# Respiratory Examination

- **Intro (WIIPPPPE)**
  - Wash your hands
  - Introduce yourself
  - Identity of patient – confirm
  - Permission (consent and explain examination)
  - Pain?
  - Position at 45°
  - Privacy
  - Expose chest fully

- **General Inspection**
  - **Surroundings**
    - Monitoring:
      - pulse oximeter
      - ECG monitoring
    - Treatments:
      - oxygen therapy (method of delivery, rate, SATs, humidified, venturi)
      - Inhalers
      - Blue (reliever, short-acting B2 agonist e.g. salbutamol)
      - Brown (preventer, corticosteroids e.g. beclometasone)
      - Spiriva (tiotropium bromide, COPD patients)
      - Nebulisers (driven by oxygen?)
      - NIV
      - IV infusions
      - Chest drains
      - Creon (capsules for CF patients with exocrine pancreatic insufficiency)
    - Paraphernalia:
      - Ensures
      - food and drink
      - sputum pots
      - Cigarettes/ nicotine patches/ gum
  - **Patient**
    - Well or unwell?
    - Alert and orientated or drowsy and confused?
    - Comfortable at rest or in pain?
    - Body habitus? Cachectic or obese?
    - Signs of respiratory distress:
      - Dyspnoea/ tachypnoea
      - Tripod posture
      - Use of accessory muscles
      - Pursed lip breathing
      - Flared nostrils, intercostal/ subcostal recession, tracheal tug (children)
    - Chest shape
    - Breathing pattern
    - Added breath sounds? Stridor, audible wheeze?
    - Colour? Pale and shocked or peripherally cyanosed?
- Obvious scars
  - Ask patient to cough
    - Listen to nature of cough – dry or productive?

- Hands
  - Inspect
    - Clubbing – perform Shamoroth’s window test and consider respiratory causes:
      - Abscess of lung
      - Bronchiectasis
      - Cancer of the lung (not SCLC)/ Cystic fibrosis
      - Empyema
      - Fibrosis
    - Cigarette tar staining (not nicotine!)
    - Peripheral cyanosis
    - Wasting of small muscles of hand
      - Especially dorsal interossei and thenar eminence
      - Can be caused by a C8/T1 lesion e.g. Pancoast’s tumour
    - Hand signs of rheumatological conditions or steroid use
  - Palpate:
    - Pulse
    - RR
      - Normally 12-16 breaths per minute
      - Component of CURB-65
    - CO2 retention flap (also look for fine salbutamol-induced tremor)

- Arms
  - Signs of steroid use (thin skin, easy bruising)
  - Cannulae
  - Ask for BP (component of CURB-65)

- Neck
  - JVP - respiratory causes of ↑JVP:
    - Tension pneumothorax
    - Severe acute asthma
    - PE
  - Carotid pulse (CO2 retention = bounding)
  - Tracheal deviation
    - Normal = central
    - Deviated away = tension pneumothorax, large pleural effusion
    - Deviated towards = lung collapse, pneumonectomy

- Face
  - Facial swelling
  - SVC obstruction (usually due to bronchogenic carcinoma)
  - Smoker’s facies
  - Horner’s syndrome
    - Unilateral miosis, ptosis and anhidrosis
    - May be caused by Pancoast’s tumour
  - Conjunctival pallor (anaemia)
  - Blue lips- peripheral cyanosis
  - Mucous membranes (dehydration)
  - Tongue (bright red = CO poisoning)
  - Central cyanosis under tongue - respiratory causes:
    - Pneumothorax
    - PE
- Pleural effusion
- Pulmonary oedema
- COPD
- Acute severe asthma
- Acute respiratory distress syndrome (ARDS)

- **Chest: anterior**
  - examine anterior chest as quickly and efficiently as possible as most signs will be best detected on the posterior chest
  - *Inspect* (ask patient to put hands on hips)
    - Chest wall deformity
      - Pectus excavatum (‘funnel chest’ e.g. Marfan’s syndrome)
      - Pectus carinatum (‘pigeon chest’ e.g. severe childhood asthma)
      - Harrison’s sulcus (severe childhood asthma)
      - Barrel chest (asthma, COPD)
    - Breathing pattern
      - Seesaw breathing (diaphragm in, abdomen out on inspiration; severe airway obstruction)
      - Fail chest/ paradoxical breathing (fracture of 2 or more ribs anteriorly and posteriorly)
      - Kussmaul breathing (DKA)
      - Cheynes-Stokes/periodic breathing (comatose patient)
  - Missing ribs
  - Scars
    - Thoracotomy – pneumonectomy or lobectomy
    - Thoracoplasty – rib removal (commonly old TB)
    - Small scars in axillae (previous chest drains)
  - Radiotherapy tattoos

- **Palpate**
  - Apex beat (may be impalpable in COPD, pleural effusion)
  - RV heave (cor pulmonale)
  - Expansion:
    - Lateral: symmetry, >5cm increase
    - AP: symmetry

- **Percuss**
  - At apices and 3 places on each side, alternating sides in an S shape, then axillae

- **Auscultate**
  - Same places as percussion
  - Vocal resonance
    - If an area of dullness is found, vocal resonance can be used to distinguish between consolidation (increased) and effusion (decreased).
    - It is not necessary to also perform pectoriloquy or tactile vocal fremitus, but it is important to be aware of them.

- **Chest: posterior**
  - It is often easier to detect pathology when examining the posterior chest so be thorough!
• **Inspect again**
  - Scars
  - Radiotherapy tattoos
  - Deformity – particularly kyphosis or scoliosis
  - Breathing pattern

• **Palpate**
  - Expansion- repeat lateral expansion
  - Lymph nodes
    - Cervical
    - Supraclavicular
  - Sacral oedema (cor pulmonale)

• **Percuss**
  - Percuss the upper, middle and lower zones in an S shape

• **Auscultate**
  - Same as percussion
  - Vocal resonance

• **Legs**
  - Peripheral oedema
    - Cor pulmonale
  - Easy bruising
  - Calf swelling (DVT)
  - Erythema nodosum
    - Respiratory causes:
      - Viral/streptococcal throat infections
      - Mycoplasma pneumoniae infections
      - TB
      - Sarcoidosis

• **Closure**
  - Thank patient
  - Patient comfortable?
  - Help getting dressed?
  - Wash hands

Turn to examiner, hands behind back, holding stethoscope (try not to fidget!) before saying:

• **To complete my examination, I would like to...**

• **Bedside Invx:**
  - Look at obs chart and repeat set of obs (pulse, BP, SATs, temp.)
  - Measure peak flow
  - Inspect any sputum pots and send for MCS

• **Further Invx as indicated**
  - Bloods
  - Lung function tests
  - CXR