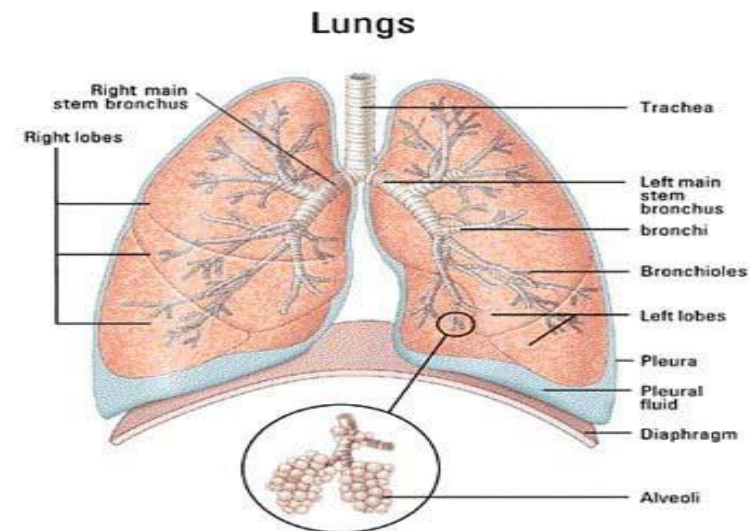
**2 main causes :**  
**Smoking infections**

**3 main areas of lung affected:**

**Airways**

**alveoli**

**blood vessels**



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Smoking is the primary cause of preventable morbidity and premature death, and kills about half of all lifetime users

Smoking is the major preventable risk factor for COPD. Dissuading people from starting to smoke and helping people to quit remain critical.

Tobacco kills about 10 million people worldwide every year. UK plan is for UK to be tobacco-free by 2025



# What is normal?

- ❖ Respiratory rates: 12 – 20 breaths per minute
- ❖ Regular breathing pattern, normal depth & frequency without accessory muscles
- ❖ Peripheral Oxygen saturation (SpO<sub>2</sub>) : 96% or above (non COPD). 88-92% (in COPD patients) as per NEWS2.
- ❖ NICE guideline for known Non COPD Covid 19 positive patients is to escalate if SpO<sub>2</sub> is below 94%
- ❖ Patients are:
  - Well perfused
  - Able to speak in full sentences
  - Look comfortable
  - Can cough and clear secretions



EARLY SIGNS	INTERMEDIATE SIGNS	LATE SIGNS
Respiratory Rate > 18-22bpm	Respiratory Rate >24bpm	Reduced Respiratory Rate
Shallow rapid breaths	Unable to talk in sentences	Abnormal breathing pattern
SaO <sub>2</sub> <94% on air	SaO <sub>2</sub> < 91% on air or <94% on oxygen	< 90% SaO <sub>2</sub>
Using accessory muscles	Using accessory muscles i.e. breathing looks like hard work, abdominal breathing	Patient tiring or fatigued
Distressed or anxious	Restlessness or panic	Altered level of consciousness (Confusion, drowsiness or unresponsive)
Pale  A struggle to clear their own phlegm/sputum  Sitting forward bracing themselves (tripoding)	Pursing their lips or flaring their nostrils when breathing  New sounds such as wheezing, grunting or stridor	Cyanosis Pale/grey/blue lips, mucous membranes or nail beds. Cyanosis is a late sign. (For people with a darker skin tone look at their tongue to assess for cyanosis)



**PLEASE NOTE:** The higher the oxygen requirement needed to keep SaO<sub>2</sub> >94% the sicker the patient.

# Break 10 mins



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# Key asthma statistics

- ❖ The prevalence of asthma in England is among the highest in the world, approx 6% of the English population/ 3.5-4 million and rising (especially in children)
- ❖ Premature mortality from asthma was 1.5 times as high in the UK than in the rest of Europe; 3 deaths per day in UK (NHS 2019)
- ❖ **1 in 6 treated in hospital for asthma attack will need hospital care again within 2 weeks**
- ❖ **90% of deaths are associated with preventable factors.**
- ❖ Asthma is responsible for large numbers of attendances to Emergency Departments and admissions, the majority of which are emergency admissions, **70% of which may have been preventable with appropriate early interventions**
- ❖ **despite the UK leading the world in guidelines for asthma they have been poorly implemented and people with asthma do not receive evidence-based interventions or individual action plans, which are known to impact positively on outcomes**



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❖ **People with asthma should have a YEARLY REVIEW**

airways inflamed restricting airflow and causing spasm, cough, expiratory wheeze, chest tightness, shortness of breath. Allergies, infections or pollution can trigger asthma's symptoms. Can be life-threatening. **Reversible**

## Treatment (refer to NICE guidance)

**Aim is for patient to be free of symptoms and lead normal, active life**

Poor control:

3 or more days a week with symptoms **or**

3 or more days a week with required use of a SABA (Short-acting  $\beta$ -agonist) for symptomatic relief **or** 1 or more nights a week with awakening due to asthma.

**Most asthma attacks severe enough to require hospitalisation develop over a period of six hours or more**



# What will you do ?



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Many deaths from asthma are preventable. Delay can be fatal. Factors leading to poor outcome include:

- Clinical staff failing to assess severity by objective measurement
- Patients or relatives failing to appreciate severity
- Under use of corticosteroids

Regard each emergency asthma consultation as for acute severe asthma until shown otherwise.

Assess and record:

- Peak expiratory flow (PEF)
- Symptoms and response to self treatment
- Heart and respiratory rates
- Oxygen saturation (by pulse oximetry)

**Caution:** Patients with severe or life-threatening attacks may not be distressed and may not have all the abnormalities listed below. The presence of any should alert the doctor.

Moderate asthma

Acute severe asthma

Life-threatening asthma

**INITIAL ASSESSMENT**

PEF >50–75% best or predicted

PEF 33–50% best or predicted

PEF <33% best or predicted

**FURTHER ASSESSMENT**

- SpO<sub>2</sub> ≥92%
- Speech normal
- Respiration <25 breaths/min
- Pulse <110 beats/min

- SpO<sub>2</sub> ≥92%
- Can't complete sentences
- Respiration ≥25 breaths/min
- Pulse ≥110 beats/min

- SpO<sub>2</sub> <92%
- Silent chest, cyanosis or poor respiratory effort
- Arrhythmia or hypotension
- Exhaustion, altered consciousness

**MANAGEMENT**

Treat at home or in surgery and ASSESS RESPONSE TO TREATMENT

Consider admission

Arrange immediate ADMISSION

**TREATMENT**

- β<sub>2</sub> bronchodilator:
  - via spacer\*
- If no improvement:
  - via nebuliser (preferably oxygen-driven), salbutamol 5 mg
- Give prednisolone 40–50 mg
- Continue or increase usual treatment

- Oxygen to maintain SpO<sub>2</sub> 94–98% if available
- β<sub>2</sub> bronchodilator:
  - via nebuliser (preferably oxygen-driven), salbutamol 5 mg
  - or if nebuliser not available, via spacer\*

- Oxygen to maintain SpO<sub>2</sub> 94–98%
- β<sub>2</sub> bronchodilator with ipratropium:
  - via nebuliser (preferably oxygen-driven), salbutamol 5 mg and ipratropium 0.5mg
  - or if nebuliser and ipratropium not available, β<sub>2</sub> bronchodilator via spacer\*

- Exhaustion, altered consciousness

## MANAGEMENT

Treat at home or in surgery and  
**ASSESS RESPONSE TO TREATMENT**

Consider admission

Arrange immediate **ADMISSION**

## TREATMENT

- $\beta_2$  bronchodilator:
    - via spacer\*
- If no improvement:
- via nebuliser (preferably oxygen-driven), salbutamol 5 mg
  - Give prednisolone 40–50 mg
  - Continue or increase usual treatment

If good response to first treatment (symptoms improved, respiration and pulse settling and PEF >50%) continue or increase usual treatment and continue prednisolone

- Oxygen to maintain SpO<sub>2</sub> 94–98% if available
- $\beta_2$  bronchodilator:
  - via nebuliser (preferably oxygen-driven), salbutamol 5 mg
  - or if nebuliser not available, via spacer\*
- Prednisolone 40–50 mg or IV hydrocortisone 100 mg
- **If no response in acute severe asthma: ADMIT**

- Oxygen to maintain SpO<sub>2</sub> 94–98%
- $\beta_2$  bronchodilator with ipratropium:
  - via nebuliser (preferably oxygen-driven), salbutamol 5 mg and ipratropium 0.5mg
  - or if nebuliser and ipratropium not available,  $\beta_2$  bronchodilator via spacer\*
- Prednisolone 40–50 mg or IV hydrocortisone 100 mg immediately

### Admit to hospital if any:

- Life-threatening features
- Features of acute severe asthma present after initial treatment
- Previous near-fatal asthma

Lower threshold for admission if afternoon or evening attack, recent nocturnal symptoms or hospital admission, previous severe attacks, patient unable to assess own condition, or concern over social circumstances

### If admitting the patient to hospital:

- Stay with patient until ambulance arrives
- Send written assessment and referral details to hospital
- $\beta_2$  bronchodilator via oxygen-driven **nebuliser in ambulance**

### Follow up after treatment or discharge from hospital:

- Continue prednisolone until recovery (minimum 5 days)
- **GP review within 2 working days**
- Monitor symptoms and PEF
- Check inhaler technique
- **Written asthma action plan**
- Modify treatment according to guidelines for chronic persistent asthma

# Life-threatening acute asthma

Any **one** of the following, in a patient with severe asthma:

- ✓ Peak flow < 33% best or predicted
- ✓ Oxygen saturation (SpO<sub>2</sub>) < 92%
- ✓ Silent chest
- ✓ Cyanosis
- ✓ Poor respiratory effort
- ✓ Arrhythmia
- ✓ Exhaustion
- ✓ Altered conscious level
- ✓ Hypotension



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- ❖ **COPD is extremely common cause of emergency admission to hospital and is one of the most costly diseases in terms of acute hospital care in England. 15% of those admitted to hospital die within 3 months.**
- ❖ **40% of people with COPD also have heart disease, and significant numbers have depression and/or anxiety disorder.**
- ❖ **It is among the top killer diseases in the UK. (heart disease, stroke, cancer, lung and liver disease, sepsis)**
- ❖ **There are around 835,000 people currently diagnosed with COPD in the UK and an estimated 2,200,000 people with COPD who remain undiagnosed, which is equivalent to 13% of the population of England aged 35 and over**



([COPD](#)): Chronic obstructive pulmonary disease

Lung conditions defined by an **inability to exhale normally**, which causes difficulty breathing. Inflamed, narrowed airways, permanent alveoli damage. Shortness of breath on exertion, difficulty breathing out, persistent cough with phlegm, frequent chest infections, wheezing. **Not reversible** – need to manage symptoms and slow progression

**PINK PUFFER (emphysema)/ BLUE BLOATER (chronic bronchitis)**

<b>Pink Puffer Emphysema</b>	<b>Blue Bloater Chronic Bronchitis</b>
<p>Lung damage allows air to be trapped in the lungs in this form of COPD. Difficulty blowing air out is its hallmark.</p> <p>Difficulty breathing, quiet chest, mild to moderate hypoxia, CO2 relatively normal, thin build</p>	<p>Characterized by chronic productive cough</p> <p>white/ pale yellow sputum, wheeze, right heart failure, peripheral oedema, marked hypoxia, CO2 retention, stocky build</p>



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# COPD exacerbation

worsening breathlessness, cough, increased sputum production and change in sputum colour. The change in these symptoms often necessitates a change in medication.

Bronchodilators, steroids(long term steroids can cause diabetes).

Exacerbation usually caused by chest infection so antibiotics added, sputum specimen only if antibiotics not working - monitor amount and colour of sputum to check antibiotics working

CPAP significantly reduces mortality in people with COPD who develop type 2 respiratory Failure

Oxygen: High dose oxygen is contraindicated - can trigger life threatening respiratory failure.

Substantial evidence that oxygen overdosing & toxicity is common in acute exacerbations of COPD; higher death rates with high oxygen (general rule -28% oxygen via mask or 2L/min nasally – may increase gradually but watch patient for sleepiness (oxygen narcosis) and reduce back if necessary.

Aim for sats 88-92% Vital signs, NEWS2 - Scale 2 for Sats



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Reassurance



Most people with COPD report breathlessness as the major symptom affecting their life, however COPD is often associated with other conditions that also require assessment and effective interventions - 40% have heart disease, 10% have diabetes and significant numbers have high blood pressure, and osteoporosis.

With the right care and treatment there is the potential to slow down the progressive nature of COPD (unlike asthma it is not reversible)



# Chest infection/Pneumonia /Covid

**An infection of the alveoli, usually by bacteria.**

Cough, yellow or green sputum, shortness of breath, rapid shallow breathing, wheeze, rattle/bubbly, fever, tachycardia, chest pain/tightness, altered mental state, disorientation/confusion

Sputum specimen, antibiotics, Vital signs, NEWS2, ensure adequate fluid & diet intake, monitor sputum colour and amount to ensure antibiotics working

**WATCH FOR SEPSIS!!**

## Tuberculosis:

**A slowly progressive pneumonia caused by the bacteria *Mycobacterium tuberculosis*.**  
Notifiable disease

Persistent cough lasting more than 3 weeks, chest pain, sputum with blood ('rusty sputum'), weakness and fatigue, weight loss, night sweats, anorexia, chills and fever

TB therapy, infection control (isolation), Vital signs, NEWS2, skin colour, ensure adequate fluid intake and food intake, monitor sputum



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**WATCH FOR SEPSIS!!**

- ❖ Mild form of the disease include symptoms such as: fever, cough, sore throat, fatigue and aching muscles, sudden loss of smell/taste
- ❖ Some develop more serious symptoms: Respiratory failure, pneumonia or sepsis
- ❖ A small number of patients will develop Acute Respiratory Distress Syndrome (ARDS) and multiple organ failure
- ❖ Have a very low threshold for escalation to expert help in any suspected Covid 19 patient with reduced saturations and increased work of breathing or breathlessness- irrespective of NEWS2 score
- ❖ Always check DNAR status and advanced directives and signpost to specialist palliative care services as appropriate
- ❖ Highly contagious - PPE



# Pulmonary Embolus

4 types:

- ❖ Blood (often following DVT from inactivity/bed rest/rapid tranquilisation, largely preventable - 25,000 UK deaths per year)
- ❖ fat (following fracture or ortho surgery)
- ❖ air
- ❖ amniotic fluid

clot breaks off, travels to the heart and is pumped to lungs where it lodges in artery, restricts blood flow /causes infarct.

- ❖ Severity of symptoms depends on size of clot:
- ❖ Difficulty breathing, rapid breaths, hypoxia
- ❖ Pleuritic and/or retrosternal chest pain
- ❖ Haemoptysis, cough
- ❖ Dizziness, anxiety, agitation
- ❖ Tachycardia, hypotension
- ❖ High temperature
- ❖ Loss of consciousness, collapse

**Medical Emergency – call 999**

**NICE guidance VTE risk assessment for all in-patients**



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# Pulmonary Embolus

VTE risk assessment & prophylaxis

*Observe for limping, pain in calf, swollen, red, hot (particularly following seclusion/ rapid tranq – risk factors: immobility, reduced fluid intake*

## **Medical Emergency – call 999**

100% oxygen

Monitor vital signs & NEWS2 closely – high risk of cardio-respiratory arrest

Analgesia (usually morphine)

IV access

Enoxaparin, warfarin

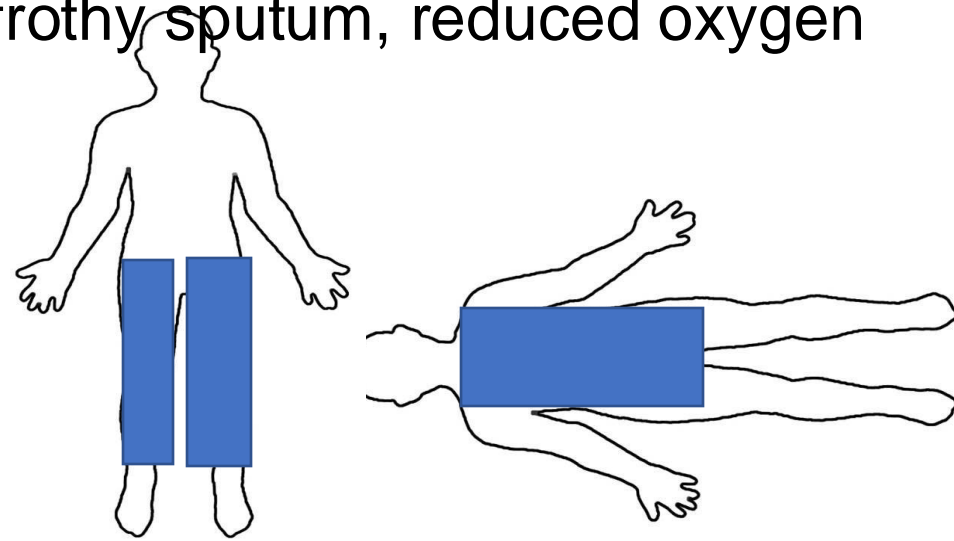


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# Pulmonary Oedema:

Fluid congestion in and around lungs and alveoli due to heart failure.  
Early signs: slight increase in pulse, slight saturation decrease, slight breathlessness on rest or exertion, harder to breathe when laying flat (increase in pillows).

Difficulty breathing, feels like suffocating/drowning, worse if laid flat, nocturnal dyspnoea, cough, wheezing, bubbling, crackles, +/- generalised oedema, reduced mental alertness, blue grey skin, hypotension, tachycardia/palpitations, sweaty, pink frothy sputum, reduced oxygen saturation



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100% oxygen, Call ambulance – needs cardiologist!  
Vital signs & NEWS2, constant observation  
If BP >90mmHg systolic, give 2 puffs GTN  
Furosemide, heart failure treatment





## Obesity hypoventilation syndrome

Extra weight on chest, neck and abdomen makes chest expansion difficult and predisposes to airway obstruction, poor gas exchange, infection

Weight loss, exercise programme, positioning to prevent obstruction, BiPAP



# Other causes of respiratory problems:

- ❖ Head injury
  - ❖ Drugs
  - ❖ Alcohol
  - ❖ Sedation and tranquilisation (respiratory depression, VTE, dehydration)
- 
- ❖ Opiates
  - ❖ Benzodiazepines
  - ❖ Anti-psychotics
  - ❖ Anti-depressants
  - ❖ Beta-Blockers, Aspirin and NSAID can trigger asthma
  - ❖ Oxygen in COPD patients who retain CO<sub>2</sub> - will induce oxygen narcosis and respiratory arrest



Respiratory rate should be measured and documented whenever any other vital sign measurements are performed (National Confidential Enquiry into Patient Outcome and Death, 2005)

"Monitoring the respiratory rate is essential, as it may predict cardiorespiratory arrest" (Resuscitation Council (UK))

impaired lung function is an independent predictor of mortality from all causes (NICE 2019)

Beware Respiratory rate .....

above 20 – pay attention, what could this be?, above 24 considered critical  
below 12 – pay attention, what could this be?, Below 10 considered critical,

At 8 requires intubation!



If you haven't checked respiratory pattern,  
you haven't done the obs!

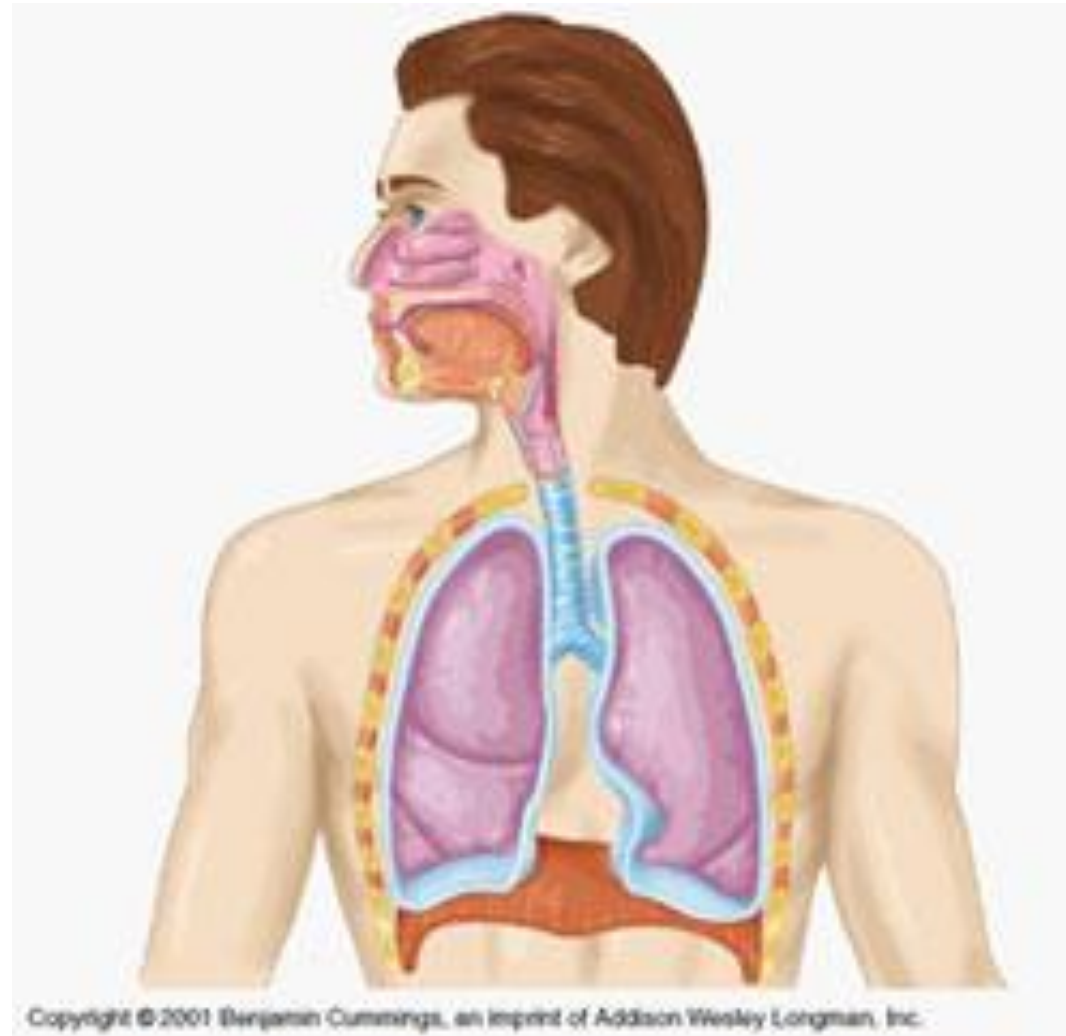
It is more than just a number .....

rate, effort, sound, skin colour, conscious level



# Causes of Breathing problems

- Asthma
- COPD
- Chest infection, pneumonia, TB, Covid-19
- Pulmonary embolus
- Pulmonary oedema
- Trauma
- Obesity hypoventilation



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# Break 5 Minutes



# Cardiovascular System

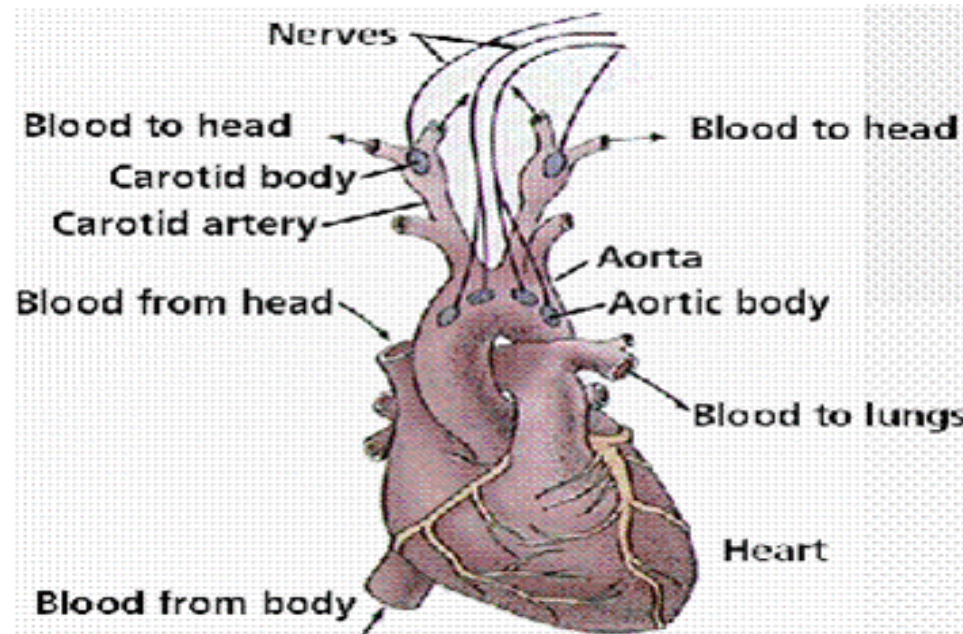
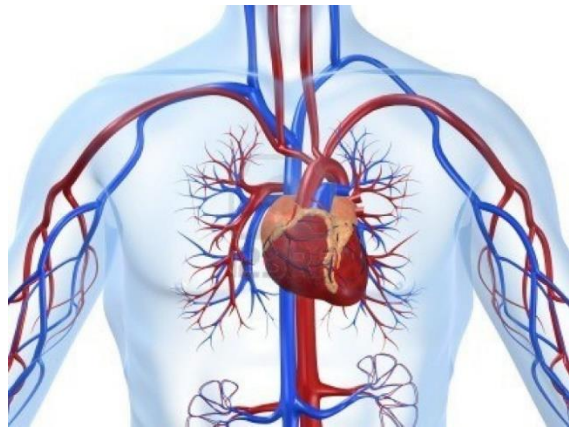


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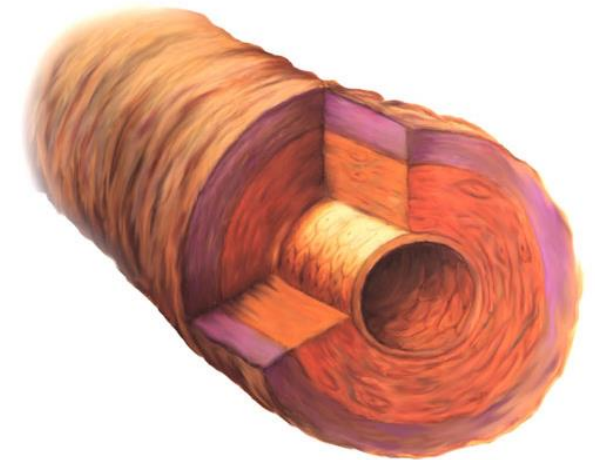
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# Cardiovascular system comprises of

## The Heart



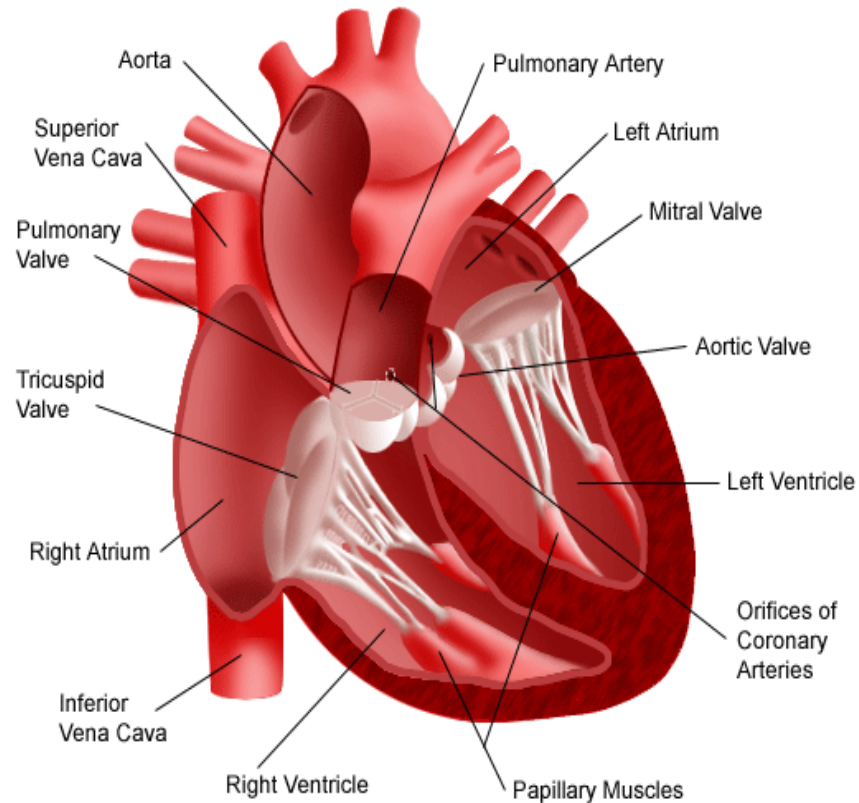
## The Blood Vessels



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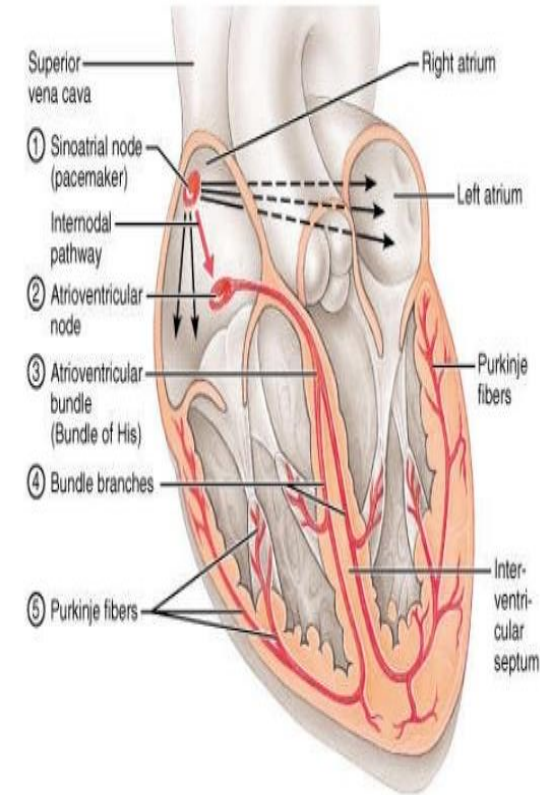


### Interior View of the Heart



### Conducting System

- Network of specialized tissue that stimulates contraction
- Modified cardiac myocytes
- The heart can contract without any innervation



## Cardio = Heart

The heart is about the size of a clenched fist and is located in the mediastinum and the coverings of the heart are.

The Pericardium- A thin double layered sack that surrounds the heart. The layers of the heart wall are

The Epicardium-The outer layer

The Myocardium- The middle layer

The Endocardium- The inner layer

The heart is divided into two sides. Right and left which are separated by a muscle called the septum. The septum ensures that the oxygen rich blood from the left side of the heart does not mix with oxygen depleted blood on the right side. Each side of the heart is divided into two chambers. The upper chambers on each side are the left and right atrium. The lower chambers are the left and right ventricles .



# Cardiovascular System

## Vascular= Vessels

Blood vessels form a circuit away from and then back to the heart. There are two circuits. The pulmonary circuit and the systemic circuit.

The pulmonary circuit transports blood from the right side of the heart to the alveoli of the lungs for gas exchange and back to the left side of the heart.

The systemic circuit transports blood from the left side of the heart to the systemic cells of the body for nutrient and gas exchange and back to the right side of the heart

Composed of arteries, capillaries, and veins. Arteries convey blood away from the heart. Veins convey blood back to the heart.

Capillaries are permeable, microscopic vessels that serve as sites of exchange between the blood and body tissues. Where oxygen and nutrients enter the tissues and where cellular waste, and carbon dioxide enters the blood.



# Cardiovascular System

## Blood Vessels of the Heart.

**Superior vena cava**-Returns oxygen depleted blood to the right atrium the thoracic organs, head, neck and both arms.

**Inferior vena cava**-Returns oxygen depleted blood to the right atrium from the rest of the body.

**Pulmonary artery. Divides into the right and left pulmonary artery.** Takes oxygen depleted blood from the right ventricle to the lungs.

**Pulmonary veins. Two from right lung and two from left lung.** Returns oxygen rich blood from the lungs to the left atrium.

**Aorta.** Takes oxygen rich blood from the left ventricle to the whole body.

**Coronary arteries.** Two main arteries left and right. Take oxygen rich blood to the heart tissues.

**Coronary veins.** Return oxygen depleted blood from the heart tissues to the right atrium via the coronary sinus.



# Cardiovascular System

## Blood Vessels

Blood vessels have muscle fibres that allow them to relax or contract.

This is regulated by sympathetic vasomotor nerve fibres of the autonomic nervous system and a whole series of chemicals. The neural centre that oversees changes in the diameter of blood vessels is the vasomotor centre. Vasomotor activity is regulated by baroreceptors that respond to arterial pressure and stretch. Chemoreceptors that respond to changes of oxygen and carbon dioxide, higher brain centres i.e. Hypothalamus, and certain hormones, such as antidiuretic hormone (ADH).

Depending on the body's needs at any instant. Vasodilation the widening of blood vessels or vasoconstriction the narrowing of blood vessel walls can be achieved.

Vasodilation lowers blood pressure.

Vasoconstriction maintains or increases blood pressure.

Some medications lower blood pressure such as Angiotensin-converting enzyme inhibitors.

Some medications can increase blood pressure such as Selective serotonin reuptake inhibitors and studies have shown that Olanzapine and Risperidone can raise blood pressure within 3 days of initiating treatment.



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# Cardiovascular System

## Blood

The function of cardiovascular system is to transport and distribute blood throughout the body. Blood delivers oxygen from the lungs and nutrients from the digestive tract to all the body's cells.

Blood transports metabolic waste from cells to elimination sites. To the lungs for elimination of carbon dioxide and the kidneys for the removal nitrogenous waste in urine.

Blood transports hormones from endocrine organs to their target organs.

It's a constant cycle, with each heartbeat. Blood is pumped through the blood vessels to the tissues and organs where it gives up its oxygen and nutrients and then returns to the heart to be replenished.

The average volume of blood in an adult is 5 litres. Males tend to have more blood 5 to 6 litres because of their larger size. Compared to females, 4 to 5 litres.



# Function of the cardiovascular system

- ❖ Transports and distributes blood throughout the body to:
- ❖ Deliver materials oxygen, nutrients and hormones to the organs.
- ❖ Carries away waste products for excretion
- ❖ A constant cycle, with each heartbeat, blood is pumped through the blood vessels (a closed system of tubes) to the tissues/organs, gives up its oxygen and nutrients and then returns blood to the heart to replenish



- Blood vessels have muscle fibres that allow them to relax or contract in order to regulate blood pressure
- Blood vessels are linked to the nervous system and so respond to stimuli/stress/ adrenaline/ drugs
- Relaxation of the muscle lowers blood pressure Constriction of the muscle raises blood pressure
- Some medicines increase blood pressure, some lower it





# Pulse and blood pressure critically linked!

Circulation is totally dependent upon heart rate and the amount circulated in 1 min  
The heart fills with blood at rest (around 70mls per beat) i.e. when not beating  
It is programmed to provide sufficient blood supply to the body when beating between 60 and 100 beats per minute. If beating faster there is not enough time to fill up, if beating slower then not enough going round in 1 minute to maintain circulation

Blood pressure is dependent upon the amount of blood being pumped around

## CARDIAC OUTPUT:

Normal 70 beats/min x 70 mls = 4900mls/minute

50 beats/min x 70 mls = 3500ml/min (1450 mls loss)

45 beats/min x 70mls = 3150mls/min (1750 mls loss!)

120 beats/min x 30mls = 3600mls/min (1300 mls loss)

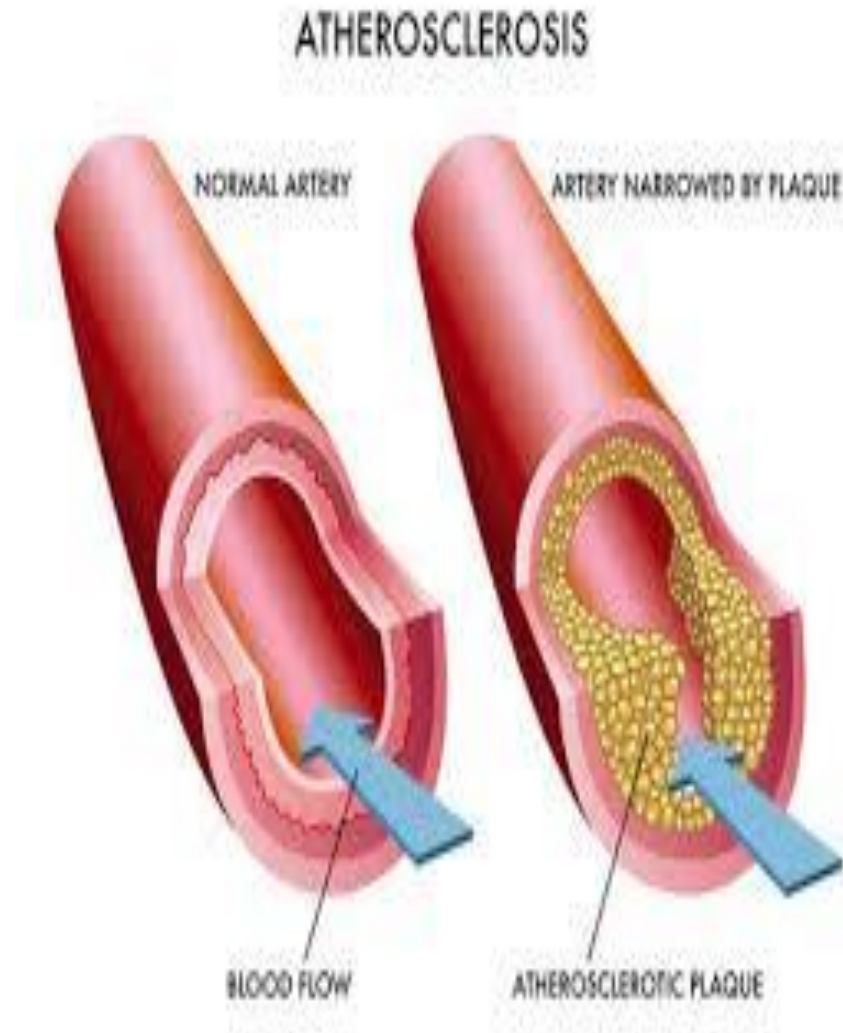
140 beats/min x 20 mls = 2800mls/min (2100mls loss!)



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# Arteriosclerosis/Atherosclerosis

- Thickening or hardening of the arteries
- Progressive disease that evolves from deposits in the lining of large arteries:
  - Lipids
  - Cellular debris
  - Calcium
  - Fibrin
- Compounded by an inflammatory response
- Lead to “plaques forming in the artery” which narrow the lumen and decrease blood flow and make blood vessels non-elastic and brittle



# Risk Factors for Atherosclerotic Disease (hardening of the arteries)

- Family History
- Diabetes Mellitus/ Obesity
  - Increased risk with psychotropic drugs
- Smoking
- Hypertension (high blood pressure)
- High cholesterol
  - Increased risk in psychotropic drugs
- Sedentary lifestyle



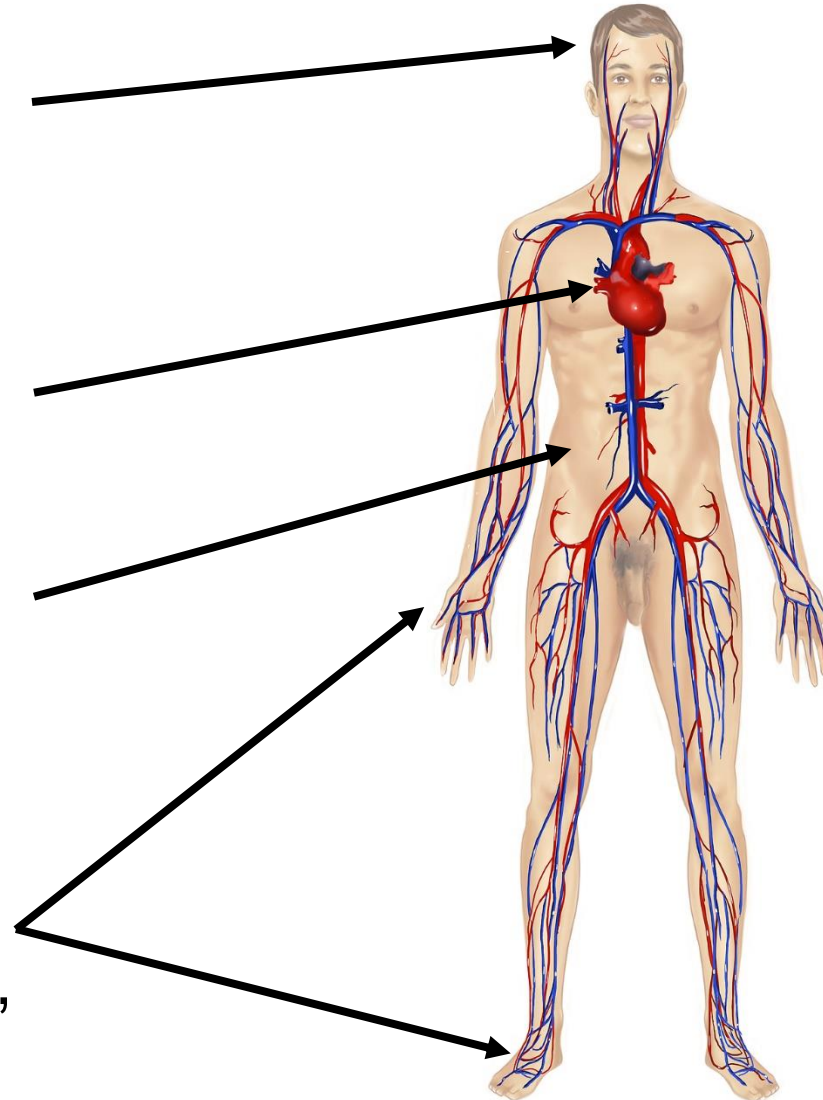
# Arteriosclerosis

## One disease process many Chronic

Cerebrovascular  
accident (stroke)

Heart Attack (MI),  
heart enlargement  
and Heart Failure

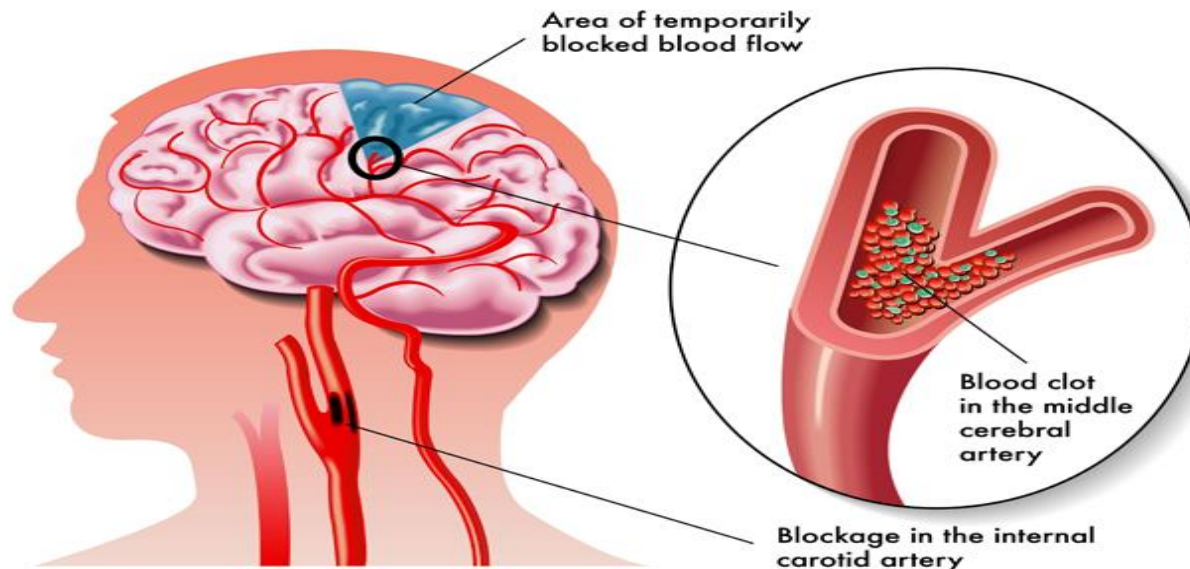
High blood  
pressure and  
kidney failure  
Poor circulation  
(pain, poor  
mobility, leg ulcers,  
gangrene)



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# Stroke:

**F** face  
**A** arm/leg  
**S** speech  
**T** Time



students.washington.edu





**East London**  
NHS Foundation Trust

# Break 5 Minutes



# Common Heart Conditions

- Coronary Heart Disease- Angina and heart attack
- Myocarditis (inflammation of the heart)
- Cardiomyopathy (heart enlargement and heart failure)
- Endocarditis (infection)
- Conduction problems and arrhythmia (Abnormal and dangerous heart beat)



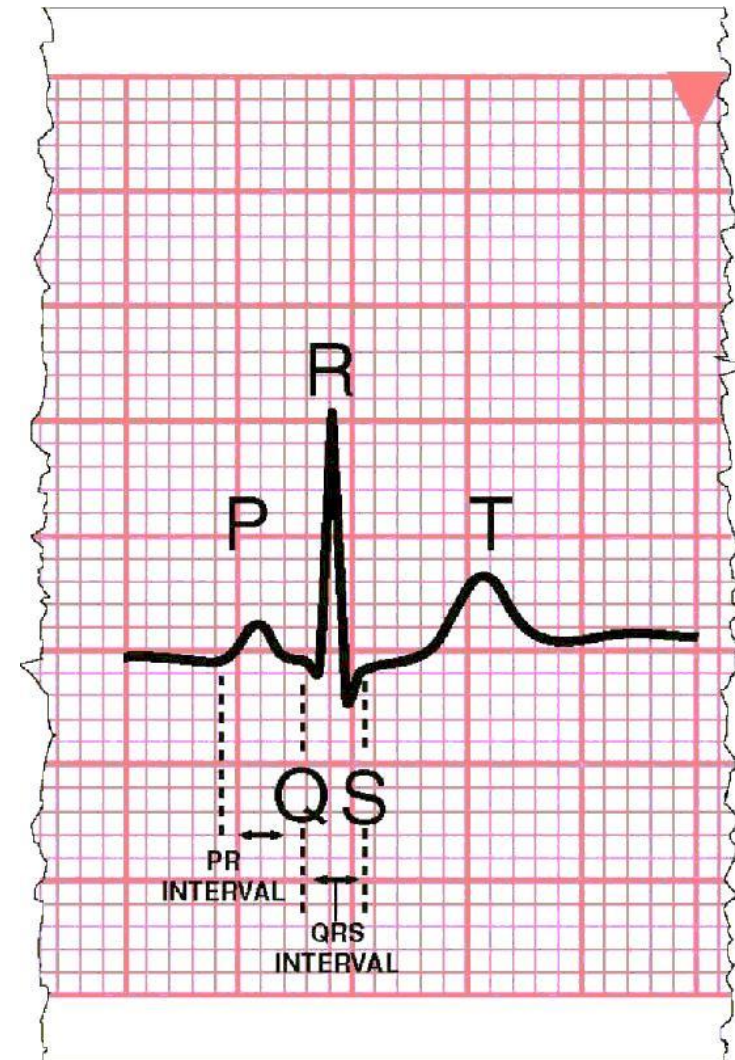
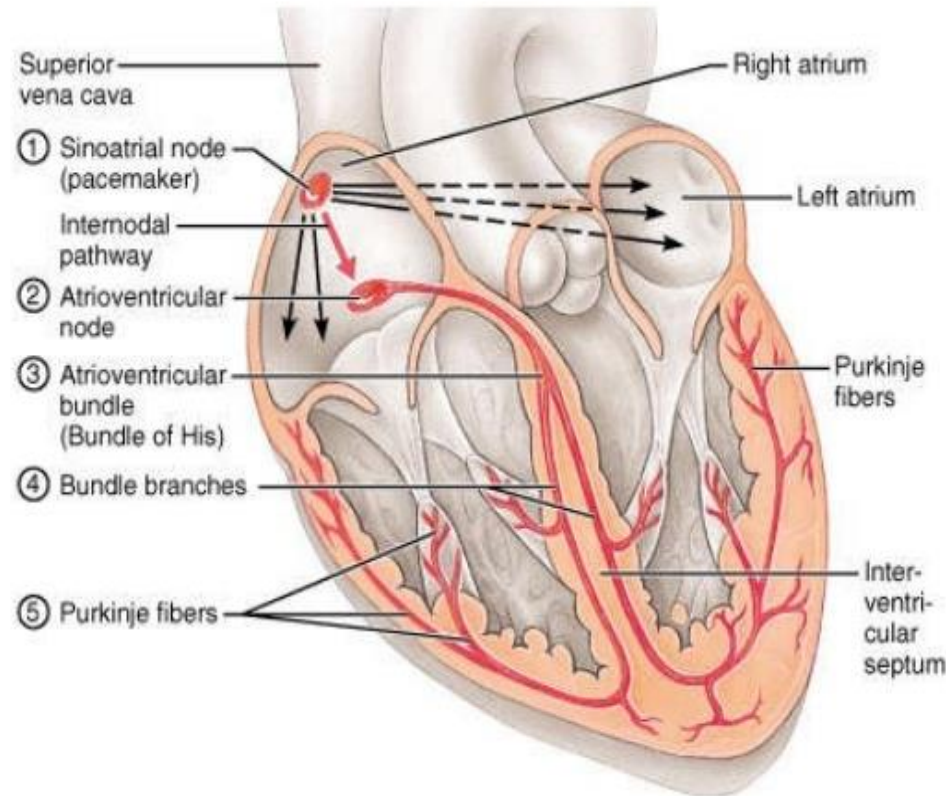
- Blood supply needed to give the heart itself oxygen and nutrients
- Muscle needed for pumping
- Electrics needed to make the heart pump
- Muscle damage = poor pumping & lack of oxygen/nutrients to the rest of the body
- Electrical damage = can not pump properly (think damaged electrical cable to your phone/lap top)





# Conducting System

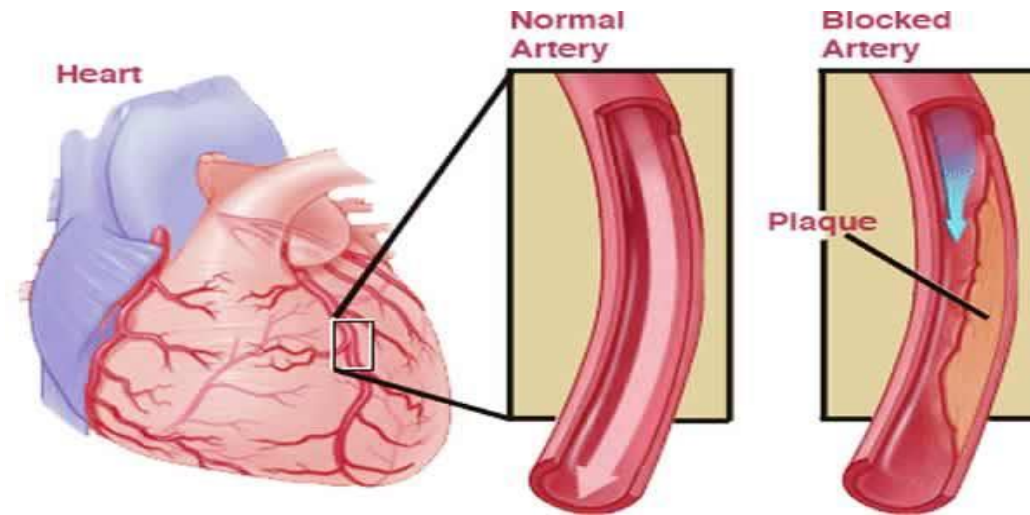
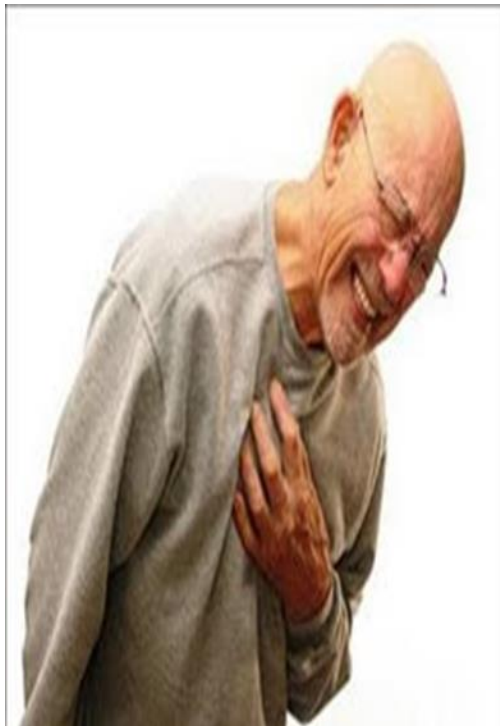
- Network of specialized tissue that stimulates contraction
- Modified cardiac myocytes
- The heart can contract without any innervation



# Angina and heart attack

Coronary arteries are seriously narrowed or completely blocked.

The heart gets little or no oxygen and starts to die



Chest pain - may radiate to the arm, jaw, shoulder blades, described as the worst pain ever experienced, feels like a severe pressure on their chest- like a belt tightening around the chest, difficult to point to- covers a large area, not affected by breathing or movement

Shortness of breath      Blue/grey skin  
Cold, clammy skin  
Abnormal heart rate & ECG – fast/slow/irregular  
Low urine output

999 medical emergency -  
oxygen, aspirin, morphine, vital signs, ECG



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# Myocarditis

- Inflammation of the heart muscle that causes injury to the heart muscle and even death of it
- Caused by:
  - Medication- Clozapine, Cocaine
  - Viral- Mumps, Rubella, HIV
  - Bacterial Infection- TB, Tetanus,
  - Fungal/Parasitic
  - Pregnancy-during last month or 5 months post partum
  - Autoimmune



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# Clozapine and Myocarditis/ Cardiomyopathy

- Clozapine has caused fatal Myocarditis
  - 90% of cases occur within 2 months of commencement
- usually occurs after 2 months of starting clozapine but can happen at anytime
- Full physical assessment and medical history required before starting clozapine
- Specialist examination required if any history or cardiac abnormalities



# Symptoms of Myocarditis

- Fatigue
- Fever-
  - Flu like symptoms
  - Occasionally diarrhoea/vomiting or difficulty and pain when passing urine
- Chest pain
- Fast heart rate/ Palpitations
- Difficulty breathing/shortness of breath
- Abnormal blood results
  - Increased C-reactive protein
  - Positive troponin I and/or T



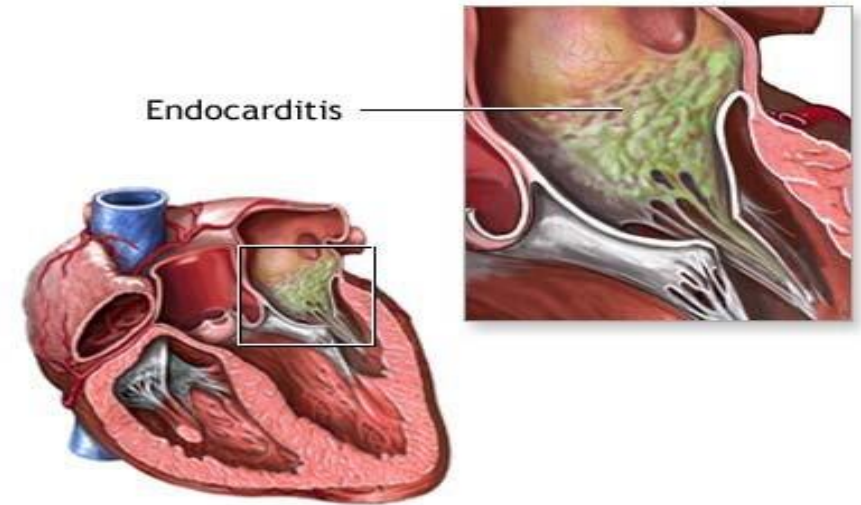
# Symptoms of Cardiomyopathy (heart enlargement)

- ❖ Fatigue
- ❖ Cough
- ❖ Breathless/difficulty breathing
- ❖ Palpitations
- ❖ Heart failure- Leg swelling
- ❖ Low blood pressure
- ❖ 50% of patients die within 5 years of diagnosis



# Symptoms of endocarditis (infection of the heart)

- Initially:
- a high temperature (fever) of or above 38C
- chills
- headache
- joint and muscle pain
- **If untreated infection damages heart valves, disrupts blood flow and triggers life-threatening complications:**
- Heart Failure – where the heart is unable to pump enough blood around the body
- Stroke



# Any questions ?



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# 10 Minutes Break



Ask about the  
#ELFTPromise

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# Medical Devices



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# Medical Devices Presentation

Medical Devices Lead  
[elft.medicaldevices@nhs.net](mailto:elft.medicaldevices@nhs.net)



# Medical Devices

## Objectives

- By the end of the session one should be able to understand what is a medical device
- Know different classes of medical devices
- Understand how to manage devices
- Be familiar with risk and responsibility associated with medical devices
- Know the Contractor to refer for maintenance and repairs of Medical Devices
- Know about alerts and the Medical Devices Regulatory Agency (MHRA )



## Definition

The term 'medical device' covers a broad range of products, used every day throughout the health economy to support the diagnosis, treatment and care of patients.

The definition of a medical device in European and UK law<sup>1</sup> is, 'any instrument, apparatus, appliance, material or other article, whether used alone or in combination, including the software necessary for its proper application intended by the manufacturer to be used for human beings for the purpose i.e

- Diagnosis, prevention, monitoring, treatment or alleviation of disease, injury or disability
- Investigation, replacement or modification of the anatomy or of a physiological process.
- Control of conception and which does not achieve its principle intended action in or on the human body by pharmacological, immunological or metabolic means, but which may be assisted in its function by such means."



# Medical Devices

Category	Definition	Examples
<b>1. Non-invasive</b>	Devices which do not enter the body	Plasters, walking sticks, wheelchairs, artificial kidneys (external dialysis)
<b>2. Invasive</b>	Devices inserted into the body's orifices	Contact lenses, enemas, examination gloves
<b>3. Surgically invasive</b>	Devices used or inserted in surgery	Needles, scalpels, cardiovascular catheters
<b>4. Active</b>	Devices requiring an external source of power	X-ray equipment, ultrasound, TENS devices
<b>5. Implantable</b>	Devices implanted into the body	Breast implants, orthopaedic implants, intraocular lenses

# Medical Devices

Class (low to high risk)	Examples
Class I	Wheelchairs, spectacles, stethoscopes, tongue depressors
Class IIa	Dental fillings, surgical clamps, tracheotomy tubes
Class IIb	Condoms, lung ventilators, bone fixation plates
Class III	Pacemakers, heart valves, implanted cerebral stimulators

# Examples of medical devices

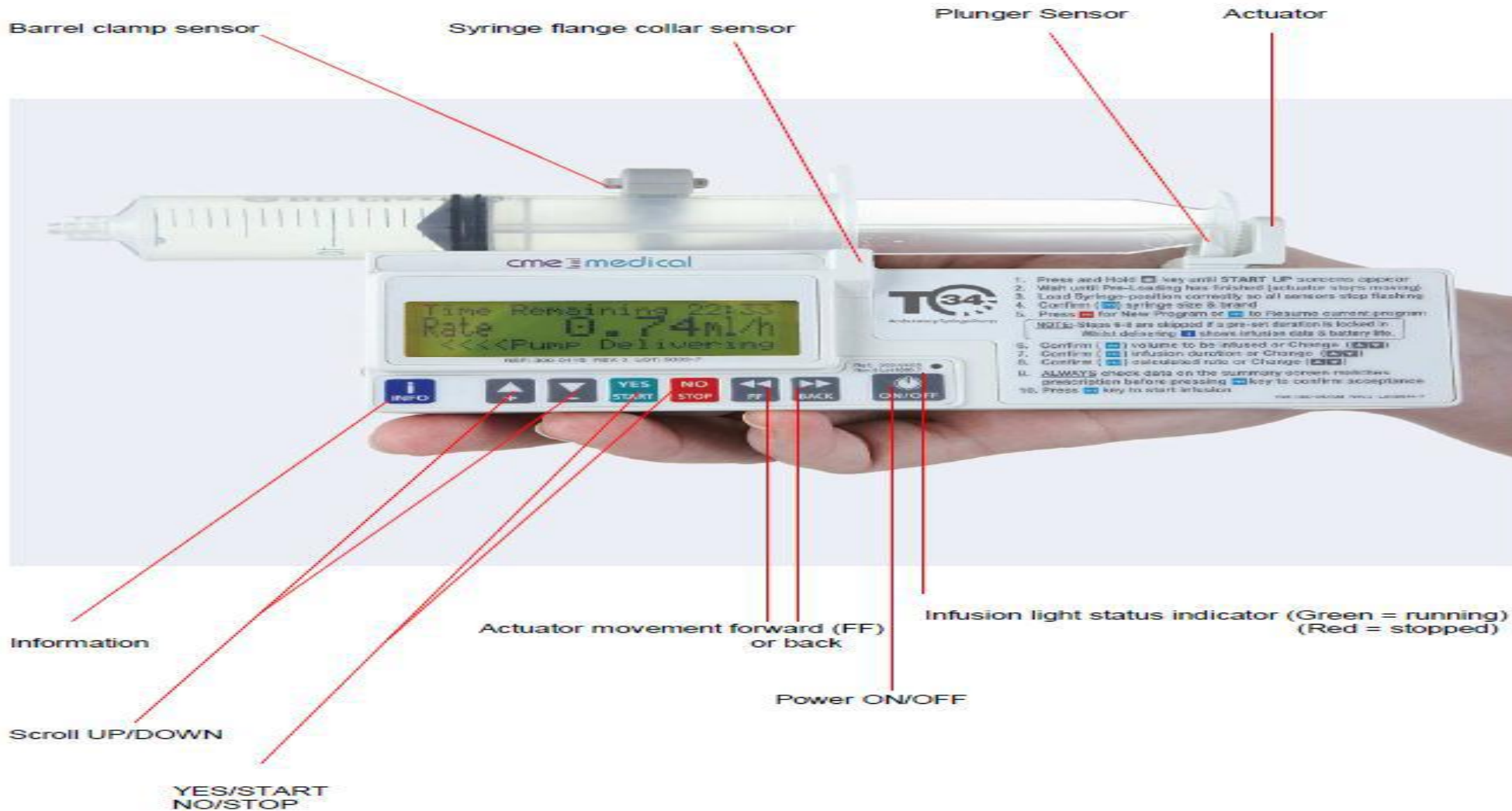
- Syringe drivers, syringes
- Bed, hoist, dinamaps, suction machines
- Bladder scanners
- Thermometers
- Defibrillators
- Bandages
- Inhalers, spirometers



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# Syringe driver



# Plinth



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# Bladder scanner



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# EDAN IM3/Vital Signs Monitor



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# Blood Pressure Machine



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# Defibrillator



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Ensuring they are suitably trained to use the equipment in accordance with the Medical Device Policy.

Ensuring that, where medical equipment is found to be faulty, it is taken out of use, cleaned in accordance with the Trust's Decontamination Policy and reported to the contracted company

Please see Medical Devices Policy Trust Intranet



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- **ECG machines**
- **Infusion pumps**
- **Ultrasound machines**
- **Defibrillators**
- **Patients chairs**
- **Spirometers**
- **Blood pressure monitors**
- **Scales thermometers**
- **Plinths**
- **Alco meters**
- **Otoscope**
- **Pulse oximeters**



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# Maintaining of medical devices

- Scheduled servicing by Avensys
- When a service buys a new device they have to register it with the contracted company
- When a device is faulty the contracted company should be informed
- Contracted company is supposed to repair the devices, if its not possible they will inform the services and MD Lead
- All repairs are covered under the contract
- Medical device lead to be informed if company charging for repair



- Refers to activities carried in the life cycle of a medical device that serve the objective of ensuring safety, performance and effectiveness
- Maintenance measures are in particular inspection and servicing that are necessary to ensure the safe and proper function of a medical device
- It involves replacement of consumable items such as lubricants, loose cables needing reattachment , devices dirty beyond intended level and needs cleaning etc.



- When servicing is due email is sent by the contract company to a site
- They will provide a list of equipment they have on the database
- All those equipment should be presented for servicing, if there are some missing from the list provide but been used it should also be presented for servicing
- Post services report will be emailed to site and Medical device Lead copied in
- Site need to complete the post service report and email back to Avensys copying Medical Device Lead.
- Services needs to ensure all equipment's are serviced and if any concerns raise it with the MDL



# Medical Device disposal

- All medical equipment must be disposed of in a safe and appropriate manner.
- The disposal of medical equipment is currently not specifically covered under any legislation.
- However, it is incumbent on the Trust to ensure that any used medical equipment is disposed of correctly following any necessary local regulations or guidelines.
- When a device has been condemned ,Disinfectant and packaging ,Devices maintaining confidential information,
- How long does it take for the device to be disposed
- Who pays for disposal?
- Equipment donated for re-use is required to be safe under other national provisions including

Consumer Protection Act 1987 (Consumer Safety and Product Liability Health and Safety at Work Act 1974 . The Electrical Equipment (Safety) Regulations 1994

# Adverse Effects from Medical Devices

- Medical devices and technologies can contribute to However, most are also complex and their effective application relies on a complex interplay of factors.
- Thus, they can actually cause harm, if design flaws are not identified and rectified, equipment is not adequately maintained or prepared for use, or proper use procedures are not established and followed.



# What to do in event of injury and Safety Alerts

- Adverse incidents involving medical equipment should be reported using the Inphase and [elft.medicaldevices@nhs.net](mailto:elft.medicaldevices@nhs.net).
- Dependent on the circumstances, consideration should also be given to reporting the incident to the Medical Devices Regulatory Agency(MHRA)
- Advice should be sought from Medical Device Lead
- Occasionally service leads and directors will receive safety alerts to disseminate to their services
- Safety notices are also disseminated via communications called CAS Alerts or Field Notices
- Instruction and action expected are also enclosed with the alert
- Services will need to respond to these and produce evidence of actions in timely manner.
- This evidence of actions is uploaded to ELFT in-phase system and information shared with MHRA and CQC as required and appropriate.

# Familiarise yourself with the inventory

Username: [user.el@nhs.net](mailto:user.el@nhs.net)

Password: LetMe1nPlease!

Link: <https://db.avensysmedical.co.uk/Login.aspx>

<https://www.youtube.com/shorts/O6SqW4074n0>



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# Lunch Break

12.30 – 1.30pm



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# Slip, Trip and Fall

## Definitions

**SLIP:** A slip is to slide accidentally causing the person to lose their balance; this is either corrected or causes a patient to fall.

**TRIP:** A trip is to stumble accidentally often over an obstacle causing the person to lose their balance, this is either corrected or causes the person to fall.

**FALL:** A fall is an unintentional or expected loss of balance resulting in coming to rest on the floor, the ground or on an object below knee level.

Slips Trips and Falls Management (Inpatient) Policy 6.0.pdf  
<https://www.elft.nhs.uk/intranet/documents/slips-trips-and-falls-management-inpatient-policy>.



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- ❖ **All patients over the age of 65** must have a Falls Risk Assessment completed on admission.
- ❖ Where a risk is identified a falls prevention care plan must be completed.
- ❖ Consider carrying out a risk assessment if they have any physical health condition that could affect their mobility, balance or gait, if they are using a mobility aid.
- ❖ Complete the falls risk assessment.
- ❖ Upload to RiO
- ❖ Refer to OT for further input



## FALLS MULTI-FACTORIAL RISK ASSESSMENT

<b>Service user name:</b>	
<b>NHS number:</b>	
<b>Ward:</b>	

**Notes to user of this tool:**

**1. To be completed on admission or transfer to the ward:**

- *If any risk factors are identified, please complete a falls prevention care plan*
- *Please repeat the assessment: weekly if a risk is identified, monthly if no risk identified, after a fall and if the patient's presentation changes, in accordance with the Trust Policy on the Management and Prevention of Slips, Trips and Falls.*



No	Falls Risk Questions	Yes/No and comments
1	Does the person have a history of falls? If so, how many in the last year? How did you get this information?	
2	Does the person have a fear of falling?	
3	Does the person report or have any problems with gait?	
4	Does the person report or have any problems with balance?	
5	Does the person have any evidence or history of muscle weakness?	
6	Does the person have any limitations and/or mobility issues?	
7	Does the person use a mobility aid? Do they have it with them? (Comment on whether this is in good condition e.g. inspect ferrules)	
8	Does the person suffer from Postural Hypotension?	
9	Does the person suffer from dizziness/faintness (pre-syncope) or faints (syncope)?	
10	Does the person have any vision issues? Do they wear glasses? Do they have them with them?	
11	Is the person taking/prescribed 4 or more medications?	
12	Is the person fully orientated to time, place and person?	
13	Does the person have any problems with continence: urgency/frequency/incontinence?	
14	Does the person have any evidence of osteoporosis or known to have osteoporosis?	
15	Does the person have any problems with the condition of their feet?	
16	Does the person have appropriate footwear? (non-slip & securely fitted)	
17	Does the person have reduced appetite or dietary intake? Any signs of malnutrition or dehydration? Any difficulty eating or drinking?	
18	Any other comments/ considerations from the MDT or person assessed	
<b>Is a falls prevention care plan indicated?</b>		
Remember to upload this risk <del>Ax</del> to Rio and to document in progress notes. If a care plan indicated, please complete, hand over and document clearly in Rio.		
<b>Assessor's signature &amp; Designation:</b> (please add everyone involved)		



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# Person Risk Factors

Age: People aged 65 and older have the highest risk of falling, with 30% of people older than 65 and 50% of people older than 80 falling at least once a year.

❖ **Cardiovascular**

❖ **Balance**

- Proprioception
- Weak muscles
- Diseases
- Walking aids

❖ **Confusion**

❖ **Bone health**

❖ **Medication**

❖ **Vision**

- Clarity of vision
- loss of peripheral vision,
- Distinguishing outlines of the background
- Binocular vision

❖ **Toileting and Continence**



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## Case study



65 year old Sam, not known to our services, is presenting with delusional ideations about his family. Family reported concerns around his mental health; chaotic, manic, unusual behaviour, poor sleep and poor dietary intake, he has lost a significant amount of weight. Sam has been prescribed 2mg of Diazepam, to help with settling him on to the ward. The team have discussed starting him on pharmacological treatment; the ward consultant is planning to start him on Olanzapine.

Sam reported to live with his wife and niece. Sam is also an active member of the church and is a retired mental health nurse. In addition to his mental health he also has physical health needs - he has Rheumatoid Arthritis, can sometimes experience stiffness in his lower limb. He also has Type 2 diabetes and high blood pressure. Prior to his admission Sam's blood pressure is significantly high so his GP has placed him on Lisinopril, to lower his blood pressure. Sam has reported feeling dizzy lately but thinks it's nothing to worry about.

What are some of the patient risk factors identified in this case study?



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# Environmental Risk Factors

**Journeys** - Examining the patients journey is crucial as it could potentially be a risk factor. So potentially exploring the distance to places where they might spend a lot of their time. For example bedrooms being close to toilet areas. Good signage so places are easily located, to avoid people getting lost.

**Lightning** - Good lightning in areas to enable people to have a clear view of the environment.

**Furniture** - Examine comfort and height of chairs, when furniture's are not adjusted for good height it can often contribute to falls for the patient. Consider input of Occupational Therapist to see how adaptive or strategies to examine furniture's.



# Environmental Risk Factors -cont

**Footwear** - Patients footwear can equally be a contributing factor to falls, it is important to have covered foot wear or grip socks especially on hospital falls.

**Slip hazards & Trip hazards** – hazards such as uneven surfaces, changes of floor surfaces between rooms or corridors, could also impact on falls. Take into account spillage within the environment or wet floors, for example cleaning methods should reduce instances of falls by putting signage.

**Easy to reach** – Another environment area to explore is placing items used frequently within reach of a patient who could already be falls risk. This way they are not having to overextend or think of other means to locate their items, this could result to a fall.



# Post fall protocol

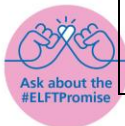
## ASSESSMENT

### **BEFORE ASSISTING THE PATIENT TO RISE:**

**At all times maintain safe moving and handling techniques to ensure the clients, your colleague and your own safety and well being**

1	Assess the immediate environment for hazards & call for assistance.
2	Communicate with client—Observe level of consciousness and response and ascertain events leading to the fall where possible. <b>If the patient is unconscious move directly to point 14.</b>
3	Determine if the patient responds to touch/pain (spinal injury).
4	Question and observe the patient for any evidence of pain (particularly in the pelvic area).
5	Observe and then examine all limbs and joints to determine if there is full movement and rotation in each limb and joint (working from head to toe, as instructed in the Fall Workshop)
6	Observe and then examine each limb and joint for redness and/or swelling.
7	Observe and then examine the patient's legs and observe for any evidence of shortening or impaired rotation.
8	Observe and then examine the patient for evidence of any bruising, lacerations or further injury.

**N.B. IF A PATIENT RISES FROM THE FALLEN POSITION INDEPENDENTLY, ASSIST THE PATIENT TO A PLACE OF COMFORT & PRIVACY. STEPS 1 - 8 MUST BE COMPLETED IMMEDIATELY AND THEN CONTINUE TO CARRY OUT ACTIONS FROM POINT 9.**



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# Post fall protocol

## ASSISTANCE / INTERVENTION

***IF THERE IS FULL MOVEMENT AND ROTATION OF LIMBS AND JOINTS AND NO INDICATION OF PAIN:***

9 The patient must be assisted to rise and mobilise using safe moving & handling techniques.

10 Examine the patient's level of weight bearing, mobility and transfer and compare it with their

Re-examine for any evidence of redness and/or swelling of limbs and joints, particularly the

***IF PATIENT IS IN PAIN:***

12 If there is any evidence of pain or concerns about the limbs/joints (shortening and/or impaired rotation, swelling and/or redness) then the patient must be made comfortable where they are – maintain their privacy & dignity as far as possible.

**DO NOT MOVE THEM**

**DO NOT MOVE THEM** – ensure someone stays with the patient, verbally reassuring them and explaining the process.

**13.** Inform the Duty Doctor\*/emergency services (dependent on local policy) immediately and act on direction and advice received. **If specialist equipment is required for client care, ensure this is clearly communicated on the phone to the emergency services, to allow them to come prepared.**

**14.** *Duty Doctor and or GP must be informed within 30 minutes of the fall occurring. The patient must be offered a medical examination after sustaining a fall.*

**N.B. \* THE CLINICAL DECISION IN RELATION TO THE ACTION TAKEN IS THE RESPONSIBILITY OF THE EXAMINING HEALTHCARE PROFESSIONAL (HCP).**

# Any Questions ?



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# Smoking Cessation Very Brief Advice

**Fateha Poly**

Tobacco Dependency Advisor

# Smoking Cessation Team Structure Chart



**East London**  
NHS Foundation Trust

Medical Director  
**Philip Baker**  
[philipbaker@nhs.net](mailto:philipbaker@nhs.net)

Deputy Director – IPC and Trust Lead Physical Health  
**Bernadette Kinsella**  
[bernadette.kinsella2@nhs.net](mailto:bernadette.kinsella2@nhs.net)  
07342 064 602

Programme Manager  
**Dianette Scott**  
[Dianette.scott@nhs.net](mailto:Dianette.scott@nhs.net)  
07947596330

Lead NEL & BL  
**Ogechi Anokwuru**  
[o.anokwuru1@nhs.net](mailto:o.anokwuru1@nhs.net)  
07944 939 606

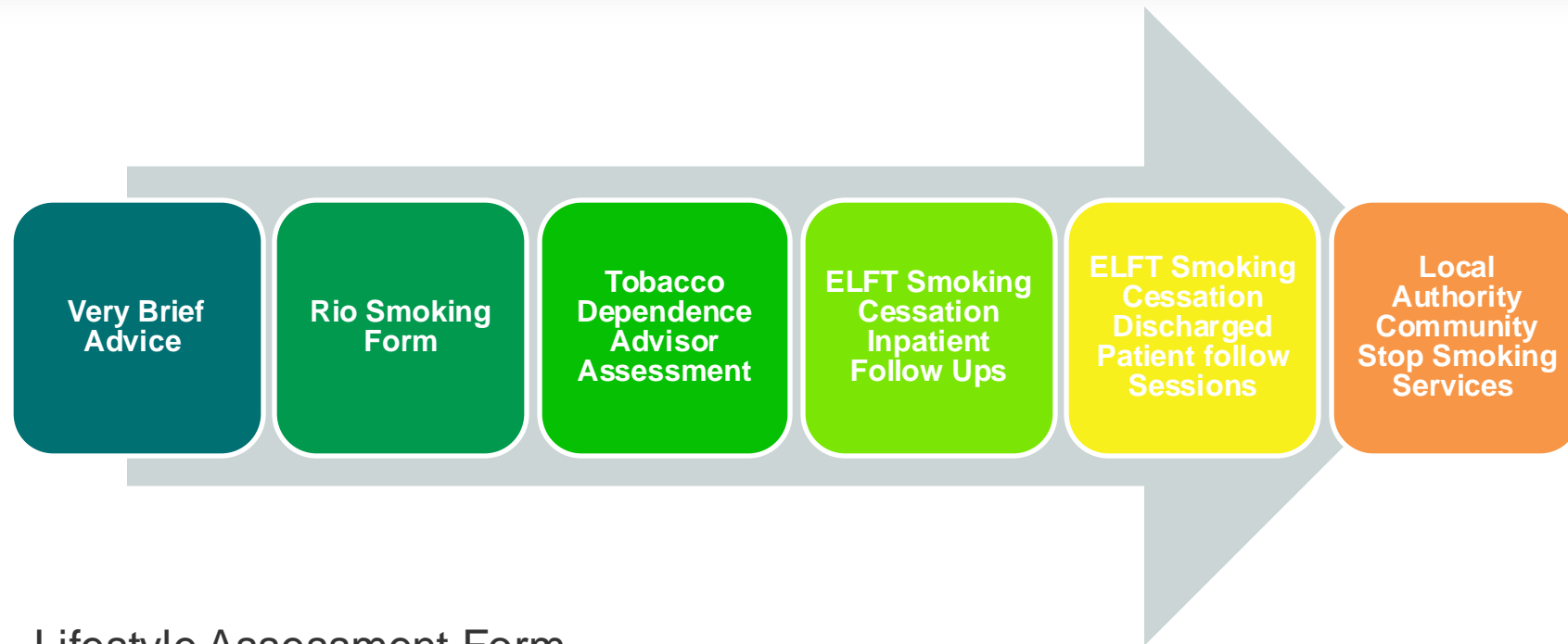
Data Analyst and Administrator  
**Nathan Chan**  
[nathan.chan5@nhs.net](mailto:nathan.chan5@nhs.net)  
07825 022 208

**Luton and Bedfordshire**  
Tobacco Dependency Advisors  
**Ihuoma Alozie,  
Fateha Poly  
&  
Djenny Nkoy**

**London**

<b>Newham</b> Tobacco Dependency Advisors <b>Christopher Oleru- uda &amp; Vedaste Ndizeye</b>	<b>Tower Hamlet</b> Tobacco Dependency Advisors <b>Syeda Begum &amp; Majed Al Masri</b>	<b>City &amp; Hackney</b> Tobacco Dependency Advisors <b>Kelvin Okorie</b>
--	--	---

# Our Local Inpatient Pathway



- Lifestyle Assessment Form
- Smoking Rio Form
- [Elft.stopsmoking@nhs.net](mailto:Elft.stopsmoking@nhs.net)

# Smokefree Trusts – Support options for smokers in inpatient settings

Temporarily abstain from smoking without support

Temporarily abstain from smoking with pharmacological & psychological support

Smoking reduction (a supported attempt to reduce the number of cigarettes smoked, with or without the use of nicotine)

Take the opportunity to make a sustained quit attempt with pharmacological & psychological support

# Smoking rates among people with SMI are more than three times the general population

**12%** general population



**40%** severe mental illness



**60-70%**

Schizophrenia and  
psychiatric inpatients



# People with mental health illness suffer disproportionately from smoking-related illness



**Heart disease**



**Stroke**



**Diabetes**



**Lung diseases**



**Cancers**



**Bone health**

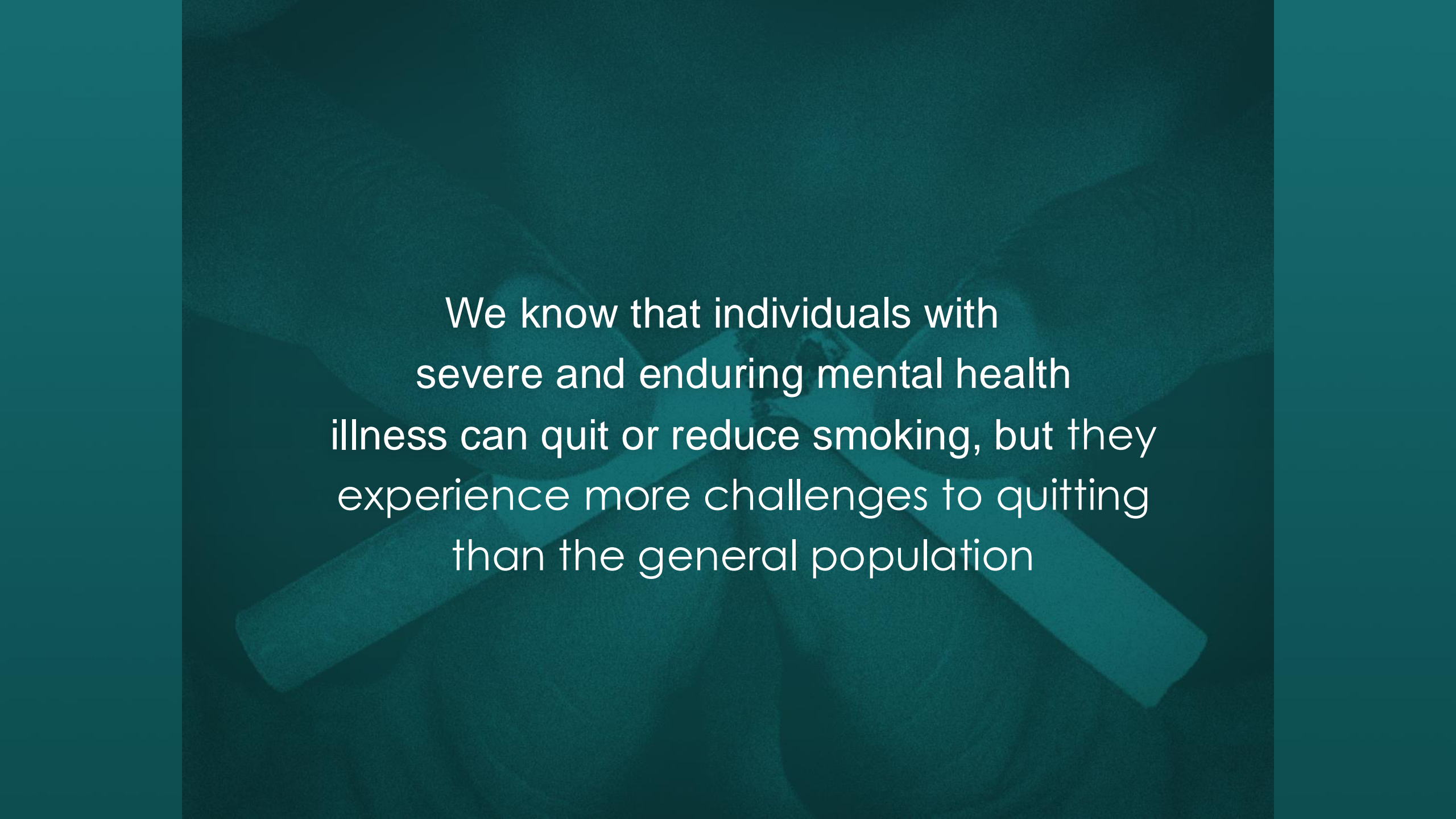


**Oral health**

## **People with SMI:**

- Increased risk of heart disease and stroke
- 2-3 times more likely to have diabetes
- Increased risk of dying from a respiratory disease – 10 times higher than the general population
- More likely to suffer from asthma, chronic bronchitis and emphysema
- Worse cancer survival rates
- Increased risk of osteoporosis and fractures
- Increased risk of tooth decay, gum disease, tooth loss, and oral cancer



A group of people, including men and women of various ages, are shown from the chest up, holding hands in a circle. They are wearing light-colored shirts. The background is a soft, out-of-focus outdoor setting with greenery. The overall tone is positive and supportive.

We know that individuals with  
severe and enduring mental health  
illness can quit or reduce smoking, but they  
experience more challenges to quitting  
than the general population

# Challenges to quitting for people with SMI

## **Greater tobacco dependence**

### **Perceived benefits**

Cope with stress,

### **Boredom**

Social isolation, loneliness, unemployment

### **Peers, Environment , Culture**

High rates of smoking among peers, social networks

The background is a solid teal color with a faint, semi-transparent image of two cigarette packs. One pack is on the left and one is on the right, both slightly tilted. The text is centered in the middle of the image.

# Understanding Tobacco dependence and nicotine withdrawals

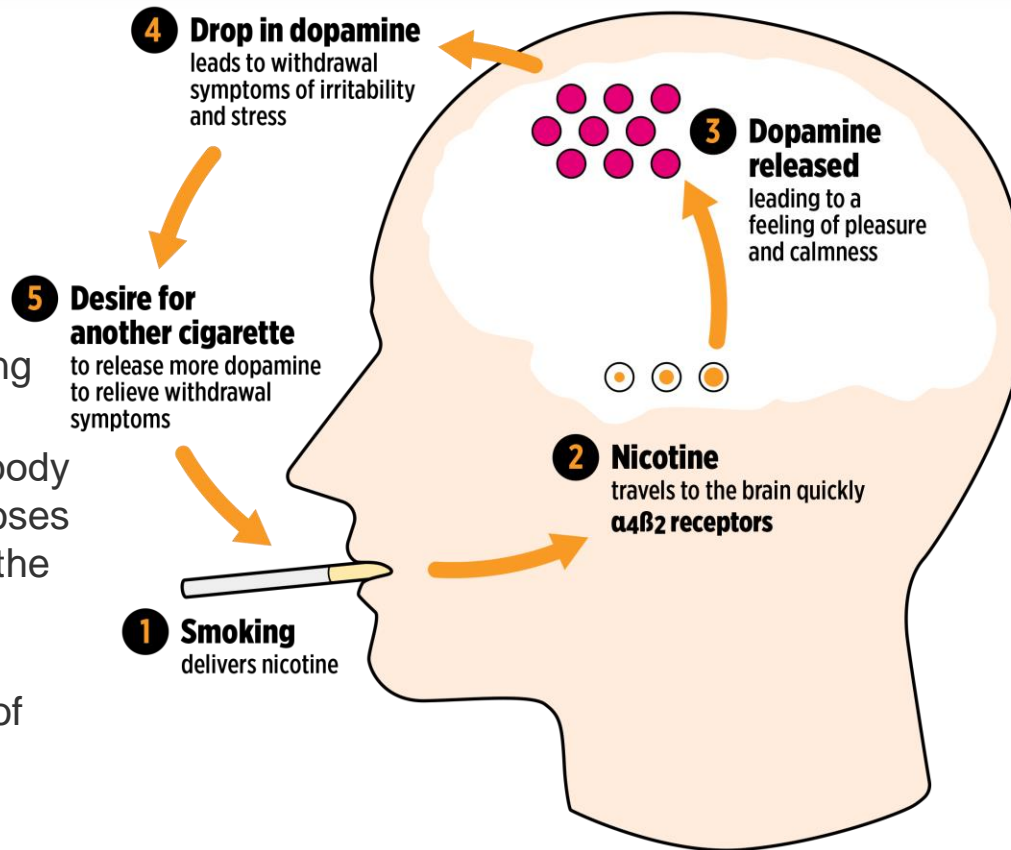
# Tobacco dependence – Dopamine reward cycle

Nicotine binds to a nicotinic acetylcholine receptor, stimulating dopamine release

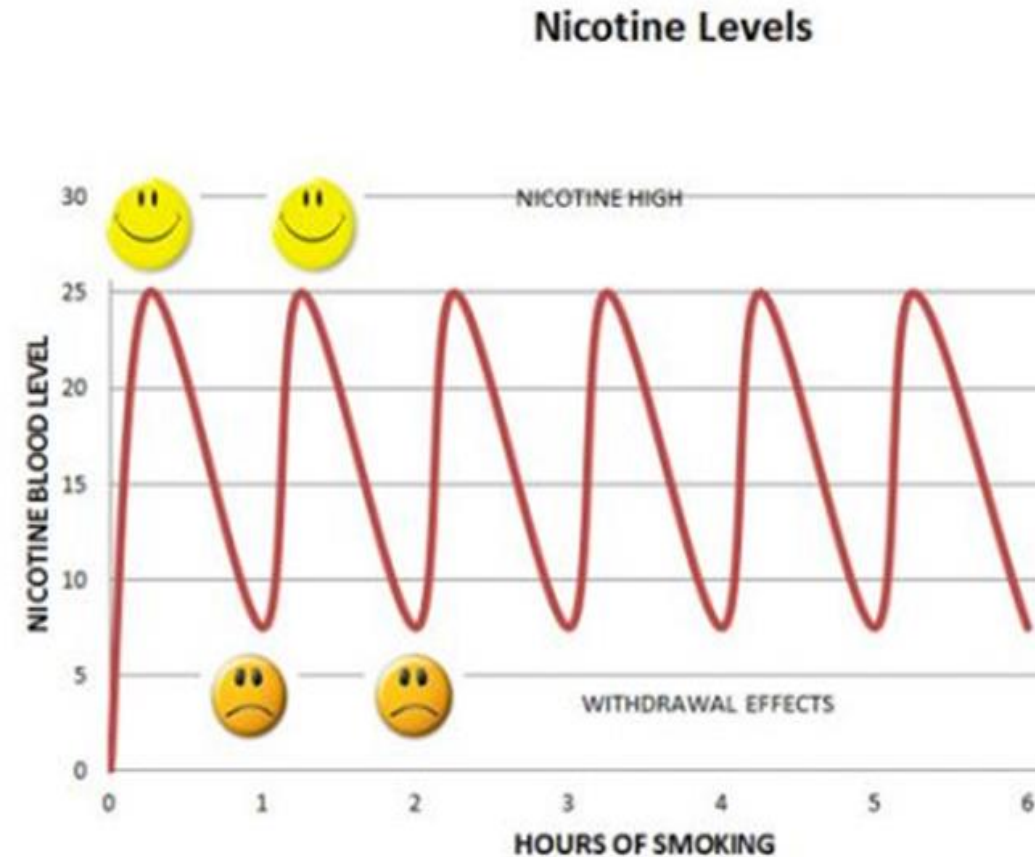
This results in the satisfaction associated with smoking

A smoker's brain and body gets used to regular doses of nicotine throughout the day

Any prolonged period of abstinence results in withdrawal symptoms and cravings to smoke



## Nicotine Withdrawal Effect



When you smoke, it tops up the level of nicotine in your body

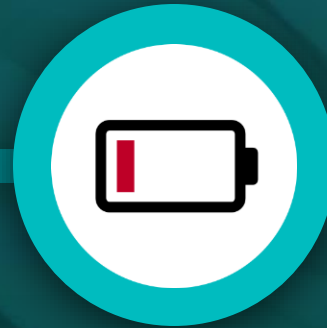
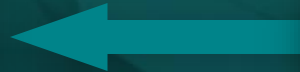


Nicotine withdrawal symptoms are relieved, making you feel more relaxed... but it's only temporary


Does smoking really reduce stress?



When your nicotine levels are low you get withdrawal symptoms, making you feel tense, irritable, anxious... **stressed**



Soon after you've finished smoking, your nicotine levels start to fall... leaving you craving another

A hand holding a lit cigarette with smoke rising, overlaid with a large, semi-transparent 'X'.

Using Nicotine  
replacement therapy  
and/or vapes to help  
reduce nicotine  
withdrawals.

# Best practices for SMI

## SCIMITAR+

Bespoke  
Intervention

- Support from trained MH practitioner
- 1:1 sessions (up to 12 sessions)
- Tailored frequency and duration of support
- Flexibility on quit date

- Abrupt quit (**first choice**)
- Cut Down To Stop

- Venue (home visits, outreach)
- Combination NRT for extended periods and support to access
- Flexibility with relapse, “breaks” (start and stop)
- Good communication with care team



# What works?

**Behavioural support + medication or a vape has been shown to significantly increase rates of quitting among people with SMI**



Behavioural support from  
a trained professional



Stop smoking medication  
or nicotine containing vape

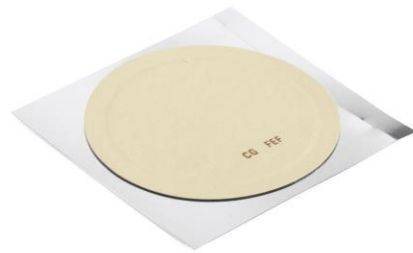
**Bespoke smoking cessation interventions can further increase engagement with treatment and outcomes**

Source: Spanakis P, et al. 2021



# NRT combination therapy

## NRT patch



Provides steady dose of nicotine throughout the day to help with withdrawal symptoms and 'background' urges to smoke



## Faster-acting NRT



Provides relief from 'breakthrough' urges to smoke and other withdrawal symptoms

Cahill K, et al. Pharmacological interventions for smoking cessation: an overview and network meta-analysis. Cochrane Database of Systematic Reviews 2013. Lindson N, et al. Different doses, duration, and modes of delivery of nicotine replacement therapy for smoking cessation. Cochrane Database Syst Rev. 2019

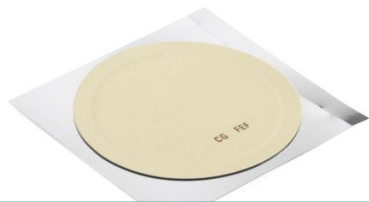
# Nicotine replacement therapy products at ELFT



## Nicotine Inhalator

### How it works

- **Nicotine delivery:** Puffing on inhalator vaporises nicotine, absorbed through mouth and throat
- **Average amount of nicotine absorbed:** 20 minutes puffing for 1mg nicotine



## Nicotine patches

### How it works

- Delivers a steady dose of nicotine to the bloodstream via skin
- Peak levels reached in 2 – 6 hours
- Average amount of nicotine absorbed: 0.6 to 1.6 mg/hour



## Nicotine Mouthspray

### How it works

- The nicotine mouth spray is a faster-acting product that takes only a few minutes to reach the bloodstream; 1 to 2 sprays are recommended every 30 minutes

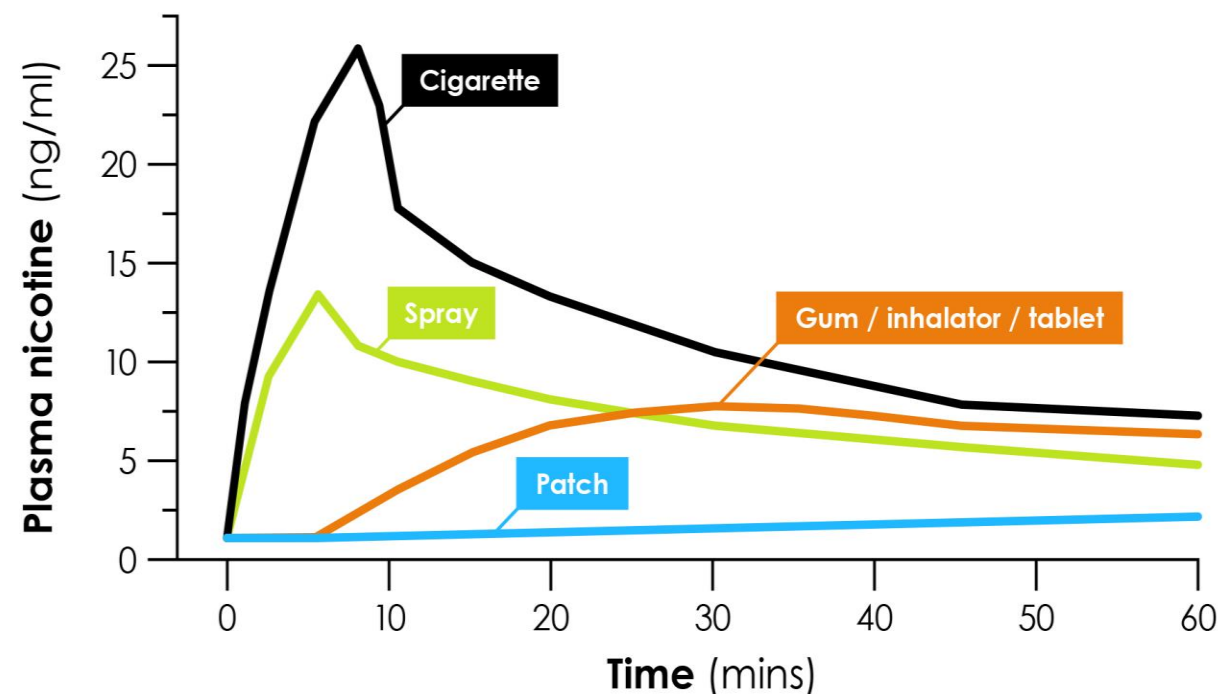


## Nicotine lozenges and mini lozenges

### How it works

- Delivers nicotine to bloodstream through buccal mucosa
- Peak levels of 4mg reached within 30 minutes
- The oral absorption of the lozenge is better than the NRT gum.

## NRT: effectiveness



\*\*\*Importance of providing combination of NRT because of the low nicotine level and slow nicotine delivery time\*\*\*

# Very brief advice - VBA

## Very Brief Advice on Smoking

30 seconds to save a life

### ASK

#### AND RECORD SMOKING STATUS

Is the patient a smoker, ex-smoker or a non-smoker?

### ADVISE

#### ON THE BEST WAY OF QUITTING

The best way of stopping smoking is with a combination of medication and specialist support.

### ACT

#### ON PATIENT'S RESPONSE

Build confidence, give information, refer, prescribe.  
They are up to four times more likely to quit successfully with support.

**REFER THEM TO THEIR LOCAL STOP SMOKING SERVICE**

# Patient Leaflet



## Benefits of Quitting Tobacco

- Breathe better
  - Live longer
  - Save money
- 
- Reduced risk of cancer, heart disease, and many other diseases
  - Can add 10 years to life expectancy
  - The dosage of some medicines used to treat mental health problems can be reduced
  - Reduced risk of poor reproductive health
  - Reduces risks to foetus for those who are pregnant
  - Reduced levels of anxiety, depression and stress
  - Improved quality of life and mood

## ELFT is a smoke free Trust

Please ask staff to refer you to the smoking cessation team for support or more information!



ELFT Tobacco Dependency Team  
We operate from Monday - Friday 9 am - 5 pm

We may share your personal information with other services in ELFT and with our local partners to support your healthcare needs. We may also share your information to help improve services. If you do not want your information to be used locally in this way please let us know.

We also submit limited personal data to the national stop smoking service. This is a national requirement for planning and other purposes.

We may also occasionally invite you to be part of a research project. Please let us know if you do not want to be contacted to take part in research.

## Smoking Cessation Service at ELFT



Nicotine patch



Nicotine nasal spray

Let us help you beat tobacco!



Nicotine inhalers



Nicotine lozenges



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## What do we do?

ELFT is a smoke free trust, we want to help staff and service users improve their mental and physical health by stopping their tobacco use.

Stopping smoking tobacco is the single best thing you can do for your health.

You are twice as likely to have a successful quit attempt with support from an advisor and effective nicotine replacement.

We can provide both!



An advisor from our team will meet with you and support you to formulate and execute a stop smoking plan that works for you!

This will include regular talking sessions to explore any challenges you're facing in your stop smoking journey as well as assessing you to select the best form of nicotine replacement for you.

## Nicotine Replacement Therapy (NRT) and E-cigarettes

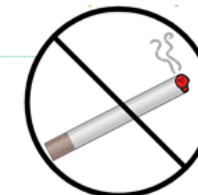
As an ELFT inpatient you can access several forms of Nicotine Replacement:

- Lozenges
- NRT Inhalator
- NRT Mouth Spray
- Nicotine patch

A smoking advisor will assess you to help you decide which form of NRT or combination of NRT will be effective.

E-cigarettes **may** also be available on the ward at nurses discretion for those who meet **at least two** of the following criteria:

- Those without leave
- Those without money to buy their own
- Those engaging with stop smoking services



## Smoking Related Myths

*"Smoking is effective stress relief"*

**False**, evidence shows smokers experience higher levels of stress which is made worse by the withdrawal which begins 20 minutes after finishing a cigarette

*"Nicotine is the most harmful part of smoking cigarettes"*

**False**, nicotine is about as harmful as caffeine. However there are more than 7,000 chemicals in tobacco smoke, at least 250 are known to be harmful and at least 69 can cause cancer.

*"There's no point in people with Mental health issues trying to stop smoking"*

**False**, smoking is the biggest contributor to physical health issues in people with mental health diagnoses. Our support is tailored with mental health challenges in mind.

*"E-cigarettes/vapes are just as harmful as cigarettes"*

NHS England has found e-cigarettes to be 95% less harmful than tobacco smoking

# Stop Smoking Community Clinics:

## **Newham**

Mondays

Passmore Edwards

10:00 – 16:00 pm

Tuesdays – Thursdays

Home Visits

Fridays

Virtual Clinic – MS Teams/ Phone

10:00 – 13:00 pm

Smoking Advisor:

Vedaste Ndizeye

## **City and Hackney :**

■ Monday : Primrose Square -10 -  
3pm

■ Wednesday: Vivienne Cohen  
House 10-3 pm

■ **Tower Hamlets : Tuesdays**

■ Old Montague St  
12:00 – 16:00 pm

Wednesday :

Stayners Road 12-4 pm



**Any questions please contact  
the smoking cessation team on**

**[ELFT.stopsmoking@nhs.net](mailto:ELFT.stopsmoking@nhs.net)**

# Dysphagia: Physical Health Presentation

Frankie Bennett, SaLT, & Jena Hall,  
SaLT



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Ask about the  
#ELFTPromise

# Aims for today's session:

## Aims:

- To develop our knowledge of eating, drinking and swallowing problems (dysphagia)
- To gain further awareness of other factors that can contribute to risks associated with eating, drinking and swallowing problems
- To know when to refer to SaLT



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# What is dysphagia?

## Dysphagia.....

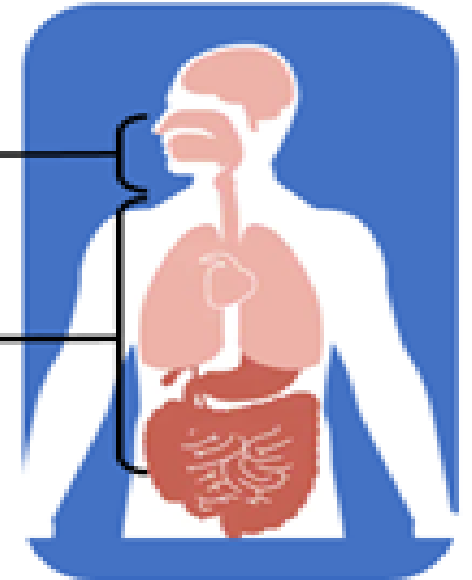
**Dys = bad**

**Phagia = eating**

- The medical term for pain or problems when swallowing
- Difficulty with eating, drinking and swallowing

There are different types of dysphagia – Speech and language Therapist are trained in assessment and management of oropharyngeal dysphagia

- Oropharyngeal Dysphagia (Speech & Language Therapy, medical input)
- Dysphagia associated with the oesophagus and stomach (Medical input)



# Why do we need to raise awareness?

## Raising awareness of dysphagia is important because...

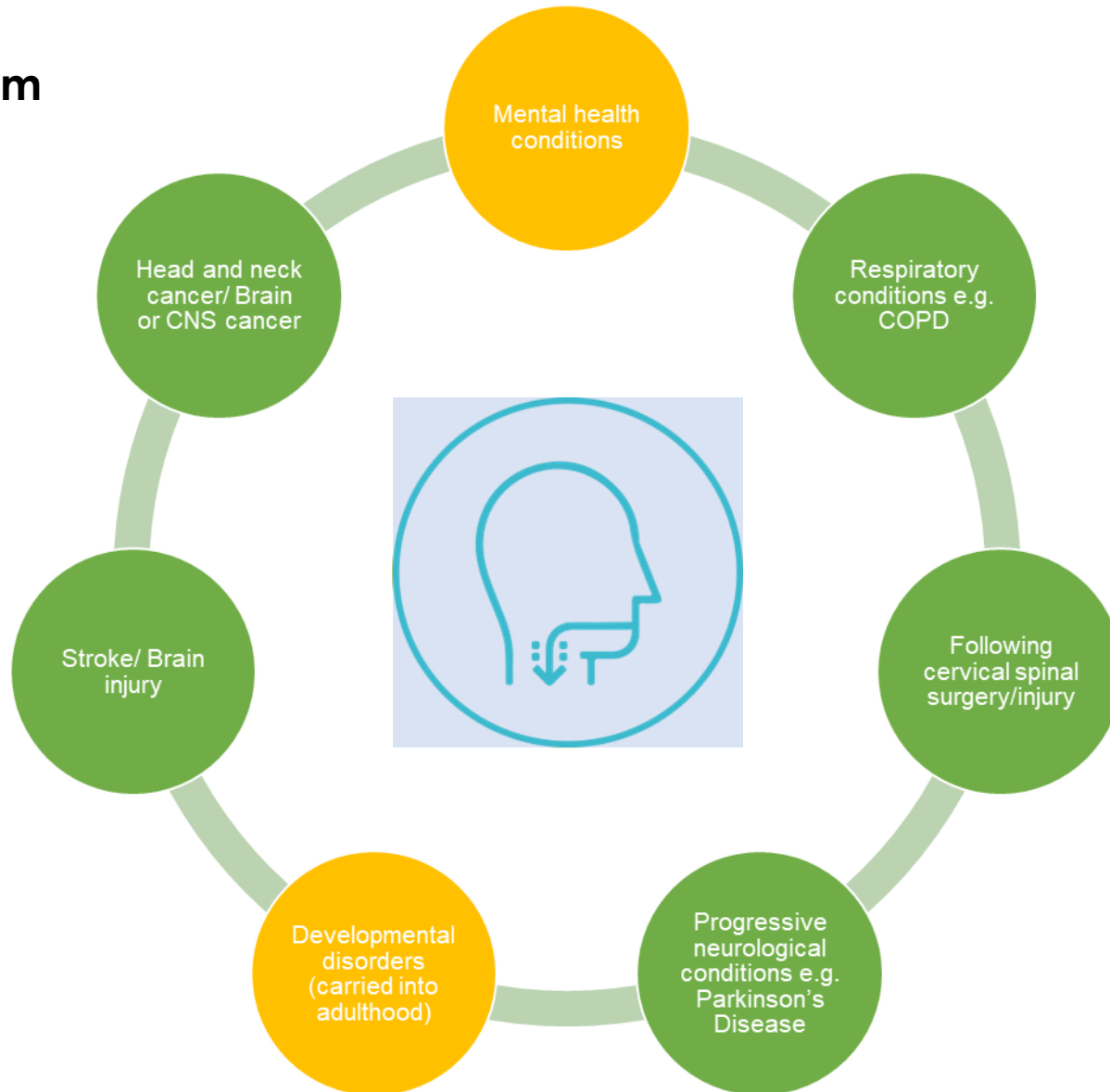
- Higher prevalence in MH/LD populations
- Huge impact on quality of life
- Can be fatal



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# Causes...?

**Dysphagia is a symptom** of many common conditions e.g. after a stroke.



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# What are the numbers telling us...?

## Rates of dysphagia...

*Dysphagia often forms part of other health conditions for which a person is being treated, so it is difficult to be certain of the prevalence rate.*

- General population: 16-23%
- LD: 36 – 70%
- MH settings: 30%
- % of sudden deaths in adults with MH due to choking: 10%
- People with schizophrenia: 20 X greater choking risk than general population



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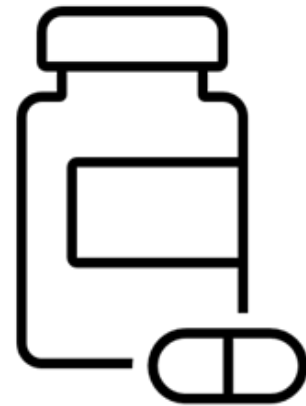
# Medication related risk factors

## Red flags...

- Antipsychotic, neuroleptic, anti-cholinergic medications
- Polypharmacy
- Changes – not always obvious when there is a change in medications, can be chronic



# Medication: Why swallowing?



xerostomia and  
sialorrhea



tardive  
dyskinesia



sedation, fatigue,  
inhibited gag



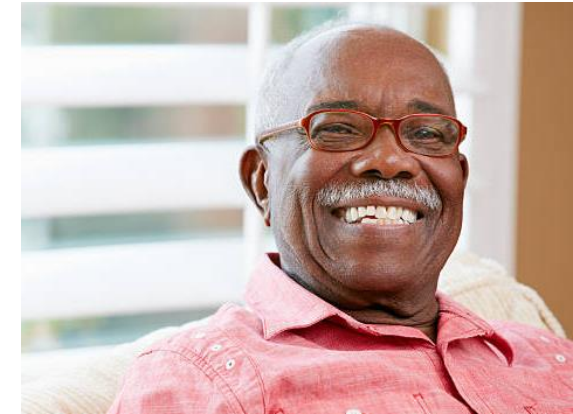
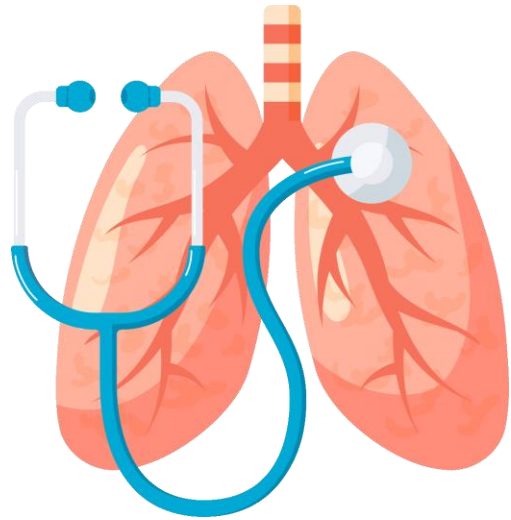
Parkinsonian  
presentation and  
dystonia



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# Overlapping Risk Factors



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# Behaviour vs. Dysphagia



Some service users may eat in a way which increases risk of harm, particularly choking risk.

This might include; rushing, cramming food, large mouthfuls, holding food in cheeks, falling asleep whilst eating, talking ++ during meals.

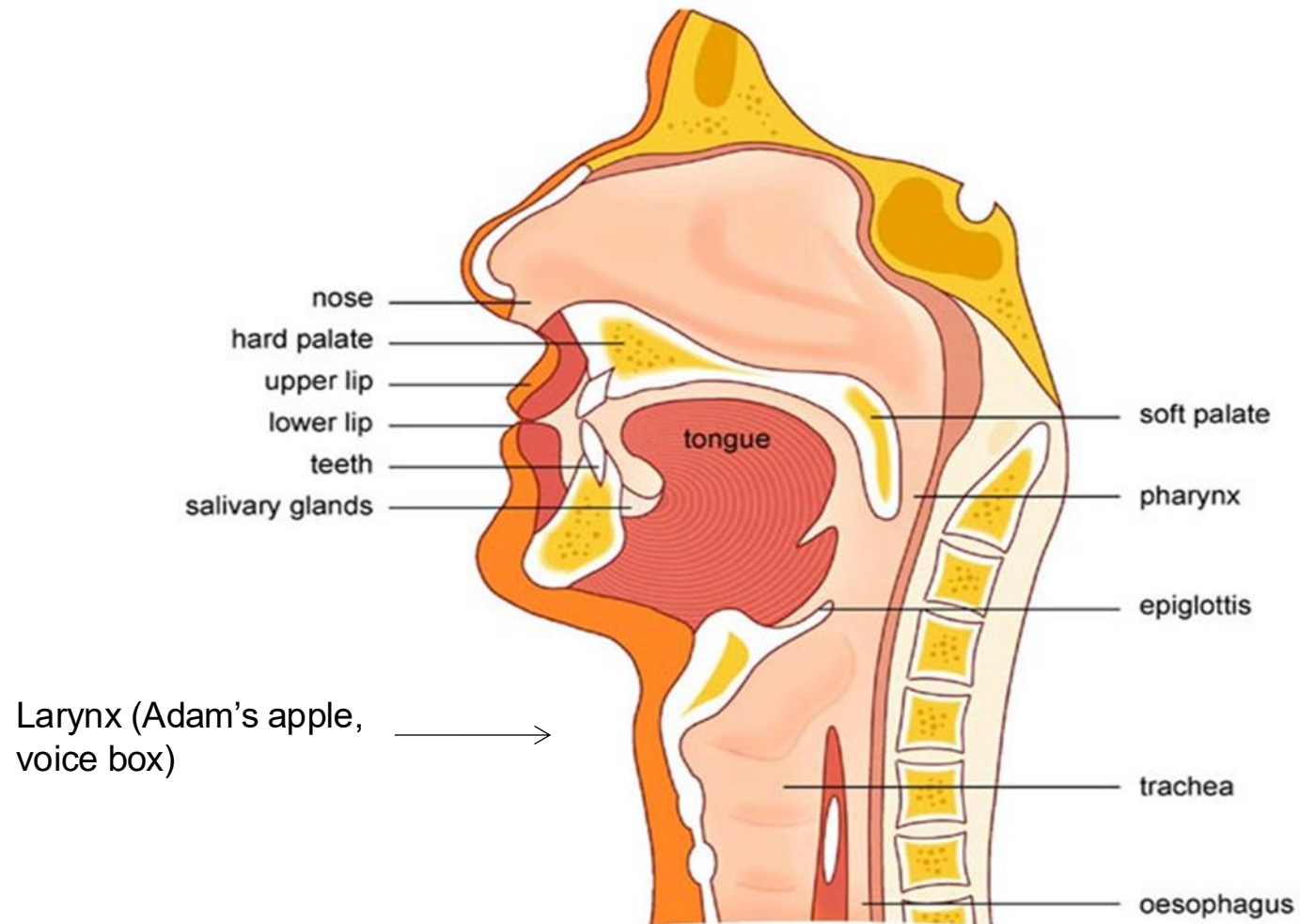


Our environments e.g. seclusion, can also increase risks.

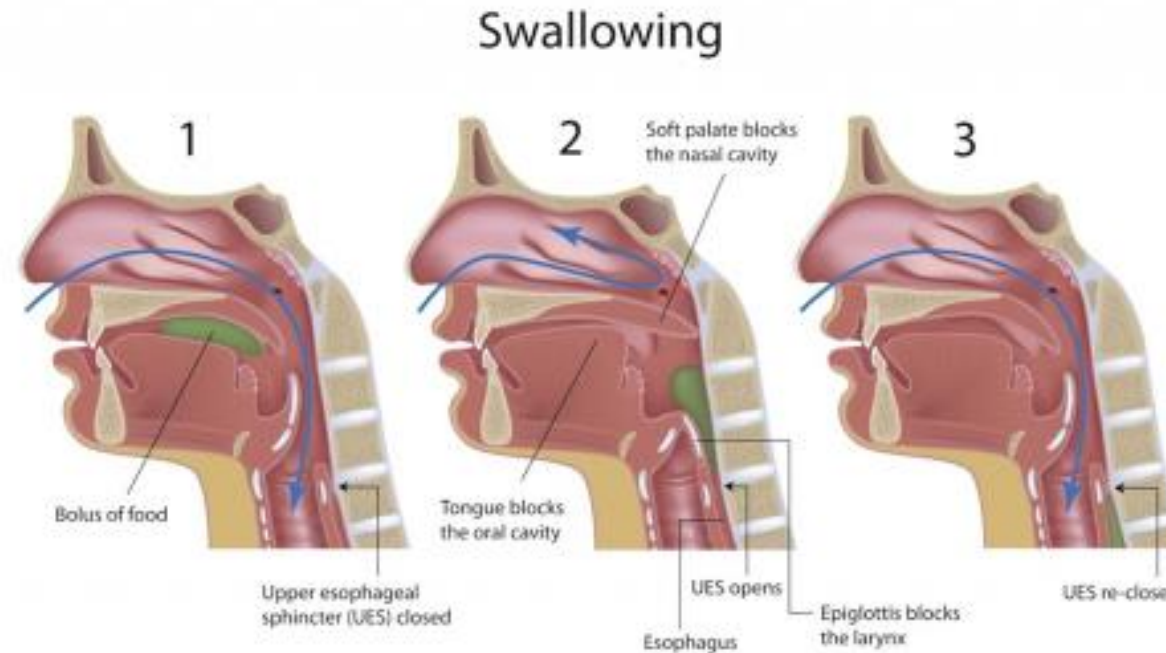
For support with risk assessment and guidance about this please also get in touch!



# What happens in a normal swallow?



# Normal swallow continued...



Stages of swallowing



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# Normal swallow continued...



- Stages of swallowing
- Coordinating 50 pairs of muscles and nerves
- The brain, cognitive priming and skills
- Breathing and protecting the airway
- Things can go wrong at any point – then can act like falling dominos



# Normal swallow and abnormal swallow



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<https://www.youtube.com/watch?v=fqG0QmlaFMs>

# During eating/ drinking – what to look out for

- Coughing
- Choking
- Difficulty breathing
- Change in colour
- Effortful swallow
- Delayed swallow
- Multiple swallows
- Throat clearing



- Tears or wet eyes
- Sweating
- Appearing uncomfortable
- Wet voice
- Difficulties chewing
- Food spillage from lips
- Drooling / dribbling
- Holding food in mouth
- Fatiguing
- Long mealtimes
- Refusal
- Reporting pain
- Reflux/ regurgitation

# More long-term/ chronic signs

- Repeat chest infections/ pneumonia
- Repeated episodes of choking or respiratory depression
- **Premature death**
- Unintended Weight loss
- Malnutrition
- Dehydration/ constipation
- Urinary tract infections
- Fatigue/ tiredness
- Reduced quality of life
- Reduced / altered social opportunities/ social isolation
- Embarrassment – drooling
- Effects on dignity/ choice
- Frustration/ Irritability
- Fear of eating – avoidance
- Extended meal times – give up/ meal gets cold



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# Refer to SaLT if overt signs and/or long-term trends



- Physical health trends such as
  - Choking incidents
  - Unexplained weight loss
  - Difficulty with breathing required for eating
  - Repeated infections, esp. chest, UTIs
  - Signs of dehydration or malnutrition



Anyone can refer or get in touch to discuss a case.



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# Impact on staff/ carers

## Supporting someone with dysphagia can be challenging:

- Anxiety/ fear
- Overly restrictive
- Not enough time
- Impatience
- Neglect
- Guilt

## Supporting someone with dysphagia can be rewarding:

- Reassurance
- Confidence
- Satisfaction e.g. improving quality of life
- Enjoying cooking/ meal preparation and eating and drinking with service users/ family
- Pride e.g. mealtime environment





# How SALT can help

## What does SALT do?

Identify, check for or assess swallowing problems

Identify and provide a plan to reduce risks of choking, physical health consequences or escalation of swallowing problems

Improve or support quality of mealtimes / life

Provide advice, training and support to the team

Scope for direct intervention depending on need



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# Care plans and modified diets

**Eating and drinking care plan**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Please make sure a copy of this is available to all staff. Easy read strategies are also on the food trolley.  
Make sure all staff and family are familiar with the recommendations.



**Risk:**

- X is at risk of choking and/or aspiration due to:
- **Unsafe swallow mechanism**—swallow is effortful, X is using strategies to help food go the right way including eating deliberately and slowly, and coughing when food goes the wrong way
  - Having a weak chew and movement of muscles
  - Occasionally being very **drowsy when eating**—this can fluctuate, when drowsy or not alert may be unable to use strategies needed to swallow safely
  - Difficulty reporting dysphagia symptoms
  - Highly distractible at times
  - Dependence on the ward team for observation and support with accessing 'minced and moist'/ Level 5 foods, sauces and drinks.

This care plan will be reviewed during the patients ward round. Ward staff should inform SaLT of any concerns about the patient's eating and drinking at ward round, or earlier if the concerns are urgent. Contact details:

Frankie Bennet/Jena Hall — # 2992 or email....

John Howard Centre - Clerkenwell Ward



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**My eating and drinking care plan**

Client Name: \_\_\_\_\_ Date of birth: \_\_\_\_\_ NHS Number: \_\_\_\_\_

**Food and Drink**

**Minced & Moist Food (IDDSI level 5)**

- Normal drinks—Drink jugs should always be on the table
- **ALL food is soft, tender, moist and mashed into very small lumps by fork**
- Lumps soft enough you could mash with your tongue
- Add lots of sauce to moisten food
- No excess, separate liquid on food

(See attached advice sheet, and IDDSI high risk foods & easy to chew food leaflets)

- What will staff do to help me stay safe when I eat?**
1. **Observation:** Staff will discretely observe during meals to monitor for signs of choking (X may eat liquid or soft snacks in his room e.g. yoghurt, all other food staff must **keep in eyesight**). Provide immediate first aid if required.
  2. **Mini risk assessment before all food intake** – is X alert enough to eat safely? (Consider recent use of PRN, tiredness, level of sedation). If he is not alert: try strategies to increase alertness, i.e. cold drink, moving around; OR encourage him to eat later when alert/ safe.
  3. **Keep things calm and quiet:** Avoid speaking to X during meals. He needs to focus on his breathing and swallowing. He can do thumbs up/ down.

**Medication**

Offer fluids

Liquid or crushed safest

**Room and Position**

Always **sit fully upright** when eating - ideally at a table in a dining chair.

**Mouth Care**

Brush your teeth 2 times every day

**Things to look out for:** coughing, choking (not able to breathe), eye-watering, sneezing, changing colour, turning head away, wet or bubbly sound on voice

**Contact details:** Jena Hall or Frankie Bennett (Speech and Language Therapists) #2992

**Date:** \_\_\_\_\_

John Howard Centre - Clerkenwell Ward

# Modified diet?

## choking awareness !



Diet and fluid modification is not common in this patient group.

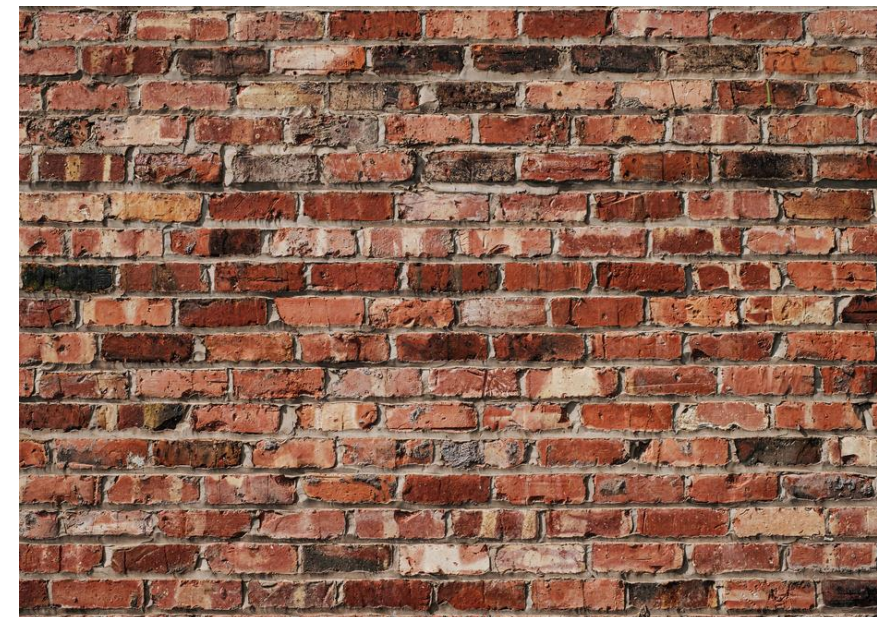
There are a few patients, in these cases SALT will provide tailored support.

We do however often talk about avoiding high risk foods.

Any surprises here?

## Keep in mind...

- Not extensively researched or well understood
- May not be on all staff or patients' radar
- Diagnostic overshadowing
- Communication needs – difficulties reporting symptoms



# Breaking down barriers

## Team work:

Access to specialists –  
SALT (individualised  
support, care plans)

Knowledge is power  
(awareness,  
education and  
training)



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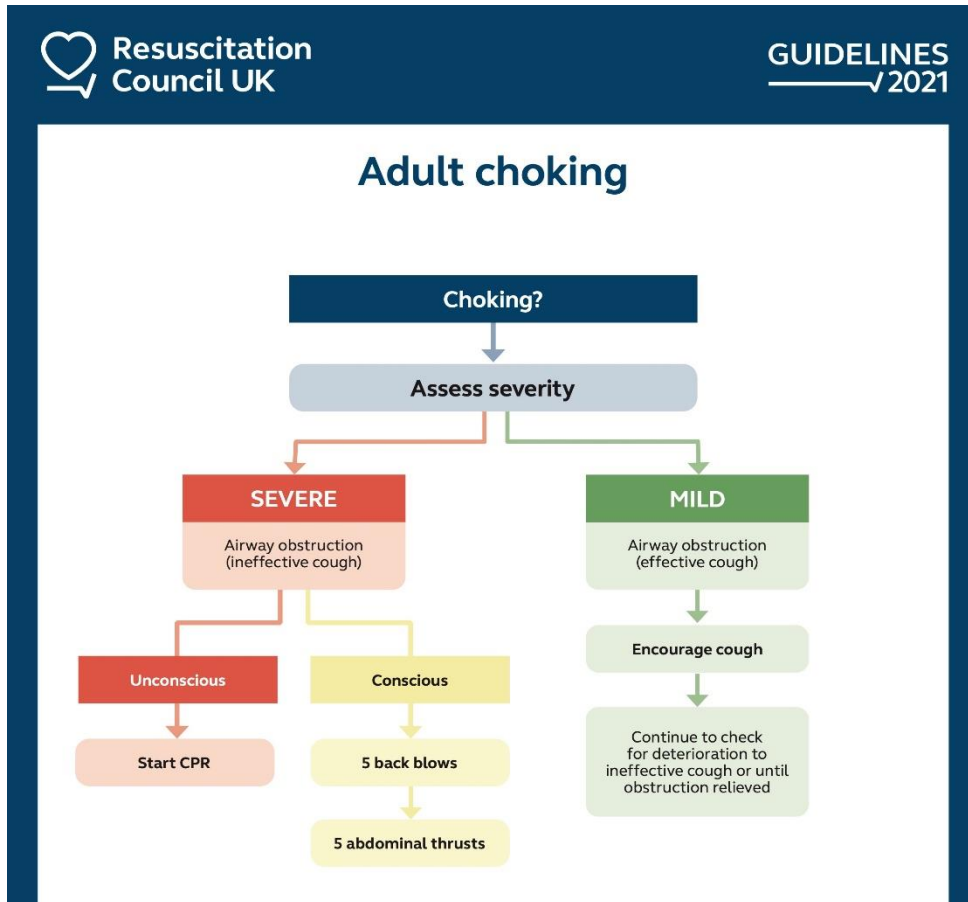
# Things we can all do

## • Stay proactive....

- Be vigilant for changes in presentation or signs of dysphagia
- Promote good oral / mouth care
- Promote physical health monitoring e.g. weight
- Promote safe and pleasant mealtimes
- Monitor
- Be aware and keep learning



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Know what to do if someone chokes

Ensure basic life support up to date

Refresh self on the steps and actions to take



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# Things we can all do

- Promote safe and pleasant mealtimes

What does this mean to you? Brainstorm



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# Summary



There are important links between MH/LD and swallowing needs.

Swallowing needs are likely an underappreciated cause of morbidity and mortality



If you see something say something



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# Thank you for listening!

## Any Questions?



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# Constipation



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## By the end of the session you will be able to :

- ✓ Define constipation and describe the function of the bowel
- ✓ Describe the normal bowel pattern.
- ✓ List reasons patients become constipated
- ✓ Know the length is the Gastro **Intestinal** (GI) tract
- ✓ List the different groups/categories of laxative
- ✓ List the side effect of laxatives
- ✓ Describe the treatment of constipation
- ✓ Describe the serious side effect of chronic constipation, for example Faecal Impaction



# Constipation – a definition.....

- ❖ Difficult to define because it varies from person to person ranges from 3 bowel movements a day to 3 per week.
- ❖ Therefore, important to assess person's norm.
- ❖ As a general rule, intervention should occur if bowels not open for 3 consecutive days or stools are hard and/or person has difficulty or pain during defecation.
- ❖ Stools become hard because the longer stool is in colon, the more water is absorbed – the longer you leave it the worse it is going to get!



# Causes of constipation

- Poor diet – rich in animal fats (dairy and meat) refined sugar but low
- in fibre
- Anorexia, Inadequate fluid intake, dehydration
- Inactivity, immobility, spinal/nerve damage
- Stress, Anxiety, Depression
- Emphysema (inability to increase intra abdominal pressure)
- Diabetes (autonomic neuropathy)
- Alcohol (dehydration)
- Changes in lifestyle
- Poor bowel habits (withholding defecation), intestinal obstruction
- History of laxative or enema abuse
- Painful anal conditions - Haemorrhoids, fissure
- Hypothyroid, Hypercalcaemia, hypokalaemia, hyponatraemia

## Medication –

Analgesics

Amiodarone

Antacids

Anti-diarrhoeals

Antispasmodics

Calcium channel blockers

Calcium supplements

Clonidine

Disopyramide

Diuretics

Iron

NSAID

**Antimuscarinics (procyclidine, oxybutinin)**

Anticholinergics (parkinson, antihistamine)

Anticonvulsants (carbamazepine, gabapentin, pregabalin)

**Antidepressants (tricyclics)**

**Antipsychotics**

**Lithium**

**Methadone**

**Tranquilizers & sedatives**



# Constipation can lead to.....

- ❖ Haemorrhoids
- ❖ Faecal and urinary incontinence
- ❖ Urinary tract infection
- ❖ Urinary retention
- ❖ Rectal bleeding
- ❖ Generalised weakness
- ❖ Nausea and vomiting
- ❖ Impaction
- ❖ Obstruction
- ❖ Perforation/necrosis
- ❖ Reverse peristalsis and faecal vomiting
- ❖ Straining can result in hernia, GI reflux, syncope, angina and TIA (raised intrathoracic pressure leads to reduction in cerebral and coronary circulation)



# International consensus ... Some definitions

*"the frequency of multiple symptoms (straining, hard stools) and/or bowel movement less than 3 times per week. May be accompanied by abdominal pain and/or bloating."*

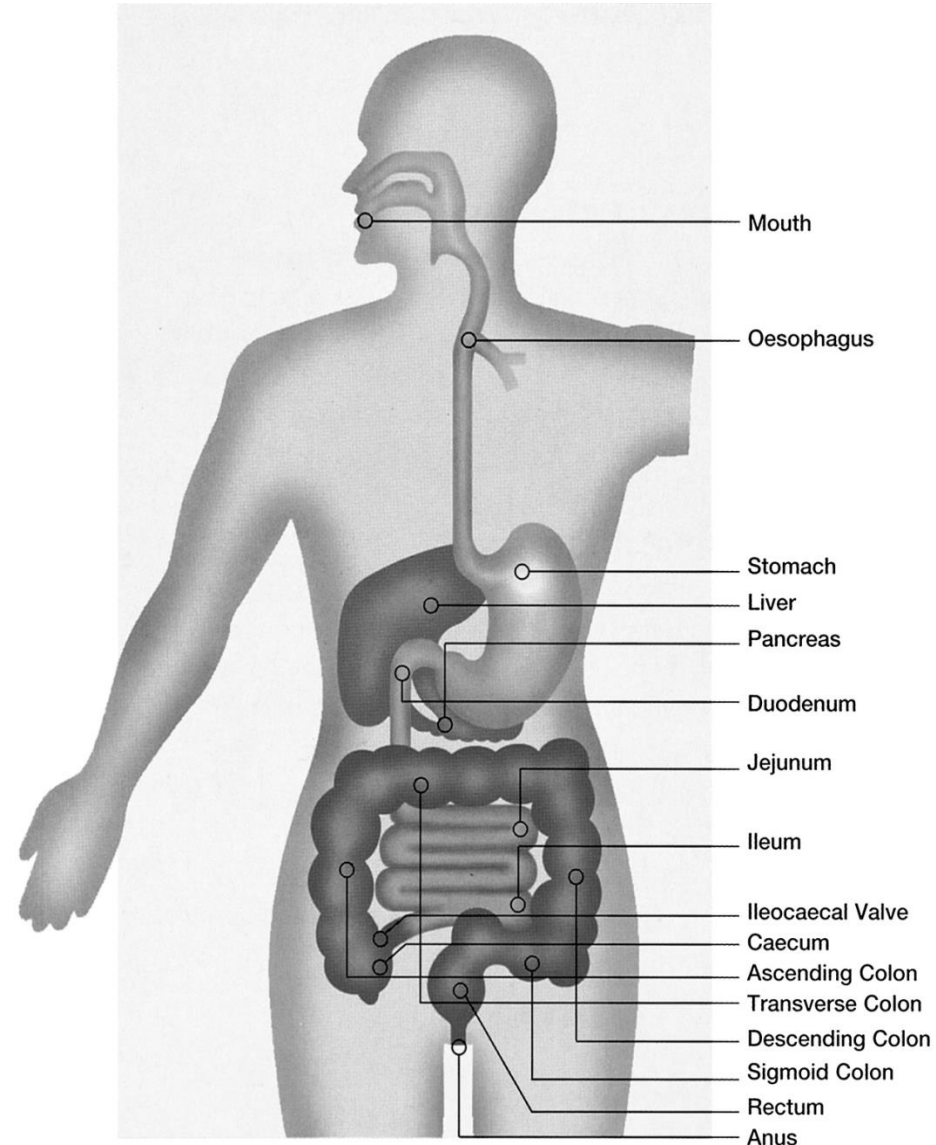
***Constipation is when you have infrequent bowel movement and stool that may be hard, dry and difficult to pass. You may also have stomach cramps, bloating, and nausea.***



# Gastro-intestinal Tract

approx 9m (30ft)  
long

Muscular tube  
controlled by  
autonomic nervous  
system



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# Small intestine:

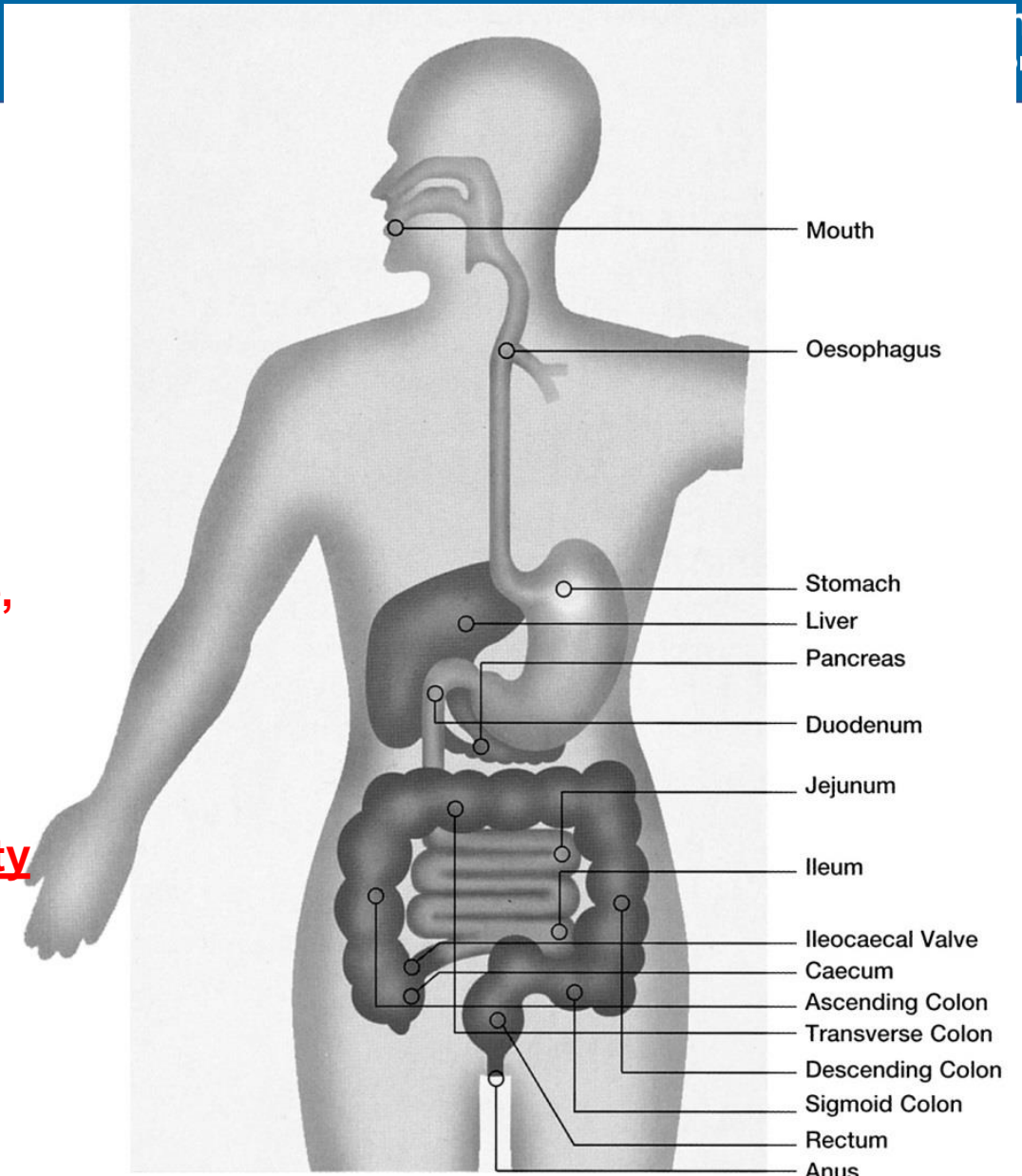
6.5m (21ft) long, 2.5cm (1 inch) diameter

3 segments: duodenum, jejunum, ileum

Main function is digestion and absorption

**Absorbs most of the water, electrolytes, glucose, amino acids, fatty acids from chyme**

**Provides nutrients to the body and plays critical role in water and acid-base balance and immunity**



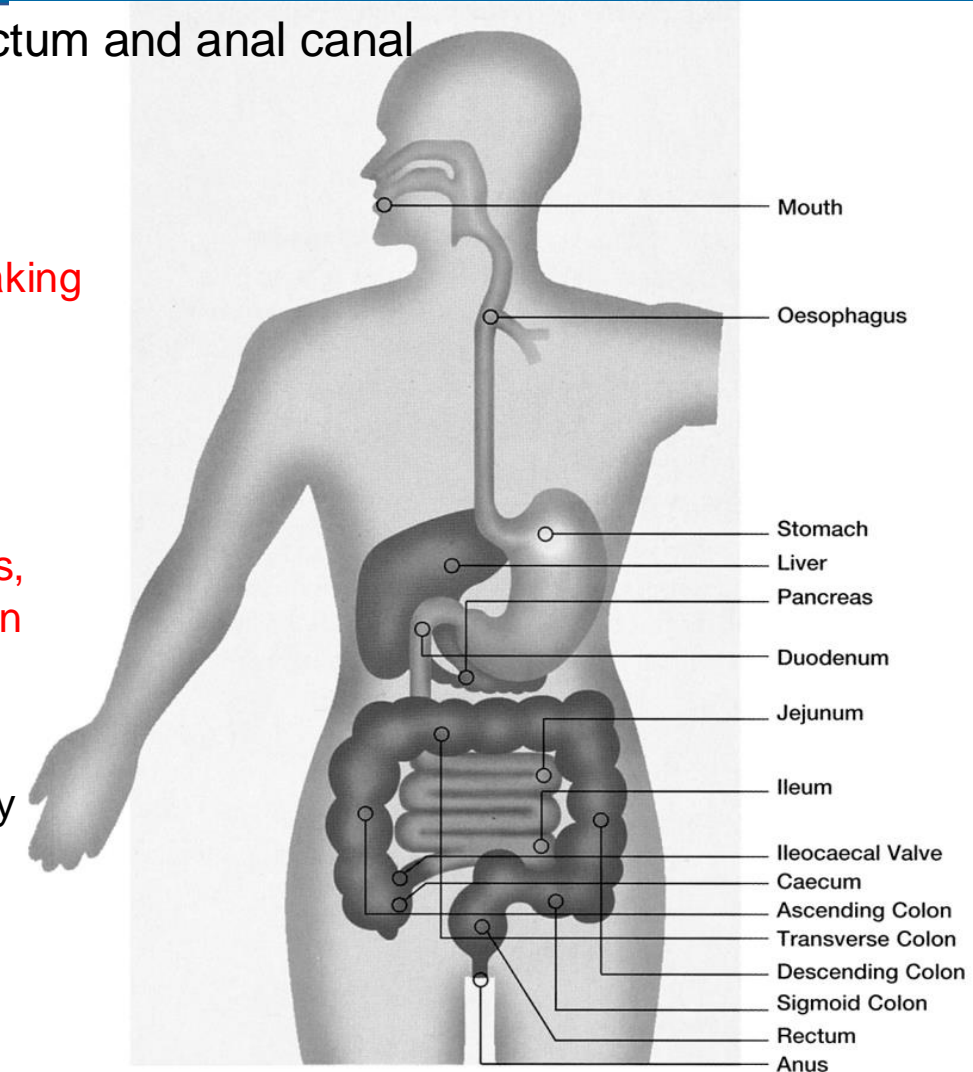
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# Large Intestine

Caecum, ascending, transverse, descending & sigmoid colon, rectum and anal canal

1.5m (5ft) long

- Function is to absorb water from the contents passed from small intestine, producing semi-solid faeces, epithelium produces mucus making it easier to pass stool.
- Also houses bacteria assisting immunity, ferments.
- Carbohydrates which releases hydrogen, carbon dioxide, methane gas, synthesise vitamins (Vit K and some B vitamins) , breaks down bilirubin (gives faeces its brown colour).
- Under autonomic control but external anal sphincter is under voluntary control, supplied by motor nerves from spinal cord.
- Rectum is holding area for the stool – when full it signals the brain to initiate peristaltic wave to push the stool through the anus.



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# Constipation – a symptom not a disease!

**Constipation**



**Faecal Impaction**



**Obstruction –  
electrolyte imbalance, perforation/necrosis,  
sepsis, death**



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## Signs and Symptoms.

- ❖ Nausea and vomiting – feeling of fullness, loss of appetite, nausea
- ❖ Anorexia – leading to dehydration and further hardening of stool.
- ❖ Electrolyte imbalance.
- ❖ Dehydration,
- ❖ Impediment of diaphragm or vagus nerve – hypoventilation, hypoxia, dizziness and sweating.
- ❖ Overflow, explosive diarrhoea.
- ❖ Back pain due to the mass of stool pressing in your lower back.
- ❖ Urinary retention.
- ❖ Swollen and bleeding around the rectum

## Vital Signs

- ❖ Low/high blood pressure.
- ❖ Increase heart rate.
- ❖ High temperature.
- ❖ Swollen Abdomen /distension/pain/rigidity (build up of gas)
- ❖ Inhibits GI function (fluids, nutrients, vitamins, immunity, pH, release of gases)

**If Left untreated leads to Intestinal obstruction**



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# Intestinal obstruction, A medical emergency, Definition

A blockage prevents the normal flow of contents through the intestinal tract; can obstruct the vascular supply to the bowel wall causing necrosis.

- ❖ Explosive or overflow diarrhoea.
- ❖ Dehydration, electrolyte imbalance, confusion, coma, death.
- ❖ May lead to paralytic ileus, gross distension of the bowel and
- ❖ Perforation.
- ❖ Hyper/hypo active bowel sounds.
- ❖ Confusion.....coma.....death.
- ❖ Bowel perforation or necrosis – peritonitis, sepsis, death.
- ❖ Raised white cell count suggestive of bowel necrosis.
- ❖ Dehydration, oliguria and shock suggest perforation.





Small and Large Intestine obstructions	Small intestine	Large Intestine
Constipation – inability to pass a stool and/or flatus for more than 8 hours despite feeling the need to defecate	Pain is spasmodic and colicky	Pain is diffuse and constant
Abdominal distension	Visible peristaltic waves	Significant abdominal distension
High pitched, hyperactive bowel sounds before site of obstruction with hypoactive bowel sounds after, or overall hypoactive; may be absent bowel sounds later	Profuse, sudden, projectile vomiting with faecal odour  Vomiting relieves pain  Metabolic alkalosis with hypoventilation	Infrequent vomiting  diarrhoea around impaction  Metabolic acidosis with deep rapid respiration

**gross electrolyte imbalance, dehydration, metabolic acidosis/alkalosis, confusion, coma, paralytic ileus, perforation, peritonitis, sepsis, death**

**Treatment focuses on fluid and electrolyte balance, decompression of the bowel, bowel rest and relief/removal of obstruction**




**Common cause is faecal impaction and diverticulitis**

# Registered Nurse Assessment for constipation.

- ❖ What is normal for the patient (frequency, amount and timing).
- ❖ When was the last bowel movement? What amount, consistency, colour?
- ❖ Was blood/mucous passed with it? (Bristol chart).
- ❖ Are they passing flatus (wind)? How many times a day?
- ❖ Is there any diarrhoea or leaking of faecal matter?
- ❖ Has the patient been having abdominal discomfort, cramping, nausea/vomiting, pain, excessive gas or rectal fullness, difficulty urinating?
- ❖ Is this symptom a recent change?
- ❖ Is patient eating? What are they eating? How much and what type of fluids are they taking?
- ❖ What medication is the patient taking?
- ❖ Are bowel sounds present? Are they within normal parameters? Is there any abdominal distension?
- ❖ Digital Rectal Examination – is the rectum full? Is the stool hard or soft? Any blood?



# Bristol Stool Chart

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on its surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges (passed easily)
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces. <b>Entirely Liquid</b>

# Patient to see Doctor if...

- ❖ Blood
- ❖ Severe abdominal pain
- ❖ Unintentional weight loss
- ❖ Co-existing diarrhoea
- ❖ Tenesmus (continuous feeling of the need to defecate without production of significant amount of faeces)
- ❖ Failure of previous laxative medicines



# Treatment for constipation

***LAXATIVES IN CHILDREN SHOULD ONLY BE PRESCRIBED BY A HEALTHCARE PROFESSIONAL EXPERIENCED IN THE MANAGEMENT OF CONSTIPATION IN CHILDREN.***

***IF A CHILD DOES NOT OPEN THEIR BOWELS FOR MORE THAN 3 DAYS THERE IS INCREASED LIKELIHOOD OF PAIN, ANAL FISSURE, SPASM AND LEARNED RESPONSE TO AVOID DEFAECATION. EARLY REFERRAL TO PAEDIATRICIAN/SPECIALIST IN CHILDHOOD CONSTIPATION IS REQUIRED***

## **Aim of treatment:**

(NICE computer prescribing system)

- ❖ Establish patient's norm
- ❖ Establish regular, comfortable defecation using the least number of drugs for the shortest possible time (to prevent laxative induced constipation)
- ❖ Prevent laxative dependence
- ❖ Relieve discomfort
- ❖ Identify and treat early (if bowels not open for 3 days)
- ❖ Record bowel movements daily (use Bristol Stool Chart)
- ❖ Ensure adequate fluid intake (1.5-2L per day unless contraindicated)
- ❖ Ensure adequate dietary intake and fibre (must ensure adequate fluid with fibre to prevent intestinal obstruction!)
- ❖ Encourage ambulation



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## Definition

Laxatives are a type of medicine that can treat constipation.

They're often used if side effect of medication cause chronic constipation or illness. Lifestyle changes, such as increasing the amount of fibre in your diet, drinking plenty of fluid and taking regular exercise, should also be encouraged.

## Categories of :

- ❖ Bulk Forming
- ❖ Osmotic
- ❖ Stimulant
- ❖ Rectal
- ❖ Lubricant/softener

## Side effect:

- ❖ Laxatives can contribute to the development of constipation and impaction as they render the colon less sensitive to its .
- ❖ Intrinsic reflexes stimulated by distension.
- ❖ Key to prevention of constipation is a balanced diet, adequate fluids and fibre and exercise



### Bulk Forming

Increase faecal mass which stimulates peristalsis

Useful with small, hard stools (Type 1) but only if dietary fibre can not be increased

Not recommended with opiates

Must have adequate fluid intake to prevent obstruction

Not if GI obstruction

Isphagula husk (Fybogel, Regulan)  
Methylcellulose (Celevac)  
Sterculia (Normacol)

### Osmotic

High osmolarity attracts water into lumen of intestine altering stool consistency, distends bowel inducing peristalsis. May cause cramp, nausea and vomiting, abdominal distension, flatulence

Not for GI obstruction, paralytic ileus

Can be used for impaction

Lactulose – not absorbed systemically hence its use in hepatic encephalopathy

Marcogols (movicol) can not be used if U&E deranged

Milk of magnesia, magnesium salts - Repeated use can cause electrolyte imbalance. If renal impairment can cause magnesium toxicity

Sodium preparations to be avoided in patients with oedema, CCF, hypertension

### Stimulant

Increase intestinal motility, cause cramp

Prolonged use can lead to loss of normal bowel motility

Not if GI obstruction, Not in acute surgical conditions

Excessive use leads to diarrhoea and electrolyte imbalance

Danthron is carcinogenic and only licensed for use in the terminally ill

Senna (Senokot)  
Bisacodyl  
Dantron (co-danthramer/danthrusate)  
Docusate (Docusol, dioctyl)  
Castor oil (obsolete)

### Rectal

Suppositories  
Enemas (large/small volume)

can cause perforation Lubricates and softens impacted faeces and irritant effect stimulates bowel movement. Only Relaxit and Arachis oil licensed for impaction. None licensed for obstruction

Arachis oil – avoid: contains ground nut or peanut oil – high risk of anaphylaxis if nut allergy!

### Lubricant/softener

lubricate mucosa and soften stool , promote water retention in the stool, used with stimulant  
Liquid Paraffin – not to be taken immediately before bed. Anal seepage of paraffin, anal irritation and granuloma. Is absorbed systemically and can cause lipoid pneumonia. Interferes with absorption of fat soluble vitamins (A, D, E, K)



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Laxative	Time to effect	Advantages	Disadvantages	Warnings, additional info/ adverse effects
Isphaghula Methylcellulose Sterculia  <i>Fybogel, Regulan, Celevac, Normacol</i>	2-3 days	Useful as first line in adults when difficult to get adequate dietary fibre. Better tolerated than bran	Need adequate fluid intake to prevent intestinal obstruction Can cause flatulence and abdo distension	Not if difficulty swallowing, intestinal obstruction, faecal impaction, immobility  Must not be taken immediately before bedtime
lactulose	2-3 days	Palatable although some may find it sickly sweet Not systemically absorbed	Adequate fluid intake recommended	Caution in lactose intolerance. Can cause flatulence, cramps and obstruction
Marcogols (polyethylene glycol)  <i>Movicol</i> <i>Laxido</i>	1-3 days	Licensed for use in faecal impaction – 8 sachets in 1 litre of water	Some find it difficult to drink the volume (1 sachet with 125ml water, 1-3 sachets per day), reconstituted needs to be kept in fridge and discarded after 6 hours	Caution in IBD, intestinal obstruction – sits in the bowel Can cause serious fluid and electrolyte shift, heart failure Contains potassium – heart problem no more than 2 sachets an hour



Senna	8-12 hours	Rapid effect	Licensed only for short term use; syrup is unpalatable	Not for use in intestinal obstruction. Can cause abdominal cramp
Sodium Picosulfate <i>Senokot, picolax, dulcolax pico</i>				
Bisacodyl Dantron Docusate	6-12 hours	Rapid effect	Licensed only for short term use; no syrup available	Do not take within 1 hour of antacids, milk or cimetidine as they cause premature dissolving of the enteric coating leading to gastric or duodenal stimulation
Castor oil (obsolete) <i>Co-danthramer, co-danthrusate, Docusate,</i>				Dantron only licensed for terminally ill as is carcinogenic  Can cause cramp, nausea and vomiting  Not for intestinal obstruction
All rectal laxatives				ALL UNLICENSED for faecal impaction except Relaxit micro enema Some people find them undignified

Laxative	Time to effect	advantages	disadvantages	Warnings/ additional info/ adverse effects
Glycerol Suppositories – lubricating and weak stimulant	15-30 minutes	Can be used for hard or soft stools	Licensed for occasional use only	May cause local irritation
Bisacodyl suppositories - stimulant	15-30 minutes	Use for soft stools	Avoid if large, hard stools as no softening effect	May cause local irritation
Phosphate enema - Osmotic  Relaxit micro-enema	5 minutes	Useful to remove hard stools	Unlicensed for faecal impaction Licensed for occasional use only Needs correct administration to prevent damage to rectal mucosa/ perforation Some people find them undignified and unpleasant	Only Relaxit and arachis oil are licensed for faecal impaction. None licensed for obstruction  May cause local irritation

# What to do?

Prevent impaction and obstruction!!!!

Medical emergency

Transport to A&E – NBM, NG tube to decompress bowel, IV fluids to correct dehydration and electrolyte imbalance, watch for necrosis or perforation, may require surgery



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# Prevent dehydration and fluid overload

- ❖ 40% fluid is lost through insensible means (internal and external respiration, skin, faeces, ??hypersalivation).
- ❖ Aim: 2-3L/day, - no less than 1L, no more than 4L per day, no more than 500mls negative/positive balance.
- ❖ <2L - will concentrate blood components.
- ❖ >4L – will dilute blood components: HB, platelets, RBC, sodium, potassium etc

If dehydrated may be aiming for a positive balance 500-800mls,  
if overloaded may be aiming for negative balance 500-800mls



- A patient who is not drinking - observe for stomatitis
- evaluate the input and output balances at least four hourly – the early detection and treatment of an imbalance allows for prompt action to prevent dehydration/overload.
- Interpret vital signs alongside fluid chart. The chart should not be used in isolation.
- The fluid/food chart is a legal document and, in cases of complaint or litigation, can be used as evidence of effective care management.

Service User:

Daily Fluid Chart

Date:|

TIME	FLUID INTAKE (ml) Oral/Enteral/Subcutaneous/IV	FLUID OUTPUT (ml): Urine/Vomit/Faeces/Saliva	BALANCE (ml) -ve/+ve
00.00-01.00			
01.00-02.00			
02.00-03.00			
03.00-04.00			
04.00-05.00			
05.00-06.00			
06.00-07.00			
07.00-08.00			
08.00-09.00			
09.00-10.00			
10.00-11.00			
11.00-12.00			
12.00-13.00			
13.00-14.00			
14.00-15.00			
15.00-16.00			
16.00-17.00			
17.00-18.00			
18.00-19.00			
19.00-20.00			
20.00-21.00			
21.00-22.00			
22.00-23.00			
23.00-00.00			
<b>TOTAL</b>			

# Clozapine and Constipation

- Clozapine has an anti-cholinergic effect, which may affect service users treated with clozapine
- This is one of many medications that has anti-cholinergic properties. ( it inhibits nerve impulses for involuntary muscles)
- Hyoscine Hydrobromide (Kwells®) and pirenzepine are commonly prescribed for the treatment of Clozapine induced hypersalivation and are anti-cholinergic in nature.

## The side effects are;

- slowing of intestinal peristalsis.
- constipation to intestinal obstruction,
- faecal impaction and paralytic ileus which may be fatal.
- Acute obstruction is a medical emergency.

Services Users should be informed of the side effects and given information on medication and ways to manage constipation. These includes adequate fluid balance and eating a high fibre diet, which includes fruit and vegetables ('five a day').



# Evaluation and Questionnaire

Insert link to post course questionnaire and evaluation form



Ask about the  
#ELFTPromise

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