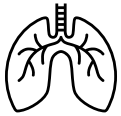

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Respiratory exam

To begin:

WIPE

- Wash hands
- Introduce self
- Identify patient
- Permission – gain consent for the exam
- Position – patient should be on a couch at 45 degrees
- Pain – ask if the patient is in pain
- Privacy – ensure curtains/doors are closed
- Exposure – access to torso (bras can be left on, but loosened appropriately for examination of the torso)

General inspection and active observation

Patient:

Look for	**Example of why**
General appearance	See if the patient is alert, orientated, in pain, generally appearing well or unwell
Body habitus	Large body habitus may cause respiratory problems, presence of oedema. Cachexia may be as a result of underlying respiratory illness and increased energy expenditure.
Breathing	High resp rate +/- use of accessory muscles suggest respiratory issues; tripoding position; wheeze in asthma; wet cough in infection
Colour	Cyanosis. In darker skin, cyanosis is best seen in the mucous membranes. Pallor secondary to anaemia, shock etc. In darker skin, pallor may only be seen in the palmar creases or conjunctiva.

	Flushing (polycythaemia secondary to smoking, anaphylaxis, allergy). May be less obvious in darker skin.

Around the bed:

Look for	**Examples of why**
Monitoring devices	ECG, continuous cardiac monitoring, pulse oximeter
Treatments/medications	Oxygen, inhalers, nebulisers, other medication
Sputum pot	Note the contents colour, volume, consistency, presence of blood
Observation chart	Note the patient's current status and NEWS score. If there are no up-to-date observations consider taking a full set of observations.

Upper peripheries

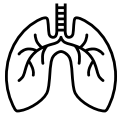
Hands:

Where	**Examine**	**How**	**Assessing for/associated with**
Nails	Clubbing	Look for loss of the angle between the proximal nail fold and the nail plate - 2 opposing fingers are held back-to-back against each other	Normal - Diamond-shaped space between the nail beds and the nails of the 2 fingers. Clubbing - this space is missing Non-specific sign. In respiratory system associated with pulmonary fibrosis, cancer
	Cigarette tar stains		Smoking risk factor for COPD, cancer
	Pallor		Associated with peripheral cyanosis
Back of hand	Temperature	Palpate with the back of your hand	Suggests if hands are well perfused
Palms	Thenar eminence wasting		Associated with an apical lung (Pancoast) tumour

	Palmar erythema		Associated with COPD, Covid, interstitial lung disease, sarcoidosis, smoking, polycythaemia

Arms:

Where	**Examine**	**How**	**Assessing for/associated with**
Wrist	Radial pulse (rate)	Count HR over 15 seconds. If pulse is irregular then 30s-1min may be required for an accurate reading	Check for tachy/bradycardia
	Radial pulse (rhythm)		Check rhythm is: • Regular – e.g. sinus rhythm • Regularly irregular – e.g. second degree heart block, sinus arrhythmia • Irregularly irregular – e.g. atrial fibrillation
	Respiratory rate	Count RR over 30s minimum or full 1 minute. Useful to count respiratory rate after taking a heart rate whilst still holding the patients pulse.	Check for tachy/bradypnoea
	Pulse oximetry	*Offer pulse oximetry*	*Check saturations*
Arm(s)	*Blood pressure*	*Offer blood pressure*	*Check for hyper/hypotension*
	CO2 retention flap (asterixis)	Ask patient to hold arms out straight in front of them, with wrists extended	Coarse 3Hz tremor associated with CO2 retention (asterixis)
	Fine tremor	Ask patient to hold arms out straight in front of them	Associated with salbutamol use



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Face:

Where	Examine	How	Assessing for/associated with
Face	Facial oedema and plethora		SVC obstruction (secondary to tumour invasion of upper mediastinum)
Eyes	Conjunctival pallor	Ask patient to pull down lower eyelid and look for colour of conjunctiva	Pallor - associated with significant anaemia
	Ptosis and constricted pupils		Combination in Horner's syndrome, associated with apical lung tumour
Mouth	Central cyanosis		Associated with desaturation
	Hydration status		Check for dehydration
	Coating of the tongue		White coating – oral candidiasis (can be secondary to steroid inhaler use)
	Abnormal tongue, mandible, palate		Abnormalities might obstruct the airway

Neck:

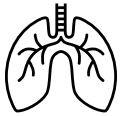
Where	Examine	How	Assessing for/associated with
Neck	Carotid pulse (character)		Bounding pulse associated with CO2 retention
	Carotid pulse (volume)		Thready pulse associated with shock
	Jugular venous pressure	Sit the patient at 45° and ask them to turn their head away from you. Looking for the IJV (between medial end of clavicle and ear lobe). Measure vertical distance	Normal – ≤3cm Elevated JVP associated with fluid overload, right heart failure

		between sternal angle and top of IJV	
	Tracheal deviation	Place a finger in the sternal notch in the midline, feel for the trachea	Normal – equidistant from both sternomastoid heads. Deviates away from a tension pneumothorax or large pleural effusion; towards a collapse
	Cervical lymph nodes	Examine from behind the patient, using pads of fingers to press onto nodes. Submental > submandibular > tonsillar & parotid > pre-auricular > post-auricular > anterior cervical chain > posterior cervical chain > occipital > supraclavicular	Feeling for lymphadenopathy – assessing size, shape, tenderness, mobility, consistency. Associated with infection, malignancy

Chest

Inspection:

Where	**Examine**	**Assessing for/associated with**
Chest wall	Chest wall shape	Breathing may be affected by pectus carinatum/excavatum, scoliosis
	Devices	Chest drain in axilla
	Scars	Thoracotomy scar from a pneumonectomy
	Breathing pattern	Kussmaul – DKA Cheyne-stokes – end of life See-saw breathing – upper airway obstruction Flail chest - rib fractures



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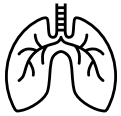
Palpation:

Where	Examine	How	Assessing for/associated with
Chest wall	Chest expansion	Place palms below axilla, aligning with pectoral region, thumbs elevated over midline, ask the patient to take a deep breath, and note chest wall movement by observing movement between your thumbs. (upper lobes) Repeat on lower anterior chest wall (middle & lower lobes)	Normal – ribs move out and up with inspiration, equal both sides. Antero-posterior or lateral expansion deficits may impact breathing. Asymmetrically reduced in pneumothorax or lobar collapse. Hyperexpansion in COPD
	Heaves	Place heel of your right hand to the left parasternal area	Associated with RV hypertrophy, which may be caused by cor pulmonale
Heart apex	Apex beat	Palpate 5th intercostal space, mid-clavicular line	More forceful beat associated with L ventricular hypertrophy or volume overload Displaced beat associated with cardiomegaly.

Percuss:

Where	Examine	How	Assessing for/associated with
Chest wall	Lung fields	Place the middle finger of your non-dominant hand in the intercostal space, pressing firmly. Tap the middle finger with your middle/index finger of your dominant hand in fixed flexion, swinging the hand from the wrist.	Percuss across lung fields on the front and back of the chest: dullness associated with pleural effusion, consolidation, oedema, collapse; hyperresonance associated with pneumothorax



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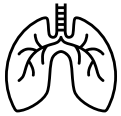
Auscultation:

Where	Examine	How	Assessing for/associated with
Chest wall	Lung fields	Auscultate across lung fields on the front and back of the chest and axilla in the same locations as percussion	Listen for normal breath sounds Additional sounds: - Crackles/crepitations - pneumonia, oedema - expiratory wheeze - asthma, COPD - Pleural rub – PE, pleurisy
	Vocal resonance	Auscultate across lung fields on the back of the chest and axilla in the same locations as percussion. Ask the patient to say "99" or equivalent (i.e. blue balloon)	Vocal resonance is increased in consolidation; reduced in effusion, collapse *N.b. tactile fremitus is an alternative to vocal resonance. As they test the same thing you don't need to do both.*

Lower peripheries

Where	Examine	How	Assessing for/associated with
Lower back	Sacral oedema	Press on the base of the spine and look for pitting oedema.	Often the location for pitting oedema in bedbound patients. Suggestive of fluid overload e.g. right ventricular failure, cor pulmonale
Legs	Peripheral oedema	Press at the level of the ankles and look for pitting oedema. Note the highest level it can be identified at e.g. ankle, mid-calf, knee.	Suggestive of fluid overload e.g. right ventricular failure, cor pulmonale
	Asymmetrical calves	Palpate the calf muscle bulk with both hands, squeezing lightly to identify firm swelling or discomfort	Unilateral swelling, redness, pain associated with DVT



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To finish

- Ensure the patient is dressed and comfortable
- Wash hands