

**History Taking
&
Clinical
Examinations
For
MBChB Year 2**



MEDICAL PROTECTION SOCIETY

Taking a History

Introduction

- Hello, have a seat
- I'm _____ and I'm a second year medical student
- I've been asked to see you before you see the Dr....
- Is it OK if I ask you some questions? – permission

Basic information about patient

- Name
- Age
- Address
- Occupation
- Marital status

Presenting Complaint

- Can I ask why you have come to see the doctor today?

History of presenting problem

- **Physical**

Open questions to obtain a description...

Could you describe to me...

Then focused questions e.g. when, where, how, what?

When Timing: when did it start, when does it occur?

Where Location: where does it start, show me where it is, where does it spread to?

What quality what does it feel like?

How severity: how bad is it?

Timing: onset duration frequency

Setting in which they occur

Precipitating factors: is there anything you can think of that might have brought it on?

Aggravating factors: is there anything that makes it worse

Associated manifestations eg. nausea, vomiting, sweating

Enquiry of presenting system – eg CV symptoms

- **Psychological & Social**

Patients' own perception of what is wrong

Patient's attitudes to problem

Effects on daily life, relationships, work etc

Past Medical History

- Have you had to go to the Dr for anything before?
- Any serious childhood illnesses
- Have you been to hospital before?
- MI/ angina/stroke/ high blood pressure/ epilepsy/diabetes/jaundice /asthma/TB/cancer

- Any operations, accidents or injuries?

Drug history

- Current medication – doses/ frequency/ duration
- Patient's attempts to relieve problem: medication, prescribed, self medication
- Complimentary medicines – eg. herbal remedies.....
- OCP
- Allergies and drug allergies

Family history

- Any history of major illness in your family?
- Illness: ischaemic heart disease, diabetes, asthma etc etc
- Parents: age and cause of death
- Siblings: age and cause of death

Social history and Lifestyle

- Smoking (number per day) / ex? – how has this changed over wks/ years
- Alcohol (units per week) – how has this changed over wks/ years
- Are there any recreational drugs that you use?
- Are you married?
- Children?
- Occupation
- Social circumstances: house, home help
- Housing: who do you live with? Any problems?
- Occupation
- Activities of daily living (ADL) – cooking washing, mobility

Review of systems

- Can I just ask you some questions about your general health?

Respiratory

- * Do you have any breathing problems? Shortness of breath? Wheezing?
- * Cough?

- * Do you ever produce blood or sputum when you cough?
 - Haemoptysis: bronch CA, lung infections (pneumonia / bronchiectasis / TB), CB, pulmn infarction, pulm oedema, pulm vasculitis
- * Sputum: colour /quantity
- * Chest pain
- * Sweats / wt-loss

CVS

- * Do you ever have any chest pain or discomfort, palpitations, ankle swelling?
- * Shortness of breath:
 - Exertional dyspnoea
 - Orthopnoea
 - Paroxysmal nocturnal dyspnoea (PND)
- * Palpitations
 - Reg / irreg; how often does it happen; how long does it last; on effort or at rest; assoc symptoms (dyspnoea, sweating, chest pain, dizziness, syncope)
- * Cold peripheries
- * Dizziness, light headedness

Neurological

- * Do you have any faints or fits, blackouts?
- * Limb weakness, numbness, loss of sensation, tingling, involuntary movements?
- * Any hearing problems, or problems with vision?
- * Language problems/ dysarthria

Gastrointestinal

- * Trouble swallowing, heartburn, waterbrash, loss of appetite, nausea, vomiting, weight loss, pain, foetor
- * How have your bowels been: frequency, colour, recent changes
- * Constipation or diarrhoea, tenesmus

Genitourinary

- * Any trouble with your waterworks?
- * Periods

Musculo-skeletal

- * Muscle or joint pains, stiffness, arthritis, back ache
- * If present describe location and symptoms
- * Swelling
- * Redness
- * Stiffness
- * Weakness, limitation of movement, activity

Summarising

- Summarise the info obtained with patient
- Is there anything else you'd like to talk about?

NB. During the history it is always important to get an idea of the patient's:
Ideas, Concerns and Expectations

General Notes on Examination

Important points to consider when examining any body system:

- ① Introduce yourself
- ② Check / confirm patient's details
- ③ Obtain consent/ explain what you want to do with them
- ④ Adequately expose patient
- ⑤ Position patient appropriately for the examination involved

The examination sequences described below assume that the above five points have been performed.

A common sign seen in many of the examinations is finger clubbing. It is worthwhile mentioning the features and common causes of clubbing in this section:

Finger Clubbing

Three components:

- ① Loss of nail bed angle
- ② Increased curvature of nail
- ③ Fluctuation and swelling of terminal phalanges

Can do the diamond shape test: if loss of diamond then suggests patient is clubbed – called a positive Schamroth's sign

Causes of Clubbing:

- ① Respiratory Causes
 - Suppurative lung conditions: eg CF, bronchiectasis, empyema
 - Mesothelioma
 - Bronchial carcinoma
 - Idiopathic fibrosis alveolitis (previously called cryptogenic fibrosis alveolitis)
- ② Cardiovascular Causes:
 - Cyanotic congenital heart disease
 - Atrial myoxma
 - Late stage infective endocarditis
 - Axillary artery stenosis (gives rise to unilateral clubbing)
- ③ Gastrointestinal Causes:
 - Inflammatory bowel disease: UC and Crohn's
 - Malabsorption eg Coeliac's disease
 - GI lymphomas
- ④ Others:
 - Idiopathic / Familial

Cardiovascular Examination

General Examination

- Does patient seem breathless?
- Is patient cyanosed? (NB. cyanosis defined as >5g/dL deoxygenated Hb)
 - ⇒ Central: look at tongue – will be blue/ purple if there is central cyanosis which is due to ① problem with oxygenation of blood at lungs or ② due to a cardiac shunt
 - ⇒ Peripheral: hands & nail beds → due to problem with peripheral circulation
 - ⇒ NB: the terms central and peripheral do NOT refer to the *site* of the cyanosis but the *process* by which the cyanosis is caused!
- Temperature of extremities
 - ⇒ If decreased blood flow eg vasoconstriction then cold peripheries
 - ⇒ Vasodilatation: warm peripheries
- Thus it is possible (and arguably better) to assess cyanosis only at the hands – if blue and cold then there is peripheral cyanosis and if blue and warm then there is central cyanosis

Nails

- Splinter haemorrhages
 - NB. One or two can be seen in the nails of manual workers (due to trauma) – if multiple then suggests the possibility of infective endocarditis
 - ⇒ They appear as thin splinter-like bleeding areas under the nails
- Nail fold infarcts – these are more specific indicators of vasculitis
- Clubbing: can be caused by respiratory / alimentary/ cardiovascular disorders
 - ⇒ Clubbing → ① loss of nail bed angle, ② increased curvature of nail, ③ swelling of terminal phalanges causing increased fluctuation of nail bed.
- Capillary return – press over nail for 5 seconds – should refill in <2seconds
- Cigarette stains

Face

- Conjunctiva – if pale then suggests anaemia
- Xanthelasma: a yellowish eruption at the inner side of the eyelids and periorbital skin – associated with hypercholesterolaemia in people under 50 yrs → cf. Xanthomas are lipid deposits on tendons, skins, soft tissues etc – also due to hyperlipidaemic states

Pulses

Examine for rate, rhythm, volume and character → would ideally check pulses on both sides: compare

- *Volume*: reflected by the movement imparted to the finger applied gently to pulse
- *Character*: describes the impression of the pulse waveform gained by palpation

⇒ Radial pulse: felt lateral to tendon of flexor carpi radialis and pressed against radius. Especially useful to determine rate and rhythm of pulse

⇒ count pulse over 15 or 30 seconds.

⇒ report back rate, and eg “is regular in rhythm, volume and character”

⇒ Carotid pulse: better to find character and volume of pulse since is from a large artery

⇒ Located at anterior border of sternomastoid and pressed against transverse process of C6

⇒ Normal pulse is between 60-100. Above and below this is *tachycardia* and *bradycardia* respectively

Blood Pressure

- Use appearance of sounds (Korotkoff I) and disappearance of sounds (V) [or muffling IV]
- WHO definition of hypertension is BP > 160/ 95

Jugular Venous Pulse

- Use the right internal jugular vein: provides information on right atrial pressure (ie central venous pressure)
 - There are no valves between RA and internal jugular vein, thus degree of distension in vein reflects intra-atrial pressure of right heart.
- Internal jugular vein runs down deep to between the two heads of sternomastoid from angle of jaw to mid-clavicular line (thus can only be examined when neck muscles are relaxed)
- Actual vein is not visible – a diffuse pulsation is seen. This cannot be palpated.
 - NB. The ext jugular vein is visible but not examined since is prone to kinking and partial obstruction as it passes through the deep fascia of the neck

JVP Examination sequence

- Patient at 45°
- Patient turns head to left to relax muscles (head resting on support)
- Look for pulsation
- Measure vertical height in cm between top of venous pulsation and sternal angle (normal <4cm)
- NB. JVP increases upon compression over liver (abdomino-jugular reflux) → can be used to aid identification of pulsation. JVP decreases upon inspiration.

- Heart failure: raised JVP, hepatic enlargement, oedema, basal lung creps
 - To check peripheral oedema: press firmly over tibia for few seconds and remove – depression?
 - If pt has been in bed for long time press over sacrum instead

Precordium

Inspection:

- Look for any deformities, scars (midline often cardiac), visible pulsations

Locate apex beat:

- This is the downmost, outermost point at which pulsation can be felt (not the point of max pulsation)
- Its site is not a good way to assess cardiac size but to assess character. If displaced can say that suggests enlargement but *should be confirmed with CXR or ECG*
 - If displaced, may also be due to eg. mediastinal shift
- May be unable to feel in apex in 1/3 of normal pts, obese pts and pts with emphysema
- Turn patient to their left hand side to help find apex beat and to assess its character
- Define position: usually 5th intercostal space at mid-clavicular line (first space one can feel is first intercostal space / space just below sternal angle is 2nd i/c space)
- Judge character: apical heave (LVH), diffuse, weak impulse (dilated failed LV)

Left Parasternal Impulse

⇒ Place hand at left sternal border and bend elbow: if strong heave – possible RV enlargement

Throughout palpation of precordium, feel for 'thrills' → palpable murmurs ie turbulent blood flow

Auscultation

- 1) Apex: with bell (best for low-pitched sounds such as murmur of mitral stenosis)
Will hear S1 – closure of mitral AV valve
 - 2) Lower left sternal edge – with diaphragm
S1 – tricuspid AV valve
 - 3) Upper left sternal edge – with diaphragm
S2 – closure of pulmonary semi-lunar valve (ie end of systole)
 - 4) Upper right sternal edge – with diaphragm
S2 – aortic semi-lunar valve closure
- Also auscultate over carotids and where appropriate into axilla...

- S1 (atrio-ventricular valve closure) best heard at apex, S2 (semi-lunar valve closure) best heard at upper L sternal edge.
- Listen for S1, S2, extra heart sounds (3 and 4) additional sounds (eg clicks & snaps), pericardial rubs and murmurs
 - S3: rapid ventricular filling
 - S4: atrial systole

Murmurs

- Due to turbulent blood flow in the heart – either ① valve abnormality or ② normal valve but with increased flow/ volume of blood passing across ('innocent murmurs')
- When describing murmurs give:
 - Timing: systolic / diastolic / pansystolic → ie must time with carotid pulsation
 - Radiation: must find out where it radiates
- Murmurs are not that important to know about or 2nd year OSCE
- Must do 2 manoeuvres to help hear a murmur:
 - 1) Aortic regurgitation best heard when patient sits forward, breath held in expiration → listen to LLSE with diaphragm
 - 2) Mitral problems: best hear with patient on LHS using bell of stethoscope
- In OSCE perform these 2 murmurs even if you have not heard a murmur in the first place

Cardiovascular Examination: Summary

- ① Introduce yourself
- ② Check patients patient details
- ③ Obtain consent/ explain
- ④ Adequately expose patient
- ⑤ Position patient semi-recumbent (45°)

Inspection:

- Breathlessness
- Cyanosed – peripherally and centrally
- Temperature of extremities
- Conjunctiva, xanthelasma
- Nails – clubbing, splinter haemorrhages, nail-fold infarcts, capillary return
- Oedema

Pulses:

- Radial pulse – rate/ rhythm
- Carotid Pulse – volume/ character

Blood pressure

JVP

Precordium:

- Inspection – visible pulsations, deformities, scars etc
- Apex beat – location and character
- Left Parasternal Impulse, thrills

Auscultate:

- Apex (bell), LLSE, ULSE, URSE (diaphragm)
 - ❖ Go into axilla and carotids to assess murmur radiation
- Pt on left – mitral valve problems
- Pt breathing out and leaning forward – aortic regurgitation

Gastrointestinal Examination

When asked to examine the abdomen in an exam, remember to start with the hands and work towards the abdomen. As always, examination starts with...

Inspection

- Look at the nails for:
 - Pitting: seen in psoriasis
 - Koilonychia (spooning): sign of iron-deficiency anaemia – ?malnutrition
 - Clubbing: liver disease / inflammatory bowel disease
 - Leuconychia (white discoloration): seen in hypoalbuminaemia (eg in liver disease)
- Palms:
 - Erythema: eg in (alcoholic) liver disease
 - Pale palmar creases (eg anaemia)
- Hands:
 - Dupuytren's Contracture (drawing in of fingers due to fibrosis of palmar fascia) → is associated with alcoholic liver disease / working with heavy machinery.
- Head, neck eyes:
 - Anaemia/ jaundice (skin and sclera) – bilirubin binds to elastin which is found in abundance in the scleral tissue so is best seen here
 - Look at mouth for evidence of pigmentation / ulcers (inflammatory bowel disease)
 - Look at corners of mouth for cracking – again a sign of vitamin deficiency
 - Angular stomatitis – inflamm at corners of mouth – anaemia
 - Tongue – can show vitamin deficiency → Vit B12 deficiency: tongue is red, smooth and beefy, anaemia: tongue is pale
- Spider naevi – small telangiectases with radiating small vessels from central arteriole – found above nipple line – upon blanching they fill from middle – is considered abnormal to have >5 → liver disease / pregnancy
- Supra-clavicular nodes: enlarged left node (Virchow's node) indicates GI metastasis – usually gastric cancer (this phenomenon is termed Troisiers' sign)

For the rest of the examination the patient should be positioned **supine**, arms by side → expose abdomen, cover groin...

- Note shape of abdominal wall at rest: young patients are usually mildly concave. As get older then it becomes more convex.
 - Marked convexity may suggest patient is distended:
 - The 6 F's – flatus, fat, foetus, fluid, faeces, fibroids
 - Fluid in abdomen goes to flanks when patient is supine
 - Gaseous distension of abdomen is most obvious centrally.
 - To view this, stand at foot of bed. From this position, one can also look for asymmetry associated with a mass in the abdomen.
- Note movement of abdominal wall with respiration (if absent then think of peritonitis)
 - In such a patient, asking to them to cough will elicit localised pain at the site of inflammation – a useful surgical sign.
- Bruising – may indicate advanced liver disease (liver not making coagulation factors)
- Scars (know some names)
- Any pulsations (abdominal aortic aneurysm)

Superficial Palpation

- Make sure you are kneeling by patient's bed so that you are palpating at the same level as the patient's abdomen
- Start in L iliac fossa and move to L flank to umbilical to R flank to R iliac fossa to suprapubic/hypogastric (or other way around)
- Purpose of this part is to elicit any signs of tenderness – thus is vital to look at patient's face
- Feel for guarding – muscles are tight at site of tenderness.
 - Detection of guarding usually implies a source of pain usually inflammation and deep to the examining hand.
 - Check with *rebound tenderness* → press deeply and suddenly release pressure-exacerbation of pain for patient upon release (since inflamed tissue moves against the inside of the abdominal wall)
- NB. If patient tells you about pain, palpate opposite to the site and work towards it.

Deep Palpation

- Purpose: to elicit mass lesions in the abdomen and to determine the characteristics of such a lesion:
 - Include: size, shape, edge, surface, consistency, tenderness, pulsatility and its relation to surrounding structures.
- Perform deep palpation all over

After this general examination specific examination of liver, spleen and kidneys must be performed.

Liver:

- Anatomically, liver resides entirely within costal margin from a level just below the right nipple to edge of rib cage. As it enlarges, it moves towards the right iliac fossa. So examination begins here.
- Feel liver – right hand placed on R iliac fossa. Patient takes deep breath to descend diaphragm. Feel for edge of liver with examining fingers/ edge of finger.
 - The hand is sequentially moved up towards the costal margin as patient takes deep breaths to allow liver edge to be examined.
 - Move hand parallel to costal margin to feel edge of liver. Should not normally be palpable.
 - If palpable in R iliac fossa – enlargement
 - If you think you have detected an enlarged liver, it is important to confirm the upper border of the liver remains at approx the level of the right nipple by percussion. This is because it is possible for the entire normal liver to be pushed downwards by over-expanded lungs.
 - If palpable then describe eg texture, edge, tender, pulsatile...

Spleen:

- Located entirely behind L rib cage ie only palpable when enlarged 3 to 5 times
 - Once it reaches this size, it continues to expand in the direction of the R iliac fossa, so examination begins here with the fingers pointing to the tip of the left shoulder.
 - Once again, patient takes deep breath to allow examining fingers to feel the moving spleen – it may be possible to detect a splenic notch along the medial side of such an enlarged spleen
 - When the examiner gets to the costal margin, he may be able to feel the tip of a moderately enlarged spleen by placing the left hand around rib cage and pulling it forwards while examining during inspiration with the right hand (patient turned slightly to one side)

Kidneys:

- Lie in a retro-peritoneal position. Can be felt in thin people.
- If enlarged then easily palpable as they move with respiration
- Examination technique
 - Use 2 hands – one (left) behind in flank to push or *ballott* kidney
 - Right hand is on top – the watching hand (used to palpate)
 - Repeat on other side
- Enlarged if polycystic kidneys, amyloidosis...

Percussion

- Dull over (enlarged) spleen/ liver – dull to percussion compared to resonance of gas-filled abdomen.
- Can be used to check presence of intra-abdominal fluid, termed *ascites*
 - Moderate amounts of fluid will gather in the flanks
- Percuss, (parallel to chest sides) starting from resonant centre of the abdomen and move towards flank. One will reach an area of dullness over fluid and this should be marked.
 - If patient is then rolled slightly to one side, the fluid will maintain a horizontal position with respect to earth. By repeating percussion as before results in a different site of change from resonant to dull. This new site is marked.
 - This physical sign is called SHIFTING DULLNESS and is seen in patients with advanced liver disease.

Fluid Thrill:

- Ask patient to press edges of both hands down midline of abdomen (pressure stops transmission of wave through fat)
- Tap one flank sharply with fingers → feel opposite flank for an impulse transmitted through fluid
- Easily palpable impulse suggests ascites

Auscultate

- Purpose: to detect presence/ absence of bowel sounds
- Normal: clicks/ gurgles 1 every 5-10 seconds
- Abnormalities:
 - If no sounds: suggests peritonitis
 - If high tinkling sounds: obstruction
 - Hyperactive sounds: hyperperistalsis eg in diarrhoea
- Also want to listen for other sounds but not so much for your OSCE eg aortic bruit

Abdominal examination ends with examination of hernial orifices, the femoral arteries, the perineum, the genitalia, rectal and pelvis examination – so ALWAYS OFFER TO PERFORM THIS!

Rectal Examination

- Explain to patient
- Get patient to lie on their left side (lateral decubitus position) and bring knees to chest
- Gloves, lubricant
- Inspect external anal orifice: skin tags/fissures, piles, ulcers
- Finger in – feel all around – prostate felt in males in anterior wall (describe shape, outline etc)
- Posterior wall – tip of coccyx and sacrum usually palpable
- Feel for any other masses.
- Withdraw finger – inspect → ?melaena.
- Wipe down

Abdominal Examination: Summary

- ① Introduce yourself
- ② Check patients patient details
- ③ Obtain consent/ explain
- ④ Adequately expose patient
- ⑤ Position patient as flat as comfortably possible

Inspection:

- Nails – pitting, koilonychia, clubbing, leuconychia
- Palms – erythema, pale creases, Dupytren’s contracture
- Eyes – sclera → jaundice
- Mouth – pigmentation, tongue, corners
- Lymph Nodes
- Abdominal wall – shape/ symmetry, movement, bruises, scars, icterus

Superficial Palpation:

- All over – tenderness?
- Rebound tenderness

Deep palpation:

- All over
- Liver (percuss if enlarged)
- Spleen
- Kidneys

Percussion:

- All over
- Incl: shifting dullness – ascites

Auscultation:

- Bowel Sounds

Motor System Examination

General:

- Patient should have most clothes off to be able to see muscles
- Patient often complains of weakness
- Important to assess pattern of weakness

	UMN lesion	LMN lesion
<i>Weakness</i>	Yes (characteristic distribution)	Yes – marked
<i>Tone</i>	Increased – spastic paralysis	Decreased – flaccid paralysis
<i>Wasting</i>	No (may be disuse atrophy)	Yes
<i>Reflexes</i>	Increased (hyperreflexic)	Decreased/ Absent
<i>Plantar response</i>	Abnormal	Normal
<i>Fasciculations</i>	No	Yes

OBSERVATION

Muscles: general comment on musculature:

- Wasting of muscles? Where is wasting seen?
- Tremors? → Resting / Intention
- Scars?
- Look at all muscle groups while patient is supine: intrinsic/extrinsic muscles of hands, look at arms, legs, chest...
- Look for overgrowth/hypertrophy of muscles: (muscular dystrophy → pseudohypertrophy of calves)

Look for fasciculations: (twitches under the skin due to spontaneous contraction of muscle units). Disorder of anterior horn of spine (but can come on after exercise in normal individuals – common)

ASSESS TONE (incrs / decrs / normal)

- Ask patient to relax
- Shake patients hand and support patient's elbow with other hand: move through various movements e.g. back and forth to chest, hand from side to side
- There should be relaxed passive movements
- Disorders affecting UMN → resistance to passive movements
- Assess tone in lower limbs by rolling legs gently back and forward – hands on either side of knee (also look at opposite leg while doing this to see if it moves while you are moving the first leg – occurs if there is increase in tone)
 - Draw patient's leg across bed e.g. toward self and see if other leg follows
- Also examine for clonus:
 - Occurs in patients with brisk reflexes and increased tone (upper motor neuron disease)
 - Place fingers across ball of foot and jerk backwards quickly and forcibly. See if there is any sustained jerk

- Hypertonias:
 - 'Clasp-knife' → pyramidal lesion → high resistance to initial movement, then sudden release - ?UMN lesion
 - 'Lead-pipe' rigidity → extra-pyramidal lesion → resistance throughout range of movements - ?Parkinson's
 - 'Cogwheel' rigidity → 'lead-pipe' + tremor - ?Parkinson's
- Hypotonias:
 - LMN lesion, ?cerebellar lesion, *recent* UMNL (eg first days after stroke)

ASSESS POWER

Start at shoulders – work proximo-distally to hands: stretch fingers ? “ don't let me push your fingers together” etc etc

REFLEXES

Use tendon hammer

- Relax patient
- Explain what you are doing
- Strike your finger not patient
- Can use reinforcement techniques (Jendrassik's manoeuvre) if cannot elicit
 - Increase arm reflexes: clench teeth
 - Lower leg reflexes: pull hands apart
- Reflexes graded from 0 when absent to 3 to pathologically brisk : 2 or 1 = normal state

Upper limbs

- Strike supinator (C5/6), biceps (C5/6) and triceps (C7/8) tendons and looks for contractions of respective muscles

Lower limbs

- Knee (L3/4): flex knees and support with arm. Strike tendon just below patella.
- Ankle (S1/2): strike Achilles tendon or place palm of hand on sole of foot (fingers pointing to bottom of foot) and strike hand
- Plantar (Babinski) response: Normal → flexor response → toes goes down
 - Abnormal (spine/cerebellar disorders) → extensor response: (anxious patient may withdraw foot giving impression of extensor response)
 - Warn patient it may be uncomfortable
 - Run stimulus along lateral edge of foot and along the ball of foot

CLUMSINESS

- Any involuntary movements
- Usually not significant but does require examination
- Clumsiness: feature of cerebellar disease
- Symptoms arising from cerebellar hemisphere → clumsiness down one side of body

Test for finger nose ataxia

Upper limb:

- Touch tip of my finger with your finger then touch the tip of your nose
- At first keep finger still then move finger about
- Observe smoothness of movement: look for tremor/ failure to hit target

Lower limb:

- Ask patient to run heel up crease of trousers of other leg → assess fluidity of movement

RAPID ALTERNATING TASKS

Upper limb:

- Take left hand and tap two side of hand getting faster and faster → ?dysdiadochokinesis

Lower limb:

- Tap heel of foot as fast as possible on examination couch to produce regular fast beat

ROMBERG'S SIGN

- Is a neurological test of joint position sense (proprioception) – NOT cerebellar function
- Positive in patients with sensory ataxia
- Perform in two stages:
 - ① Patient stands with feet together, eyes open and hands by the sides
 - ② Patient closes the eyes while the examiner observes for a minute (but examiner must put arms on either side of patient ready to catch them if they fall)
- Romberg's test is positive if: patient can stand with the eyes open and falls when eyes closed
- Negative if patient falls when the eyes are open/ sways with eyes closed
- Test assesses sensory inputs to balance: JPS and vision
- Patients with cerebellar ataxia: will be unable to balance even with the eyes open: therefore the test cannot proceed beyond the first step and no patient with cerebellar ataxia can correctly be described as Romberg's positive
- Romberg's test is positive in conditions causing sensory ataxia such as:
 - Conditions affecting the sensory nerves (sensory peripheral neuropathies)
 - Conditions affecting the dorsal columns of the spinal cord such as tabes dorsalis

GAIT

- Walking tandem gait
- Any evidence of ataxia?

Motor System Examination: Summary

- ① Introduce yourself
- ② Check patients patient details
- ③ Obtain consent/ explain
- ④ Adequately expose patient
- ⑤ Position patient appropriately for body part under examination

Inspection:

- Musculature – wasting / hypertrophy
- Scars
- Fasciculations

Tone:

- Upper limb: 'shake hands'
- Lower limb: roll legs / draw leg across
- Lower limb: clonus

Power

Reflexes:

- Upper limb: biceps (C5/ C6), triceps (C7/ C8), supinator (C5/ C6)
- Lower limb: knee (patellar tendon – L3/4) and ankle jerk (Achilles tendon – S1/2)
- Plantar/ Babinski response

Clumsiness:

- Upper Limb: finger nose ataxia
- Lower Limb: run leg up other shin

Rapid Alternating Tasks:

- Upper Limb: tap hands
- Lower limb: tap heel of foot

Romberg's Sign

Tandem Gait - ?ataxia

Musculoskeletal Examination

Four Main Symptoms:

- Pain
- Swelling
- Stiffness
- Loss of function inc altered stability (eg locking / giving way)

Purpose of examination is to find out where these symptoms are arising

General rule: Look, feel, move

4 components need to be assessed (as part of a regional functional unit)

- Gait
- Arms: hands, wrists, elbows, shoulders
- Legs: hip, knee, ankle, feet
- Spine

REMEMBER: **GALS**

- Follow: **Look, Feel, Move** pattern of examination
- When moving get pt to do it first (Active) and then you do it for the pt (Passive)
- When inspecting joints look for:
 - Deformity, swelling, redness, scarring, skin rashes, wasting, hypertrophy, fasciculations
- When feeling and moving joints feel for:
 - Any tenderness, warmth, crepitus (cartilage damage or foreign body in joint), swellings, deformities...

GAIT

- Ask patient to walk across the room, then turn and come back again
- Many types of gait due to abnormalities in musculoskeletal or neurological systems
- Ask patient to walk across the room, then turn and come back again
- Observe posture, balance, swinging of arms and movement of legs
- Ataxic Gait: lacks coordination with reeling and instability → cerebellar dysfunction – pts usu compensates with wide based gait
- Antalgic Gait: eg pain in lower limb (foot, ankle, knee, hip) causes limp on one side
- Trendelenberg's Gait (waddling): weakness/wasting of extensor muscles around hip
 - Confirm by the following Trendelenberg test:
- Ask patient to stand on one leg. Look for Trendelenberg's: sign - hip dips to opposite side
- Shouldn't tilt to other side due to gluteal muscles and other extensor muscles of left hip that fix pelvis on that side.
- Positive Trendelenberg sign seen in : ① weakness/wasting of extensor muscles around affected hip, ② unstable hip itself eg congenital dislocation
- Walk heel to toe (tandem walking): observe posture, balance, swinging of arms and movement of legs – may reveal ataxia

UPPER LIMB

Hands:

- Nails: clubbing, pitting (psoriasis), onycholysis (keratin deposits under nail bed), nailfold infarcts, splintered haemorrhages etc
- Turn hand over – muscle definition of thenar and hypothenar eminences
 - Wasting e.g. carpal tunnel syndrome: median nerve compression → wasting of thenar eminence and sensory disturbance on median nerve distribution of hand (thumb, index, middle and half of fourth finger)
- Dupuytren's Contracture
- Colour, quality of skin - erythema of the palm (liver disease, pregnancy, occupation, rheumatoid arthritis)
- Joints: each joint of finger
 - Metacarpal joints by squeezing the hand from each side between thumb and fingers
 - Palpate the medial and lateral aspects of each PIP and distal interpharyngeal joint between thumb and index finger
 - Swelling of DIP, Proximal Interphalyngeal joints, metacarpal interphalyngal joints
 - Boggy: thickened and inflamed synovium (rheumatoid arthritis)
 - Bony: new bone formation (osteophytes in osteoarthritis) (Heberdens / Bouchards)
 - Ask patient to make a fist, with thumb across knuckles, then extend and spread fingers
 - Modality of movement in fingers- should close smoothly - tests flexion and extension
 - May see RA signs → Swan neck/ Boutonniere fingers, Z deformity of thumb, ulnar deviation (subluxation of MCP joints) etc

Wrist:

- Look at back of wrist and then turn hand over to look at palmer aspects of wrist (volar surface)
- Joints: redness, swelling, temp, boggy / bony
- Put hands together in Hindu greeting and bring down
- Cock wrists up and down (extension / flexion) – repeat passively
- Abduction and adduction – active then passive

Elbow:

- Look as before incl biceps and triceps muscle definition
- Slide hand up to elbow on both sides to feel for nodules
 - Nodules on bony prominences often around elbow and on extensor surfaces of any bony prominences in body (esp in rheumatoid-arthritis)
- Identify medial and lateral epicondyles
- Movement
 - Bend and straighten elbow (flexion / extension) [ulnarhumeral/ radiohumeral joints] → degree of hyperextension normal
 - Pronation and supination [supr radioulnar joint] – active (get pt to keep elbow extended and position palms towards ceiling (supination) and to floor (pronation). Passive (thumb on radiohumeral joint and twist hand slightly from side to side) – feel for crepitus etc as before

Shoulder:

- Observe shoulder and shoulder girdle anteriorly and scapulae and related muscles posteriorly
- Contour of shoulders – symmetry of height (scoliosis may elevate one shoulder)
- Bony landmarks of clavical, acromion, coracoid process and greater tubercle of the humerus
- Move: hands behind your head: Tests: Abduction / Extension / External (lateral) rotation
 - Watch for smooth, fluid movement
 - Weakness/soft tissue changes from tendonitis, rotator cuff injuries
- Put hands behind your back as far up as you can: Tests: Adduction / Extension / Internal rotation

Cervical Spine:

- Can you look up to the ceiling? – extension
- Can you look down at the floor? – flexion
- Can you turn your head to the right/left? – rotation
- Can you try to put your right /left ear on your right /left shoulder without raising your shoulder? – lateral flexion
- Also test these movements passively: greater movement can be elicited

LOWER LIMB

Hip: (Lie pt flat on couch)

- If hip pain must Ex knee too!
- Sore hip position is external rotation with some flexion!
- When feeling for tenderness also feel into groin (femoral head) and greater trochanter area
- Range of movement = flexion (ileopsoas), extension (gluteals), abduction, adduction and rotation
- Are right and left legs of equal length?
 - Measure leg length
 - **Apparent:** measure from umbilicus to medial malleolus on each side
 - **True:** anterior superior iliac spine to medial malleolus on each side
 - Arthritis: loss of joint space & shortening of leg on that side
 - Collapse of femoral head (shortening of limb on that side)
 - To compensate for above: pt tips pelvis to affected side resulting in a scoliosis
 - If one leg is shortened and patient compensates by tilting to this side no difference would be detected when measuring apparent leg length, but if true length measured difference will be obtained
- Palpate hip for local tenderness etc as before
- To quickly assess if hip pain do slight rotation of each leg first
- Active movements:
 - Can you raise your leg as high as you can and down again? Flexion
 - Can you move right leg across left and then left across right? Adduction
 - Can you move right leg out and in again? Abduction
 - Can you rotate foot out and then in again as far as it will go? External and Internal rotation
 - Normally 45⁰ each direction
 - Lie patient on side bring leg behind them Extension
- Passive movements:
 - Fix pelvis on contralateral side (hand on anterior superior iliac spine)
 - Take leg out laterally with other hand holding ankle - abduction
 - Feel when pelvis begins to tilt (at extremity of movement)
 - Abnormality – tilt is felt very quickly
 - Put one hand on anterior superior iliac spine on same side and move one leg over other – adduction
 - Lift leg straight up on both sides, holding ankle and hip - flexion
 - If there is no knee problem flex knee to 90 degrees:
 - Lie pt on side – bring leg straight back behind patient and towards examiner while lying on each side
 - One hand on hip/ upper thigh, one hand on lower leg – extension
 - Patient lying on back again - roll leg gently, flicking from side to side one hand above knee and one below (“let your leg go loose”) – Medial and lateral rotation (aka: external and internal rotation) Look at movements of foot to detect difference in hip joints
 - Can also assess internal rotation by a dial test → pt lies on their front, knees together and flexed → you push knees apart keeping knees together

Knee:

- Look for muscle wasting of quadriceps muscle → compare both sides
- Profile of knee joint → look / feel: swelling, scars, rash, warmth, boggy/ bony etc
- Genu varus (knees going in) vs genu valgus (going out)
- Movement: bring heel to bum → normal range is approx 120° (?crepitus when passive) – Flexion
- Pressing down on thigh and lifting beneath ankle Extension / Hyperextension
- Patella tap
 - Push fluid out of suprapatellar pouch by pushing tissues down towards knee
 - Push forcibly on patellar cap, when you feel it clunk against femoral condyle, when release fingers it springs up again - can only elicit this when mod amount of fluid is present in knee
 - If smaller amount of fluid then ballot fluid from side to side, pressing and moving knee cap about (also wont get tap if too much fluid/ too tense)
- Check stability of knee joint anterior and posterior instability (cruciates)
 - Flex knee to 90°, sit on foot
 - Hold calf with thumbs either side of tibial tuberosity/ fingers at back and push/ pull
 - Feel for instability, laxity
- Lateral and medial instability (collaterals)
 - Check with knee both straight and slightly flexed
 - Left hand on thigh and force knee in either direction with other hand above ankle
- McMurray's Test: test menisci stability by flexing knee and trying to grind menisci by pushing knee and foot towards each other – looks at pts face for apprehension (also do this by flexing knee and hip and externally rotating tibia and give valgus strain to knee while gradually extending knee – look for any clicking/ pain in medial side of knee – repeat with internal rotation for lateral menisci)

Ankle:

- Active: Cock up foot and move down – Dorsiflexion (extension) / Plantarflexion (flexion)
- Repeat passively
- Then passive movement of talo-calcaneal joint
 - Lift leg off bed grip with one hand around heel and rotate and rock with other – Rotation
- Sub-talar joint
 - Grip with one hand above ankle and swivel foot from side to side with other hand – Eversion and inversion

Foot:

- Toes deformity – claw / mallet/ hammer toe. Hallux valgus commonly seen.
- Nails – as before
- Soles of foot: Pey's planus (foot flattened with loss of longitudinal arch of foot) cf Pey's Cavus
 - Callosities under metatarsal heads indicating subluxation of joint
- Tenderness of metaphalangeal joints by squeezing together and palpate toes for tenderness
- Squeeze each side of toes between finger and thumb- check IP joints for swelling etc
- Lift foot up and press at insertion of Achilles' tendon at bottom of heel
 - Look for pain/ tenderness on pts face → Achilles' tendonitis
- Press on sole of foot at heel with thumb → plantar fasciitis

SPINE/ POSTURE (of thoracic and lumbar – cervical already completed)

- Ask patient to stand - observe skin and posture
- Normal spinal curvatures (look at pt side on):
 - Cervical concavity (cervical lordosis)
 - Thoracic convexity (thoracic kyphosis)
 - Lumbar lordosis (concavity)

- Side to side curvature of thoracic and lumbar spine - scoliosis
- Feel lumbar spine for movement between vertebrae - ?Tenderness → ?Fracture
- Check shoulder heights of not already done so
- Birthmarks, hairy patches portwine stains may overlie bony defects e.g. spina bifida
- Exaggeration of thoracic kyphosis (most common posture abnormality – bent forward with stoop)
- Ask patient to bend over to touch toes – Flexion (at lumbar spine: lumbar lordosis is abolished)
 - Check if actually spine moving or just hips by Schoeber's Test
- Can you bend back towards me as far as you can go (support patient's back) - Extension
- Can you slide your left hand down your side as far as it will go? - Lateral flexion
- Ask patient to sit down (fixes pelvis) - can you twist around to left, and then to right? Rotation (occurs at thoracic spine)

GALS SCREENING:

NB. This is what you will be expected to perform for your OSCE (the above information is included as a more detailed guide)

- Useful way of quickly assessing musculoskeletal problems
- Initially ask: ① if patient has any pain, swelling, stiffness and ② if so its impact on ADLs
- GAIT:
 - Antalgic gait: problem with ① foot (gout, RA with metatarsalgia), ② ankle (OA, psoriatic), ③ knee (haemophilias), ④ hip (younger pt think of SUFE), ⑤ lower spine (AS, OA, TB)
 - Waddling gait: prox myopathy → endocrine (Cushings, hypo/ hyper-thyroidism), muscular dystrophy, Vit D deficiency, polymyositis
 - Ataxic gait: cerebellar lesion → POCl, MS, tumour, congenital (Freidrich's ataxia), drugs (alcohol, phenytoin), infection
 - Stomping gait: loss of proprioception → alcoholic neuropathy, DM, syphilis
 - High-stepping: due to foot-drop → common peroneal nerve injury (trauma/ DM, alcohol)
 - Festinant gait: shuffling and slow to start/ stop → Parkinson's disease
 - Post-stroke: extensors more powerful than flexors in leg (opposite in arms) so get extended leg that sweeps in arc when pt walks
 - Ank spond gait: ? mark position, marked kyphosis, little spine movement
- ARMS:
 - Inspect: atrophy, fasciculations, skin/ nail changes (psoriasis)
 - Feel: press over MC joints and squeeze them on either side of hand
 - Move: ① grip strength and opposition, ② wrist flexion/ extension, ③ elbow flexion/ extension, ④ hands behind head (flexion, abduction, ext rotation) / behind back (flexion, adduction, int rotation)
- LEGS:
 - Inspect as for arms
 - Feel: just feel for crepitus over knee and if warm
 - Move: ① ankle dors/ plantar flexion, ② knee flexion/ extension, ③ hip flexion and int/ ext rotation
- SPINE:
 - Look: normal curvature (changed in osteoporosis, ank spond), scoliosis, scars
 - Feel: tenderness by thumping down spine
 - Move: ① cervical spine: lateral flexion, flexion, extension, ② lumbar spine: flexion only

Musculoskeletal Examination: Summary

G

A

L

S

Gait --- Trendelenburg's Sign --- Tandem (heel to toe)

Hand:

- Inspect: nails-clubbing, brittle, pitting, splinter haemorrhages, nail fold infarct, onycholysis
 - Muscle wasting of hand- thenar/ hypothenar
- Joints - finger: make fist and open- extension/ flexion

Wrist:

- Inspect
- MVT: extension, flexion (cock up/ down)- Hindu sign (extension)- only active

Elbow:

- Nodules
- Muscle wasting
- MVTs: flexion/ extension (active)
 - pronation/ supination (passive)

Shoulder:

- Inspect
- MVTs: hand behind head/ up back

Cervical spine:

- Extension, flexion, lateral flexion, rotation

Hip:

- Inspect
- Leg length- true/ apparent
- Active/ Passive- flexion/ extension/ (ext/ int) rotation/ abduction/ adduction

Knee:

- Inspect
- Active/ Passive- flexion/ extension
- Patella Tap
- Stability of knee- anterior, posterior cruciate ligaments and collaterals

Ankle:

- Active/ passive- extension (dorsiflexion) / flexion (plantarflexion)
- Rotation: talo-calcaneal joint
- Inversion/ Eversion: Sub-talar joint

Foot:

- Inspect
- Feel toe joints
- Achilles tendonitis
- Plantar fasciitis

Spine/ Posture:

- Observe skin, posture, lordoses/ kyphoses
- Pt touch toes- scoliosis
- MVTs (all active): flexion, extension, lateral flexion, rotation

Renal History

Urinary Tract:

- a) General – ask about pain passing urine, increase frequency, nocturia, urgency, stress or urge incontinence, blood in urine, gravel in urine, loin/ renal Pain
 - Sexual Function impairment – if relevant
 - Pain questions – where, type, radiating?, aggravating/relieving factors
- b) Males – ask about hesitancy, impaired force of micturition, dribbling, impotence
- c) Females – ask about menstrual history, heavy or painful periods.

Renal Disease – ask about above plus:

- Appetite, wt. loss, nausea, itchy skin, jumpy legs, ankle swelling, increased BP or increased volume of urine.

Common Renal Pain:

- a) LOIN PAIN – Chronic dull aching discomfort in the loin due to stretching of the renal pelvis and / or capsule. Eg hyponephrosis. Can be severe in ureteric obstruction eg stone or blood clot.
- b) RENAL COLIC – Excruciating dull pain, radiating from loin to groin – associated with nausea and sweating. Eg: due to acute impacted stone, blood clot.

Common Terms:

- Dysuria – pain before / during / after passing urine, (scalding, burning).
- Stranguria – dysuria + desire to pass urine every few minutes
- Frequency – passing of urine more often (often in small amounts)
 - Causes eg. anxiety in children; detrussor muscle weakness in elderly
- Urgency – strong desire to pass urine, may lead to incontinence

Above indicate particularly disorders of the bladder, prostate, urethra eg. due to infection, prostatic enlargement, or calculi.

- Nocturia – Passing of urine more often at night, due to inability to concentrate urine as normal at night – causes eg. chronic renal failure, cardiac failure.
- Polydypsia – excessive thirst
- Polyuria – an increase in the daily volume of urine – causes eg. high fluid intake, lack of ADH (Diabetes Insipidus), chronic renal failure, cardiac failure, high osmotic urinary load (as in Diabetes Mellitus).
- Oliguria – a decrease in urine volume, below 400ml – cause eg. acute renal failure
- Anuria – no /very little urine passed per day
- Haematuria – Passing blood in urine – smoky colour
- Microscopic Haematuria – blood on Dipstick testing or urine microscsopy

Renal Disease Examination

Urine Testing:

- Reagent sticks/ Dipsticks impregnated with indicators for a variety of substances in urine.

Test:

1. Check expiry date on bottle
2. Take stick out and CLOSE BOTTLE STRAIGHT AWAY
3. Dipstick into urine- make sure all of stick is covered
4. Shake off excess urine
5. Compare reacted stick with label
6. Read off from bottom up while looking at timings

- Four pluses indicates a significant amount of protein

NB. Sticks detect albumin and not total protein, thus sticks sometimes called albusticks

- Normal albumin level in urine - as much as 30mg/ day
- But when put stick into urine, get -ve / trace result
- Why trace?
- Sticks measure concentration of albumin and not mass. Thus if pt drinks lot of water, high urine vol thus low conc of albumin and vice-versa

Clinically:

- Pt asked to collect 24hr urine collection sample - sent to biochem lab. Use radioactive immunoassay techniques for accurate detection of albumin and other proteins.
- Lab also measures creatinine excretion - together with serum creatinine can determine creatinine clearance thus GFR
- Dipsticks also check for blood and glucose (both important indicators of renal disease - normal pt has neither present)
- If blood/ significant albumin present then check for urinary tract infection
- Pt collects midstream sample of urine which is sent to bacteriology lab for culturing - identifying anything present and quantify it.

Abdominal Palpation:

- Inspect
- Palpate -
- Normally cant feel. Gently palpate all over abdomen then ballot kidney with one hand at back and one hand at front. Feel between the two as pt takes deep breath in.
- Polycystic kidneys usu enlarged

Clinical Clues:

- Usually, abdominal examination is negative even if significant kidney disease ie non-palpable and no tenderness

- So, look at end-organ effects
- Look for anaemia in palmar creases
- How to detect blood supply to kidneys?
- Can't examine renal arteries so use others
- Carotids in neck- feel and locate. Listen as pt breathes in and holds breath. Are there any bruits audible?
- Same with femoral artery
- Located halfway along inguinal ligament (which runs from anterior, superior iliac spine to pubic tubercle)
- Again feel and locate (with pt leg slightly externally rotated)
- Listen with diaphragm.
- If no noises - tell us that blood vessels to kidneys are not involved in atheroma

Effective Circulating Volume:

To determine if pt's renal disease is due to them being overloaded with vol or too little vol

To determine:

1. Check bp - should be normal for pts age (do lying and standing)
2. Check tissue turgor - in young person use back of hand (but as get older, elasticity decreases in this site - so use skin just under clavicle)
3. Position pt at 45°, examine signs for distention of Int Jug Vein
4. Finally, always check for oedema (in kidney disease, this can be due to reduced blood albumin levels due to albuminuria)
 - Press firmly above medial side of ankle joint for 10 secs. On removal: depression? - pitting oedema. If pt has been in bed for long time use skin over sacrum.
 - If pt does has v. low serum albumin but does not have this type of oedema then they may be v dry.

Renal Examination: Summary

Urine Testing

Abdominal Palpation

Clinical Clues:

- Anaemia of palmar creases/ carotid bruits/ femoral bruits

Effective Circulating Volume:

- Bp
- Tissue turgor
- Distension of Int Jug Vein (pt at 45°)
- Oedema

Respiratory Examination

Inspection

General:

- Is patient breathless / distressed...
- ?Wheeze audible

Hands:

- Nails – clubbing, anaemia, cigarette stains
- Peripheral cyanosis – check fingertips
- Palmar erythema
- Pale palmar creases (anaemia)
- Flapping tremor ('asterixis') – flap of outstretched hands due to CO₂ retention

Face:

- Conjunctiva – anaemia
- Central cyanosis – look at tongue
- Pursed-lip breathing (emphysema)

Chest:

- Chest wall shape
- Resp rate (normal 12-16)
- Symmetry of chest wall movement
- Depth of movement
- Use of muscles (using accessories?)

Palpation

- Lymph nodes – supraclavicular: feel from behind
- Tracheal Position – central or deviated – ?mediastinal shift → check apex beat location
 - If apex beat also displaced then may suggest mediastinal shift
- Chest Expansion – normal / ↑ / ↓ expansion → 2 at front, 3 at back
 - Ask patient to fully inspire then fully expire before placing hands on
- Tactile Vocal Fremitus - normal / ↑ (consolidation) / ↓ fremitus (pleural effusion) – remember to go into axilla
- Any tenderness of chest?

Percussion

- At front – start at clavicles (no need for protecting finger) to assess apices – move down chest comparing each side – remembering the axillae
- At back – work between scapula and move out underneath them – again into axilla
 - Can be hyperresonant or dull

Auscultation

- Ask patient to breathe through open mouth – listen down chest wall with diaphragm (comparing each side) and into axilla
 - Breath sounds – the transmission of turbulent airflow through lung tissues
 - Vesicular or bronchial
 - Vesicular – gentler sound – throughout inspiration and start of expiration
 - Bronchial – harsher quality (occurs when lung substance more solid/ collapse)
 - Heard throughout inspiration and expiration with pause in between
- Added sounds
 - Crackles (creps)
 - Opening up of previously closed alveoli.
 - Wheeze (ronchi) → (usu expiratory) musical quality due to passage of air through narrowed tubes
 - Stridor (usu inspiratory) – obstruction of large airways (trachea etc) → harsher sound
 - Pleural rub – pleurisy
- Vocal resonance – patient says ‘99’ – ↑ (solid) / ↓ (effusion) / normal



Respiratory Examination: Summary

- ① Introduce yourself
- ② Check patients patient details
- ③ Obtain consent/ explain
- ④ Adequately expose patient
- ⑤ Position patient semi-recumbent (45⁰)

Inspection:

- Is patient breathless, distressed?
- Shape of chest wall
- Resp rate, rhythm, depth, accessory muscle use etc
- Listen for wheezes/ stridor
- Nails – clubbing, anaemia, cyanosis
- Palmar erythema and central cyanosis

Palpation:

- Lymph Nodes
- Tracheal position – mediastinal shift?
- Apex beat – mediastinal shift?
- Chest Expansion (2 at front)
- Tactile Vocal Fremitus (incl into axilla)
- ?Any tenderness of chest.

Percussion:

- Start from apex of lung and work down – resonant vs dull

Auscultation:

- Breath sounds – vesicular vs bronchial (or bronchovesicular)?
- Added sounds?
- Vocal Resonance

Back:

- Inspection – patient upright, leaning forward, arms across chest
- Palpation – 3 place at back
- Percussion – remember apex → no percussion over scapula
- Auscultate – with diaphragm throughout