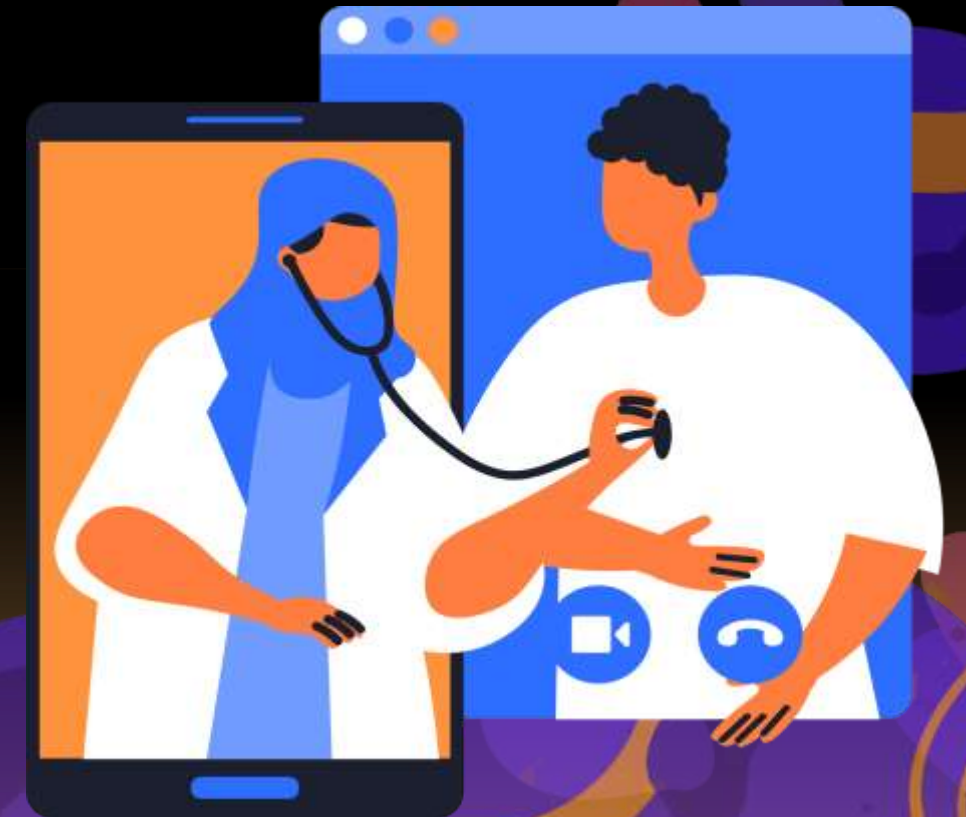




**OSCEAZY x GKT MSA**

# How to Excel in OSCEs

Megan Hodgson



# How to Excel in OSCEs



History Taking



Examinations



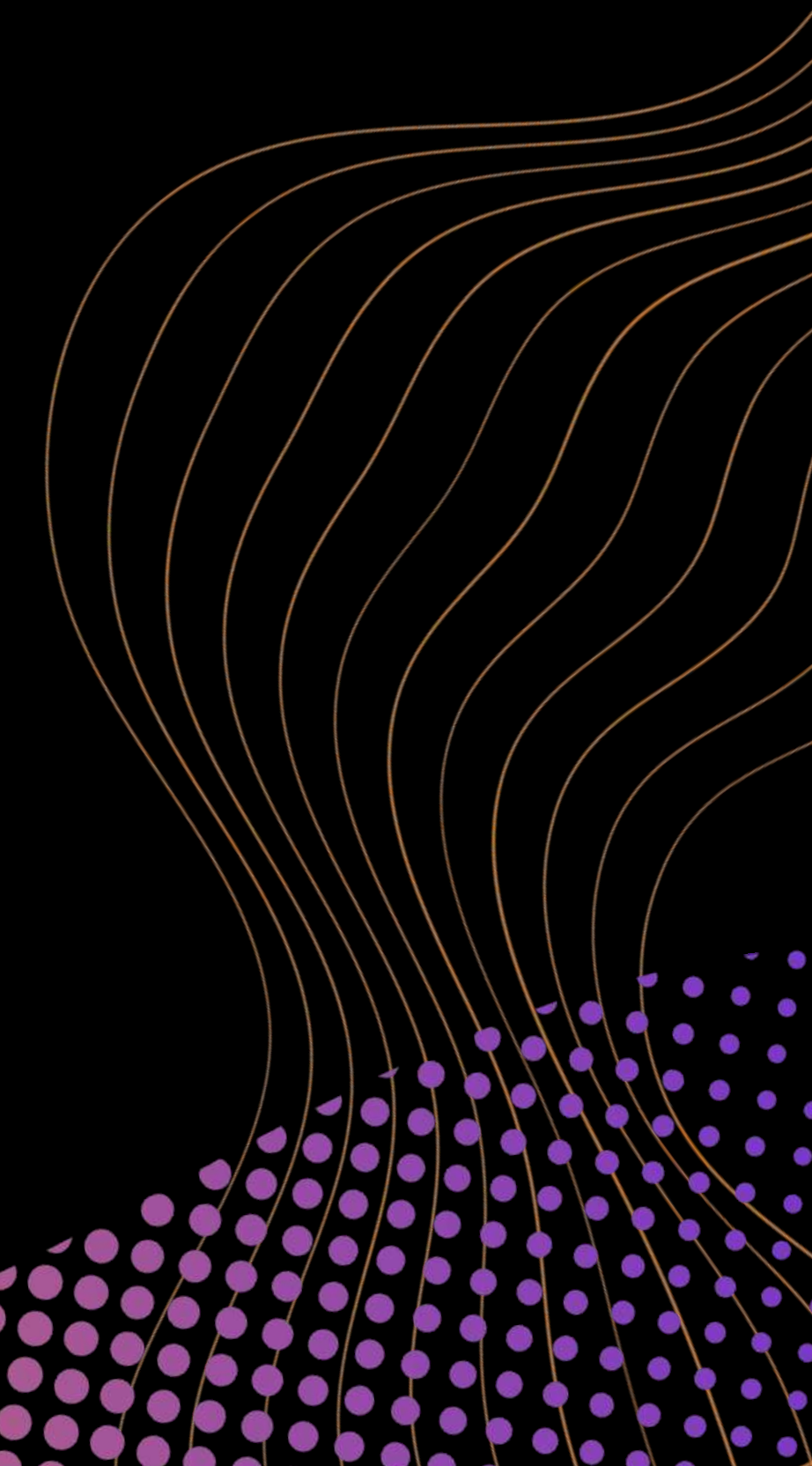
Communication



Data Interpretation



Other (Clinical Skills, Cases, Pharmacology, etc.)



# HISTORY TAKING

---

# Structure of a History



**WIPE**

**Open Question! Golden Minute!**

**SOCRATES, PC Differentials Questions**

**Ideas, Concerns, Expectations**

**ALLERGIES**

**LOST**

**Summarise. Any questions?  
Thank patient**

# STUDENT INSTRUCTIONS EXAMPLE



<b>Role</b>	Final Year Medical Student
<b>Setting</b>	Emergency Department
<b>Patient</b>	Matilda Jones, a 49-year-old female presents with acute shortness of breath
<b>Student Task</b>	Please take a focused history from this patient.  At 7 minutes, the examiner will stop you and ask you to summarise your findings & present your differentials.

# GENERAL HISTORY

## HISTORY OF PRESENTING COMPLAINT

- Site?
- Onset:
  - When did it start?
  - Sudden or gradual onset?
  - Intermittent vs Constant? → Interval
  - Progression (worse, better or constant)?
- Character?
- Radiation?
- Associated Symptoms?
- Timing?
- Exacerbating / alleviating symptoms?
- Severity?

### Other structures:

- Before, During, After
- Volume, Frequency, Colour, Consistency, Blood
  
- Ask other related system symptoms
- Ask specific differential questions

**END WITH AN OPEN QUESTION**

## SYSTEMS REVIEW

- B symptoms for Cancer:
  - Fever
  - Fatigue
  - Night Sweats
  - Weight changes
- Chest pain
- Palpitations
- Cough
- Shortness of Breath
- Nausea or Vomiting
- Change in bowel / bladder habits
- Pain

## ICE

- Ideas, Concerns, Expectations
- ASK THIS EARLY!**

# GENERAL HISTORY

## PAST MEDICAL HISTORY

### START WITH AN OPEN QUESTION

- Do you have any medical conditions that you see a doctor for?
- Any [SYSTEM] diagnoses?
  - When were they diagnosed?
  - How well are they managed?

## DRUG HISTORY

- Do you have any **drug allergies**?
- Do you take any medications **prescribed** to you?
- Do you take any drugs that you buy **over-the-counter**?
- Do you take any **herbal remedies**?

## FAMILY HISTORY

### START WITH AN OPEN QUESTION

- Do you have any medical conditions that are common in your family?
  - who, what diagnosis, when, etc.
- Are there any conditions related to the [SYSTEM]?

## SOCIAL HISTORY

### LOST

- Living Situation?
- Occupation? (& previous jobs)
- Smoking? Alcohol? Recreation Drugs?
  - Amount/day, How long for, Previous use
- Travel History?
- Activities of Daily Living?
- Exercise?

# OTHER HISTORIES

## PAEDIATRICS HISTORY

### BFG'S ID

- **Birth & Pregnancy**
  - What type of delivery (caesarean, vaginal, instrumental)?
  - Born at term, late or premature?
  - Any complications during pregnancy or delivery?
  - Prolonged stay in hospital after birth?
- **Feeding**
  - Input (eating & drinking)
  - Output (wet nappies & poo)
- **Growth**
  - Do they have a red book (for under 5)?
  - Growing along centiles?
  - How far are they along in puberty (older children)?
- **School**
  - Any problems at school?
  - Keeping up with peers & schoolwork?
- **Immunisations**
  - Immunisations up to date?
- **Development**
  - Has the child been meeting their developmental milestones (gross motor, fine motor & vision, hearing & language, social & behavior)?



## PSYCH HISTORY

### Risk Assessment:

- Thoughts of self harm?
- Actions to self harm (now or past)?
- Thoughts of harming others?
- Actions to harm others (now or past)?
- Thoughts of suicide?
- Actions taking towards a suicide (now or past)?
- Are there people/pets that dependent on you?
- Is anyone causing you harm?

### Past Psych History:

- Have you ever been seen by a psychiatrist or a member of the psychiatry team before?
- Have you been diagnosed with any mental health conditions in the past?
- Have you even been involved with the police?
- Tell me about your life story (childhood, education, etc.)





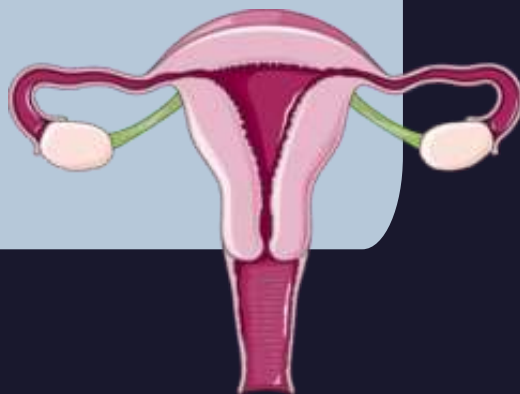
# OTHER HISTORIES

## GYNAECOLOGY HISTORY

- Gynaecological Questions in History of Presenting Complaint:
  - **Pain** – pelvic, dyspareunia, dysmenorrhea
  - **PV discharge** - colour, consistency, volume, smell
  - **PV bleeding** – menorrhagia, intermenstrual, post-coital, post-menopausal
  - **Pregnancy** – is there a chance they could be pregnant?

### MOSC

- **Menstruation Questions:**
  - 1st day of last menstrual period?
  - How long do you bleed for?
  - How long is your cycle?
  - Are your cycles regular?
  - When did you start your period?
  - When did you go through menopause?
  - What are your periods like (heavy vs light, painful, other symptoms)?
- **Obstetric History - GMC**
  - Gravida & Parity
  - Miscarriages / Ectopic pregnancy / Termination ("I'm sorry to ask this...")
  - Children - number, ages, details of birth, form of delivery, any issues during their pregnancy or delivery?
- **Sexual History**
  - Are you currently sexually active / in last 6 months?
  - 1 partner or multiple?
  - Sex of partner (male/female/other)?
  - Type of intercourse (oral, vaginal)?
  - Condom use?
  - Has contraception been used (hormonal)?
  - Previous STIs?
  - Any previous STI screening?
  - Subfertility?
- **Cervical Smear History**
  - Are their cervical smears up to date (if >25 years)?
  - HPV vaccine?



## OBSTETRICS HISTORY

- Gynaecological Questions in History of Presenting Complaint:
  - **Pain** – pelvic, dyspareunia, dysmenorrhea
  - **PV discharge** - colour, consistency, volume, smell
  - **PV bleeding** – menorrhagia, intermenstrual, post-coital, post-menopausal
  - **Pre-eclampsia** – e.g. headache, visual changes

### MOSC (see gynaecology history)

- **Current Obstetric History:**
  - What was the 1<sup>st</sup> day of their LMP? Due date?
  - Current Gravida & Parity
  - How did they find out they were pregnant (e.g. positive pregnancy test)?
  - Have they attended antenatal appointments?
  - Any problems identified during antenatal care? (e.g. blood, scans, observations, BP, urine dip)
  - Person in charge of care (e.g. consultant vs midwife)? → why?
  - **WHAT IS THEIR RHESUS STATUS?**
  - Fetal Movements? (>16 weeks)
  - Contractions?



1

## PATIENT DETAILS & PRESENTING COMPLAINT

- Today I took a history from [Name], a [Age] male/female, who presented with [Presenting Complaint]

2

## HISTORY OF PRESENTING COMPLAINT

*(talk through relevant parts in a structured approach)*

3

## RELEVANT NEGATIVES

4

## RELEVANT PMHx, SurgHx, FHx, DHx & SocHx

5

## IDEAS, CONCERNS & EXPECTATIONS

6

## TOP DIFFERENTIAL (& WHY)

- My top differential is ... due to ...

7

## OTHER DIFFERENTIALS

- Other differentials I would like to rule out include ...



# HISTORY SUMMARY

## STRUCTURE





# KEY POINTS FOR HISTORIES

## 01 BEGIN OUTSIDE THE DOOR

Once you read the vignette, begin planning your differentials for the presenting complaint and the specific questions you need to ask to rule these in or out

## 03 OPEN QUESTIONS

Use open questions at the start of almost each section of a history and then narrow down into closed questions

## 05 RED FLAGS

Check for red flags for the presenting complaint the patient has. This shows you know what important questions you must ask and diagnoses you must rule out

## 02 WIPE & PREAMBLE

- Wash your Hands
- Introduce yourself
- Patient details
- Explain exam & gain consent

Have a preamble for all histories committed to memory!

Ask for patient's age, not DOB

## 04 BE SYSTEMATIC

Follow systematic order of histories  
Maintain flow throughout consultation & do not rush

## 06 ICE

Ideas, Concerns & Expectations  
Very important!  
Allows you to understand the patient's priorities and provide appropriate reassurance





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# KEY POINTS FOR HISTORIES

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## 07 LISTEN TO PATIENT

---

Patients will often give you clues for you to pick up on  
Tailor your questions to clues / prompts they provide

## 09 AVOID JARGON

---

Avoid using medical terminology when speaking to the patient  
Create confusion & breaks flow

## 11 CONFIDENCE

---

Put on a show!

## 08 EMPATHY & NON-VERBAL

---

Use good non-verbal communication (eye contact, nodding, sitting with both feet on the floor)  
If the patient mentions something personal or emotional, make a genuine comment after these prompts (do not use the same phrase each time)

## 10 JUSTIFICATIONS

---

Justify your diagnosis and investigations briefly when asked by the examiner



# EXAMINATIONS

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# KEY POINTS FOR PRACTICING EXAMINATIONS

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## 01 PRACTICE!

---

Practice on medics, non-medics and patients (or a teddy bear / pillow for solo practice)

## 03 BE CRITICAL

---

Give constructive feedback to your peers when practicing  
Think how your friends make you feel as a patient

## 05 KNOW YOUR SIGNS

---

Ensure you know the signs you are looking for, what causes them and the diagnoses which result in these signs

## 02 TIME YOURSELF

---

Ensure you can complete the examination in the time given in your OSCE

## 04 USE CHECKLISTS

---

Geeky Medics Checklists!



# Examination Checklists

OSCE Checklist: Cardiovascular Examination	
<b>Introduction</b>	
1	Wash your hands and don PPE if appropriate
2	Introduce yourself to the patient including your name and role
3	Confirm the patient's name and date of birth
4	Briefly explain what the examination will involve using patient-friendly language
5	Gain consent to proceed with the examination
6	Adjust the head of the bed to a 45° angle
7	Adequately expose the patient
8	Ask if the patient has any pain before proceeding
<b>General inspection</b>	
9	Inspect for clinical signs suggestive of underlying pathology (e.g. cyanosis, shortness of breath, pallor)
10	Look for objects or equipment on or around the patient (e.g. walking aids, medical equipment)
<b>Hands</b>	
11	Inspect the hands (colour, tar staining, xanthomata, finger clubbing)
12	Assess and compare the temperature of the hands
13	Assess capillary refill time (CRT)
<b>Pulses and blood pressure</b>	
14	Palpate the radial pulse, assessing the heart rate and rhythm
15	Assess for radio-radial delay
16	Assess for a collapsing pulse
17	Palpate the brachial pulse, assessing volume and character
18	Offer to measure the patient's blood pressure in both arms
19	Auscultate the carotid pulse
20	Palpate the carotid pulse
<b>Jugular venous pressure (JVP)</b>	
21	Measure the JVP with the patient positioned correctly
22	Elicit hepatojugular reflux if appropriate
<b>Face</b>	
23	Inspect the eyes for signs relevant to the cardiovascular system (e.g. conjunctival pallor, corneal arcus, xanthelasma)

24	Inspect the mouth for signs relevant to the cardiovascular system (e.g. central cyanosis, angular stomatitis, high-arched palate, dental hygiene)
<b>Close inspection of the chest</b>	
25	Inspect for scars, chest wall deformities and pulsations
<b>Palpation</b>	
26	Palpate the apex beat and assess position
27	Assess for a parasternal heave
28	Assess for thrills
<b>Auscultation</b>	
29	Auscultate the mitral, tricuspid, pulmonary and aortic valve with the diaphragm of the stethoscope, whilst palpating the carotid pulse.
30	Repeat auscultation of all 4 valves using the bell of the stethoscope.
31	Auscultate the carotid arteries using the diaphragm of the stethoscope whilst the patient holds their breath to identify radiation of an aortic murmur.
32	Sit the patient forwards and auscultate over the aortic area with the diaphragm of the stethoscope during expiration to listen for an early diastolic murmur caused by aortic regurgitation.
33	Roll the patient onto their left side and listen over the mitral area with the diaphragm of the stethoscope during expiration to listen for a pansystolic murmur caused by mitral regurgitation. Continue to auscultate into the axilla to identify radiation of this murmur.
34	With the patient still on their left side, listen again over the mitral area using the bell of the stethoscope during expiration for a mid-diastolic murmur caused by mitral stenosis.
<b>Final steps</b>	
35	Inspect the posterior chest wall for any deformities or scars
36	Auscultate the posterior lung fields
37	Palpate for sacral oedema
38	Palpate the patient's ankles for evidence of pitting oedema
39	Inspect the patient's legs for evidence of saphenous vein harvesting sites
<b>To complete the examination...</b>	
40	Explain that the examination is now finished to the patient
41	Thank the patient for their time
42	Dispose of PPE appropriately and wash your hands
43	Summarise your findings
44	Suggest further assessments and investigations (e.g. peripheral vascular examination, 12-lead ECG, urine dipstick, capillary blood glucose, fundoscopy)



# KEY POINTS FOR EXAMINATIONS

## 01 RIGHT SIDE

Examine the patient from their right side

## 03 TALKING IN EXAMS

Hard to time correctly when talking through exams  
“There is no evidence of” rather than “I am looking for”

## 05 BE SYSTEMATIC

Be slick  
Follow systematic order of examinations

## 02 WIPE & PREAMBLE

Wash your Hands  
Introduce yourself  
Patient details  
Explain exam & gain consent

Have a preamble for all examinations committed to memory!

Ask for patient’s age, not DOB

## 04 INSPECTION

During general inspection, LOOK at the patient around the bed for a good 10-20 seconds

## 06 CONFIDENCE

Put on a show!





# COMMUNICATION

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● ● ●  
Explaining...

DISEASE

PROCEDURE

DRUG

SBAR

ANTENATAL SCREENING / VACCINE

DNA CPR

CONTRACEPTION

# STUDENT INSTRUCTIONS EXAMPLE



<b>Role</b>	Final Year Medical Student
<b>Setting</b>	General Practice
<b>Patient</b>	Timothy Jones, a 59-year-old male was discharged from the Emergency Department last week after having raised HbA1c levels on 2 occasions.
<b>Student Task</b>	<p>Please take a focused history from this patient and explain the diagnosis of Type 2 diabetes.</p> <p>At 7 minutes, the examiner will stop you and ask you to summarise your findings &amp; present your differentials.</p>

# Structure of Communication Stations



Introduction

**WIPE**

Story so far

**Brief Patient History**

Prior Knowledge & ICE

**What does the patient understand about the topic?**

Explain consultation

**Tell patient what you plan to discuss. Ask what they want to cover.**

Talk through Topic

Summarise findings & make plan

Check patient's understanding

**Ask patient to summarise key points**

Offer other information sources

**e.g. Leaflets, Websites, Specialist nurse contact, Follow-up appointment**

## Disease

- Normal anatomy & physiology
- What the disease is
- How common it is
- Cause
- Signs & Symptoms
- Problems & Complications
- Management (conservative, medical, surgical)

## Procedure

- Explain what the procedure is
- Reason for it
- Details of procedure (before, during, after)
- Risks
- Benefits

## Treatment / Drug

- Check for contraindications to treatment
- Check patient understanding of condition
- How treatment works
- Treatment course & how it is taken
- Monitoring required
- Side effects

## Chunk & Check

- Cover small amounts of information in little CHUNKS
- CHECK the patient understands the information in each chunk before moving on to the next chunk

S

B

A

R

## Situation

- Who you are
- Where you are
- Confirm who you are speaking to
- Mention the patient by name & reason for calling
- State your major concerns

## Background

- Why the patient has come in
- Date of admission
- Background of current problem
- Relevant past medical history

## Assessment

- Observations
- NEWS Score
- A-E approach findings
- Examination findings
- Blood Results

## Recommendation

- Working diagnosis (what you are worried about)
- What you want them to do?
- When do you want them to do it?
- Make suggestions for moving forward (what can you do in the meantime & is there anything you have missed)

S

B

A

R

## Situation

Hello, my name is Megan, I am a FY1 doctor in the emergency department. Please can I confirm I am speaking to the respiratory registrar?

Please can I speak to you about Mr Jamie Johnson who has a blood pressure of 87/45mmHg, a deviated trachea and absent breath sounds across his left lung. I am very concerned he has a tension pneumothorax.

## Background

Mr Jamie Johnson is a 25-year-old male who presented with severe, acute shortness of breath to A&E at 10am this morning. This SOB began at 10am when playing tennis. He reports pleuritic chest pain.

His past medical history is significant for Asthma and a 10-year smoking pack history

## Assessment

The patient has a NEWS Score of 7, including a blood pressure of 87/45mmHg, Heart rate 122bpm & 92% O2 SATS on air. The patient is conscious.

On examination, the trachea is deviated to the right. There are absent breath sounds throughout the left lung field and asymmetrical reduced chest expansion on the left side.

## Recommendation

I am very concerned this patient has a left-sided tension pneumothorax.

I would be grateful if you could come to review this patient and insert a chest drain urgently in the next 10 minutes. I have inserted a large-bore cannula into his 2<sup>nd</sup> intercostal space in the midclavicular line. I will also give him 15L of high flow oxygen. Is there anything else you would like me to do in the meantime? Thank you

## Low Chance of Success

- <10% of people survive a cardiac arrest out-of-hospital
- Every minute of delayed CPR reduces survival by 10%
- CPR may be futile or unsuccessful in patients with many co-morbidities (ensures dignified deaths)

## Decision by Medical Team

- MDT decision made on “best interests” of the patient
- DNACPR decision can be put in place even if patient or family disagrees
- Senior clinician responsible for the patient’s care
- Written on form at front of patient’s file of notes

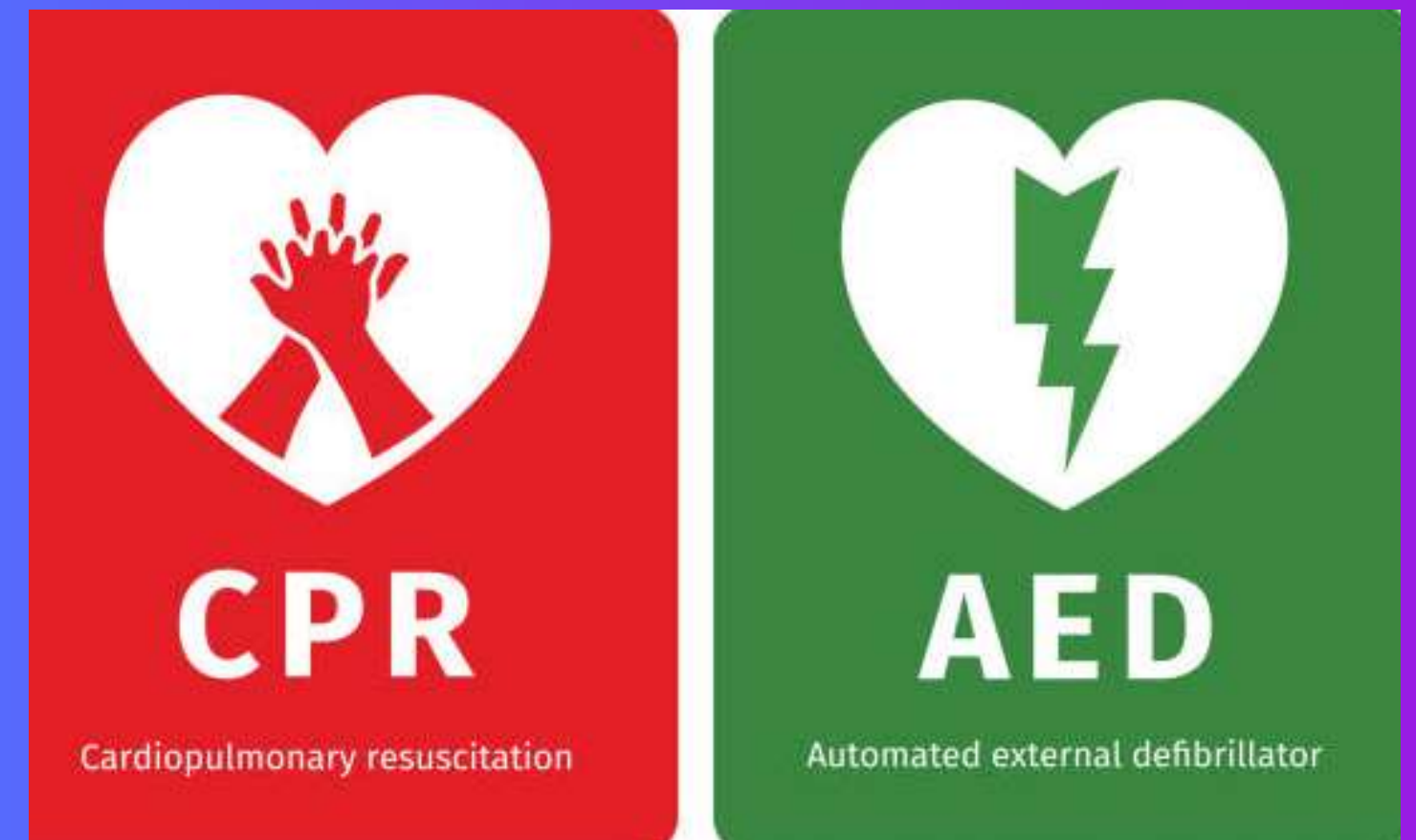
## Not a Full Withdrawal of Care

- DNACPRs are contextual to anticipated cause of death
- Resuscitate in cases of non-envisaged arrest (e.g. vehicle accident, choking)
- No other treatment is withdrawn, specific to CPR

## Discussion with Patient & Family

- Discussions occur ASAP after decision made (legal obligation) –must occur irrespective of distress causes
- Help them understand why the decision has been made

# Do Not Attempt Cardiopulmonary Resuscitation (DNACPR)

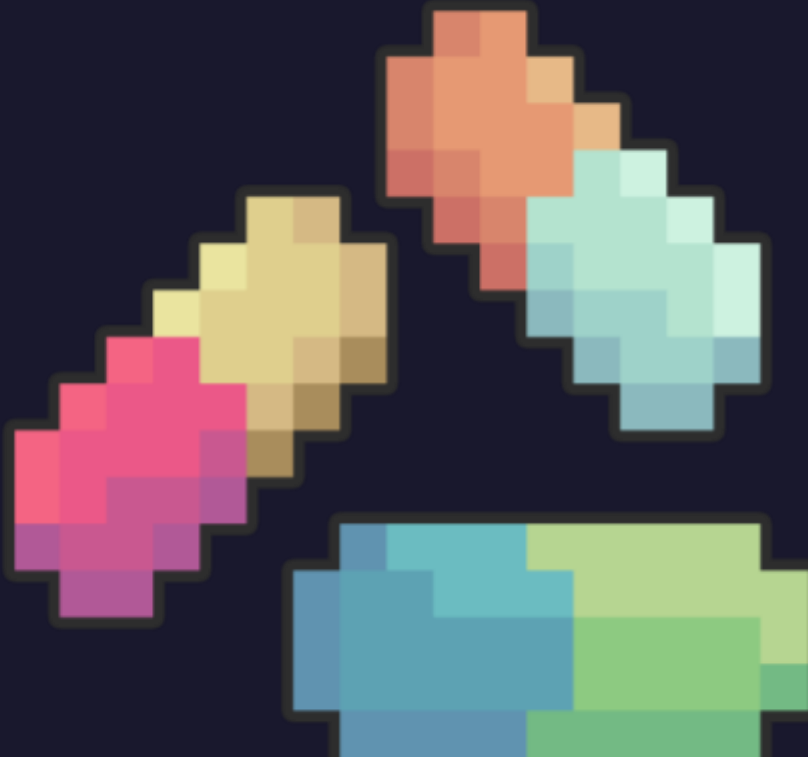




# SPOT DIAGNOSIS – CONTRACEPTION

**Options: COCP, POP, Injection, Implant, IUS, IUD**

<p>An 21-year-old female requires contraception. She is considering having a child in the next couple of months. Her BMI is 34. She takes Sumatriptan for a headache she has, with associated numbness in her hand, arm &amp; face</p>	<p><b>POP</b></p>
<p>A 18-year-old female requires contraception. She says she is very forgetful. She is considering having a child in 4 years. She has a fear of needles</p>	<p><b>IMPLANT</b></p>
<p>A 26-year-old female requires contraception. She was diagnosed with Pelvic inflammatory disease 2 months ago. She is considering having a child in 2 years time. She is an air hostess and would be unable to regularly take any medication at the same time each day</p>	<p><b>DEPOT INJECTION</b></p>
<p>A 34-year-old female requires contraception. She has finished her family. She experiences heavy, painful periods. PMHx: Alcoholic liver disease</p>	<p><b>IUS</b></p>
<p>A 17-year-old female requires contraception. She is unsure when she would like to start her family. She suffers with heavy menstrual bleeding and acne. She would like to control when her period bleed occurs around events. She is not keen on any “internal” contraceptive methods</p>	<p><b>COCP</b></p>



CONTRACEPTION	MECHANISM	STARTS WORKING	LENGTH OF TIME	EFFECTIVENESS	BENEFITS	LIMITATIONS	CONTRAINDICATIONS
COCP	SYSTEMIC OESTROGEN & PROGESTOGEN TO INHIBIT OVULATION, THICKEN CERVICAL MUCUS & THIN ENDOMETRIUM	7 DAYS	N/A	99%	<ul style="list-style-type: none"> <li>CAN BE QUICKLY STOPPED IF NOT TOLERATED</li> <li>ABLE TO DICTATE WHEN YOUR BLEED FALLS AROUND PERSONAL LIFE</li> <li>NO INTERRUPTION OF INTERCOURSE</li> <li>MAKES PERIODS, LIGHTER, LESS PAINFUL &amp; MORE REGULAR</li> <li>LESS STRICT "MISSED PILL RULES" THAN POP</li> <li>REDUCE OVARIAN/ENDOMETRIAL/BOWEL CANCER RISK</li> <li>THERAPEUTIC BENEFIT FOR OTHER GYNAECOLOGICAL DISORDER (E.G. MENORRHAGIA, ENDOMETRIOSIS)</li> </ul>	<ul style="list-style-type: none"> <li>EASY TO FORGET PILL</li> <li>SIDE EFFECTS: HEADACHES, NAUSEA, BREAST TENDERNESS, MOOD SWINGS</li> <li>REDUCED EFFECTIVENESS WITH DIARRHOEA / VOMITING OR ANTI-EPILEPTIC DRUGS</li> <li>INCREASED RISK OF VTE/STROKE</li> <li>INCREASED RISK OF BREAST &amp; CERVICAL CANCER</li> <li>DOES NOT PROTECT AGAINST STIs</li> </ul>	35 YEARS OLD & SMOKES >15 CIGARETTES/DAY MIGRANE WITH AURA (VISUAL, PARAESTHESIA, FOCAL WEAKNESS OR DYSPHAGIA) PERSONAL HISTORY OF DVT OR PE PERSON HISTORY OF STROKE OR ISCHAEMIC HEART DISEASE UNCONTROLLED HYPERTENSION CURRENT BREAST CANCER RECENT MAJOR SURGERY WITH PROLONGED IMMOBILISATION BREAST FEEDING AND <6 WEEKS POST PARTUM BMI > 35
POP	SYSTEMIC PROGESTOGEN TO INHIBIT OVULATION, THICKEN CERVICAL MUCUS & THIN ENDOMETRIUM	48 HOURS	N/A	99%	<ul style="list-style-type: none"> <li>ABLE TO BE USED BY WOMEN UNABLE TO USE OESTROGEN</li> <li>NO BREAKS REQUIRED(DO NOT NEED TO REMEMBER TO START/STOP PILLS)</li> <li>CAN BE QUICKLY STOPPED IF NOT TOLERATED</li> <li>NO INTERRUPTION OF INTERCOURSE</li> </ul>	<ul style="list-style-type: none"> <li>EASY TO FORGET PILL</li> <li>STRICTER "MISSED PILL RULES" THAN COCP</li> <li>CAUSES IRREGULAR BLEEDING, AMENORRHOEA, OR MORE FREQUENT BLEEDING</li> <li>REDUCED EFFECTIVENESS WITH DIARRHOEA / VOMITING OR ENZYME-INDUCERS</li> <li>DOES NOT PROTECT AGAINST STIs</li> </ul>	PREGNANCY BREAST CANCER UNDIAGNOSED PV BLEEDING LIVER DISEASE FORGETFULNESS
CONDOMS	BARRIER TO STOP SPERM & OVUM MEETING	IMMEDIATE	DURING INTERCOURSE	98%	<ul style="list-style-type: none"> <li>PROTECTION AGAINST STIs</li> <li>ONLY REQUIRED DURING INTERCOURSE</li> </ul>	<ul style="list-style-type: none"> <li>CAN BREAK DURING USE</li> <li>INTERUPT INTERCOURSE</li> </ul>	ALLERGIES TO LATEX
IMPLANT	SLOW RELEASE OF PROGESTOGEN TO INHIBIT OVULATION, THICKEN CERVICAL MUCUS & THIN ENDOMETRIUM	7 DAYS	3 YEARS	99%	<ul style="list-style-type: none"> <li>ABLE TO BE USED BY WOMEN UNABLE TO USE OESTROGEN</li> <li>NO INTERRUPTION OF INTERCOURSE</li> </ul>	<ul style="list-style-type: none"> <li>CAUSES IRREGULAR BLEEDING, AMENORRHOEA, OR MORE FREQUENT BLEEDING</li> <li>QUALIFIED STAFF REQUIRED FOR INSERTION (INFECTION &amp; BRUISING RISK)</li> <li>CAUSES/WORSENS ACNE</li> <li>DOES NOT PROTECT AGAINST STIs</li> </ul>	PREGNANCY BREAST CANCER UNDIAGNOSED PV BLEEDING LIVER DISEASE TAKING ENZYME INDUCERS
INJECTION	SYSTEMIC PROGESTOGEN TO INHIBIT OVULATION, THICKEN CERVICAL MUCUS & THIN ENDOMETRIUM	7 DAYS	3 MONTHS	99%	<ul style="list-style-type: none"> <li>ABLE TO BE USED BY WOMEN UNABLE TO USE OESTROGEN</li> <li>NO INTERRUPTION OF INTERCOURSE</li> </ul>	<ul style="list-style-type: none"> <li>IRREVERSIBLE FOR 3 MONTHS</li> <li>FERTILITY CAN TAKE MONTHS TO RETURN AFTER LAST INJECTION</li> <li>CAUSES IRREGULAR BLEEDING, AMENORRHOEA, OR MORE FREQUENT BLEEDING</li> <li>CAUSES OSTEOPOROSIS WITH LONG TERM USE</li> <li>CAUSES/WORSENS ACNE</li> <li>DOES NOT PROTECT AGAINST STIs</li> </ul>	UNABLE TO TOLERATE INJECTIONS PREGNANCY BREAST CANCER UNDIAGNOSED PV BLEEDING LIVER DISEASE TAKING ENZYME INDUCERS
IUS	LOCAL RELEASE OF PROGESTOGEN THINS ENDOMETRIUM & THICKENS CERVICAL MUCUS	7 DAYS	3-5 YEARS	99%	<ul style="list-style-type: none"> <li>ABLE TO BE USED BY WOMEN UNABLE TO USE OESTROGEN</li> <li>NO INTERRUPTION OF INTERCOURSE</li> <li>REDUCES HEAVY MENSTRUATION</li> <li>FEWER SYSTEMIC SIDE EFFECTS THAN IMPLANT</li> </ul>	<ul style="list-style-type: none"> <li>IRREGULAR MENSTRUATION &amp; AMENORRHOEA (FIRST 6 MONTHS FROM FITTING)</li> <li>SIDE EFFECTS: ACNE, HEADACHES, BREAST TENDERNESS</li> <li>QUALIFIED STAFF REQUIRED FOR INSERTION (REQUIRES SPECULUM EXAMINATION TO FIT AND REMOVE)</li> <li>RISK OF INFECTION &amp; UTERINE PERFORATION</li> <li>IF PREGNANCY OCCURS, MORE LIKELY TO BE ECTOPIC</li> <li>DOES NOT PROTECT AGAINST STIs</li> </ul>	PELVIC INFECTION PELVIC INFLAMMATORY DISEASE <3 MONTHS AGO CURRENT STI 48 HOURS-4 WEEKS POST PARTUM GYNAECOLOGICAL CANCERS SMALL UTERINE CAVITY UNDIAGNOSED PV BLEEDING BREAST CANCER

CONTRACEPTION	MECHANISM	STARTS WORKING	LENGTH OF TIME	EFFECTIVENESS	BENEFITS	LIMITATIONS	CONTRAINDICATIONS
IUD	COPPER CREATES ENVIRONMENT UNINHABITABLE FOR SPERM & OVUM	IMMEDIATE	5-10 YEARS	99%	<ul style="list-style-type: none"> <li>ABLE TO BE USED BY WOMEN UNABLE TO USE HORMONAL METHODS</li> <li>NO INTERRUPTION OF INTERCOURSE</li> <li>UNAFFECTED BY OTHER MEDICATIONS</li> <li>EMERGENCY CONTRACEPTION METHOD</li> </ul>	<ul style="list-style-type: none"> <li>LONGER, HEAVIER, MORE PAINFUL PERIODS</li> <li>QUALIFIED STAFF REQUIRED FOR INSERTION (REQUIRES SPECULUM EXAMINATION TO FIT AND REMOVE)</li> <li>RISK OF INFECTION &amp; UTERINE PERFORATION</li> <li>IF PREGNANCY OCCURS, MORE LIKELY TO BE ECTOPIC</li> <li>DOES NOT PROTECT AGAINST STIs</li> </ul>	PELVIC INFECTION PELVIC INFLAMMATORY DISEASE <3 MONTHS AGO CURRENT STI GYNAECOLOGICAL CANCERS SMALL UTERINE CAVITY UNDIAGNOSED PV BLEEDING COPPER ALLERGY
PATCH	DELIVER OESTROGEN / PROGESTOGEN THROUGH SKIN ABOVE OESTROGEN-SENSITIVE TISSUE TO INHIBIT OVULATION	IMMEDIATE	N/A	99%	<ul style="list-style-type: none"> <li>DO NOT NEED TO REMEMBER DAILY PILL</li> <li>NO INTERRUPTION OF INTERCOURSE</li> <li>MAKES PERIODS, LIGHTER, LESS PAINFUL &amp; MORE REGULAR</li> <li>CAN BE QUICKLY STOPPED IF NOT TOLERATED</li> <li>REDUCE OVARIAN/ENDOMETRIAL/BOWEL CANCER RISK</li> </ul>	<ul style="list-style-type: none"> <li>LOSE CONTRACEPTION IF PATCH IS NOT CHANGED AT THE CORRECT TIME / FALLS OFF</li> <li>SIDE EFFECTS: HEADACHES, NAUSEA, BREAST TENDERNESS, MOOD SWINGS, LOCAL IRRITATION</li> <li>REDUCED EFFECTIVENESS WITH ANTI-EPILEPTIC DRUGS</li> <li>INCREASED RISK OF VTE/STROKE</li> <li>INCREASED RISK OF BREAST &amp; CERVICAL CANCER</li> <li>DOES NOT PROTECT AGAINST STIs</li> </ul>	35 YEARS OLD & SMOKES >15 CIGARETTES/DAY MIGRAINE WITH AURA (VISUAL, PARAESTHESIA, FOCAL WEAKNESS OR DYSPHAGIA) PERSONAL HISTORY OF DVT OR PE PERSON HISTORY OF STROKE OR ISCHAEMIC HEART DISEASE UNCONTROLLED HYPERTENSION CURRENT BREAST CANCER RECENT MAJOR SURGERY WITH PROLONGED IMMOBILISATION BREAST FEEDING AND <6 WEEKS POST PARTUM
FEMALE STERILISATION	TUBE OCCLUSION, SALPINGECTOMY OR FALLOPIAN IMPLANTS	IMMEDIATE	LIFELONG	99% 1 IN 200 FAIL	<ul style="list-style-type: none"> <li>PERMANENT CONTRACEPTION</li> <li>NO INTERRUPTION OF INTERCOURSE</li> <li>DOES NOT AFFECT HORMONAL LEVELS</li> <li>UNAFFECTED BY OTHER MEDICATIONS</li> </ul>	<ul style="list-style-type: none"> <li>RISK OF SURGERY (BLEEDING , PAIN &amp; INFECTION)</li> <li>DIFFICULT TO REVERSE</li> <li>CAN (RARELY) STILL BECOME PREGNANT (OFTEN ECTOPIC)</li> <li>DOES NOT PROTECT AGAINST STIs</li> </ul>	FUTURE CONSIDERATION OF HAVING CHILDREN (IRREVERSIBLE PROCEDURE)
MALE STERILISATION	REMOVAL OF A SECTION OF VAS DEFERENS, PREVENTING SPERM FORMING SEMEN SPERM SAMPLE AT 8 WEEKS & 2-4 WEEKS LATER (BOTH MUST BE NEGATIVE)	IMMEDIATE (AFTER SEMEN CONFIRMED TO BE SPERM-FREE)	LIFELONG	99% 1 IN 2000 FAIL	<ul style="list-style-type: none"> <li>PERMANENT CONTRACEPTION</li> <li>NO INTERRUPTION OF INTERCOURSE</li> </ul>	<ul style="list-style-type: none"> <li>RISK OF SURGERY (BLEEDING , PAIN &amp; INFECTION)</li> <li>DIFFICULT TO REVERSE</li> <li>HAVE TO USE CONTRACEPTION UNTIL SEMEN CONFIRMED AS SPERM-FREE (CAN TAKE 3 MONTHS)</li> <li>DOES NOT PROTECT AGAINST STIs</li> </ul>	FUTURE CONSIDERATION OF HAVING CHILDREN (IRREVERSIBLE PROCEDURE)
NATURAL FAMILY PLANNING	TIMING INTERCOURSE TO OCCUR WHEN OVULATION IS LESS LIKELY USING FERTILITY SIGNS	IMMEDIATE	N/A	9% GET PREGNANT IN 1 YEAR	<ul style="list-style-type: none"> <li>ACCEPTABLE TO MOST FAITHS</li> <li>NO SIDE EFFECTS</li> </ul>	<ul style="list-style-type: none"> <li>LESS EFFECTIVE</li> <li>MUST AVOID SEX OR USE OTHER CONTRACEPTION WHEN FERTILE</li> <li>COMMITMENT TO MONITORING FERTILITY SIGNS</li> <li>FERTILITY SIGNS UNRELIABLE DURING BREASTFEEDING, ILLNESS OR STRESS, NO PROTECTION AGAINST STIs</li> </ul>	NONE

# DATA INTERPRETATION



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# KEY POINTS FOR DATA INTERPRETATION

## 01 CONFIRM PATIENT DETAILS

State you check:

- Patient details (name, DOB, NHS number)
- Date & time investigation was performed
- Compare to previous investigations of this type

## 02 STATE TYPE OF DATA

State the type of bloods, scans, etc. in as much detail as possible  
(e.g. a Non-contrast CT Head in axial view)

## 03 STATE ABNORMALITIES

"The abnormalities present are..."

Out-of-range values may be highlighted

State other tests that rule out other causes

Do not list all values

## 04 RELATE TO CLINICAL PICTURE

For each abnormality / relevant normal value, state what this means clinically

(e.g. a high d-dimer in the presence of chest pain/SOB, is indicative of a PE)

## 05 SYSTEMATIC APPROACH

**If you have time / are unsure, work through the bloods / imaging systematically**

## 06 SUMMARISE

**Summarise with main abnormalities & most likely diagnosis**

# DATA INTERPRETATION TOPICS

-  **Chest X-Rays (CXR)**
-  **Abdominal X-Rays (AXR)**
-  **Orthopaedic X-Rays**
-  **Chest / Abdominal CT Scans**
-  **CT Head**
-  **ABGs**
-  **MRI Scans**
-  **Fundoscopy**
-  **Audiograms**
-  **NEWS Charts**
-  **Paediatric Growth Charts**
-  **ECGs**
-  **Blood Tests**
-  **Pleural/Joint Fluid Aspiration**
-  **CSF fluid Aspiration**
-  **Urinalysis**
-  **Antibiotic Sensitivities**
-  **Lung Function Tests  
(spirometry & peak flow)**

## PRESENTING A CHEST X-RAY

**PATIENT DETAILS:** NAME, DATE OF BIRTH, AGE, SEX, HOSPITAL NUMBER  
DATE OF SCAN  
OFFER TO COMPARE TO PREVIOUS IMAGING

**IMAGE QUALITY:** **RIPE:**  
ROTATION  
INSPIRATION  
PICTURE AREA / TYPE  
EXPOSURE

## AIRWAY

- TRACHEA:** DEVIATION
- ROTATION
  - PNEUMOTHORAX
  - PLEURAL EFFUSION
  - CONSOLIDATION
- CARINA:** CARTILAGE AT DIVISION INTO 2 MAIN BRONCHI
- TUBE PLACEMENT (NG TUBE, ET TUBE)
- BRONCHI:** LEFT & RIGHT MAIN BRONCHUS
- INHALED FOREIGN OBJECT
- HILA:** UNILATERAL / BILATERAL ENLARGEMENT
- SARCOIDOSIS (BILATERAL)
  - MALIGNANCY (UNILATERAL/ASSYMETRICAL)

## BREATHING

- LUNG FIELDS:** 3 ZONES – ASYMMETRY
- CONSOLIDATION
  - FLUID
  - AIR
  - COLLAPSE
  - MASSESS
  - SIZE OF LUNG FIELDS
- PLEURA:** THICKENING OR ABNORMAL POSITION
- MESOTHELIOMA
  - TB
  - EMPYEMA
  - HAEMOTHORAX
  - RADIATION

## EVERYTHING ELSE

- BONES:** FRACTURE
- SOFT TISSUES:** SWELLING
- MEDIASTINUM:** WIDENING
- AORTIC DISSECTION
  - AORTIC ANEURYSM
- DEVICES:** NG TUBE, CENTRAL LINE, ECG CABLES, HEART VALVES, PACEMAKERS/ICD

## DIAPHRAGM

- DIAPHRAGM SHAPE:** FLATTENED
- COPD
  - PNEUMOTHORAX
- UNDER THE DIAPHRAGM:** FREE GAS / PNEUMOPERITONEUM
- COSTOPHRENIC ANGLES:** BLUNTING
- PLEURAL EFFUSION
  - CONSOLIDATION

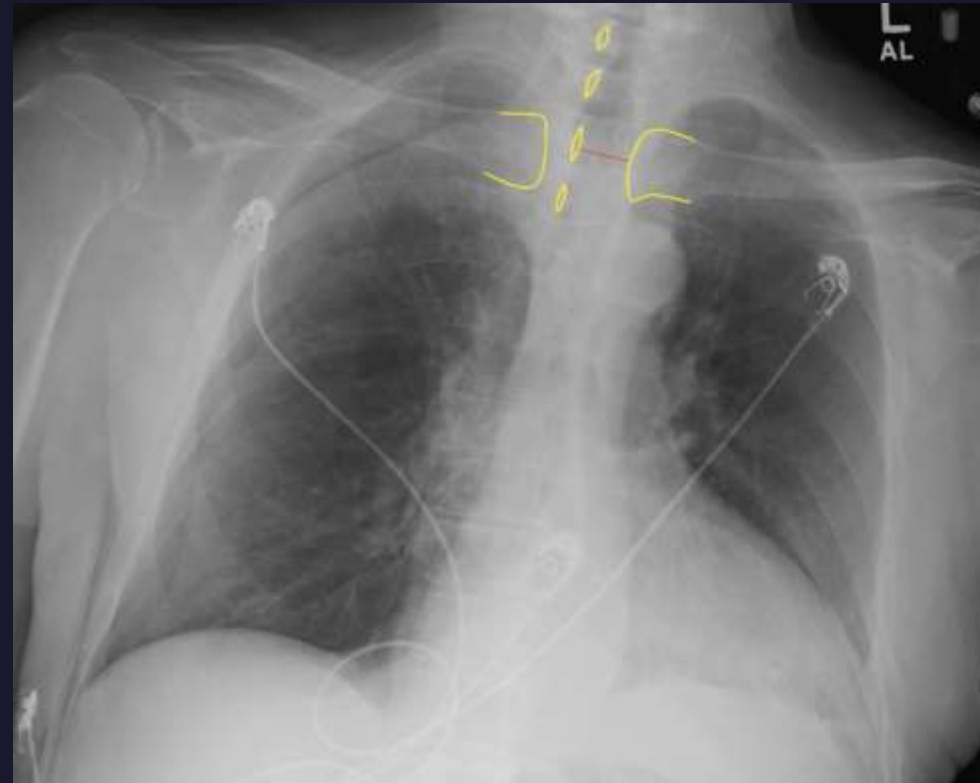
## CARDIAC

- HEART SIZE:** 3HEART SIZE < 50%  
CARDIOTHORACIC RATIO
- HEART FAILURE
  - VALVULAR PATHOLOGIES
  - CARDIOMYOPATHY
  - PULMONARY HTN
  - PERICARDIAL EFFUSION
- HEART BORDERS:** WELL DEFINED

**REVIEW AREAS**  
SUMMARISE YOUR FINDINGS

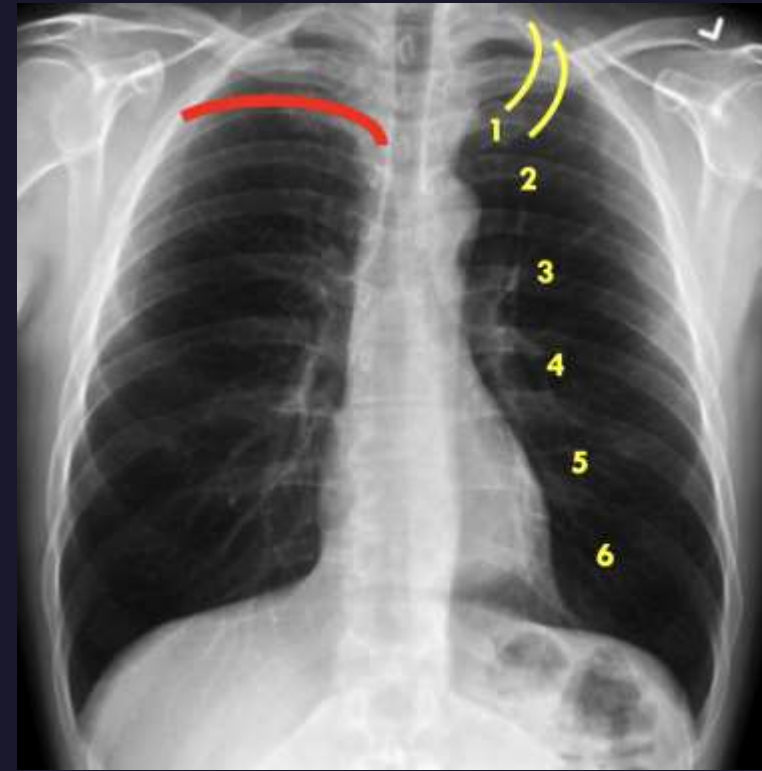
# ROTATION

- Medial border of clavicles must be equidistant to spinous processes
- Vertical spinous processes



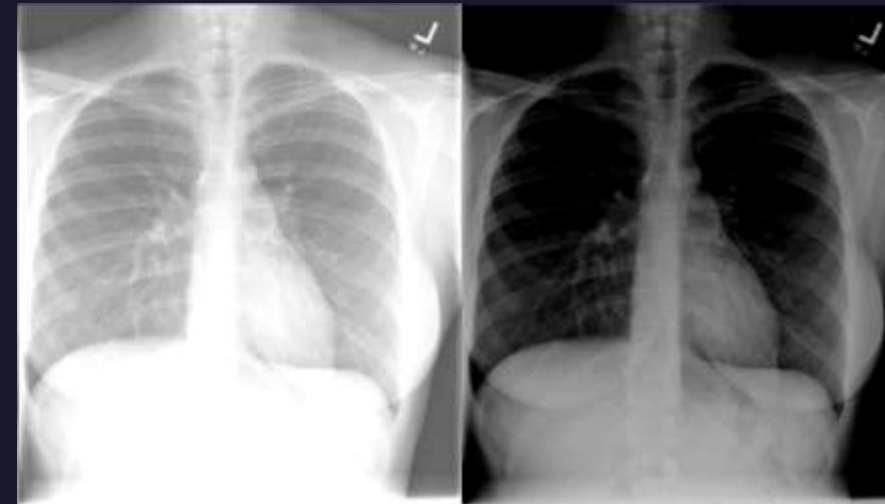
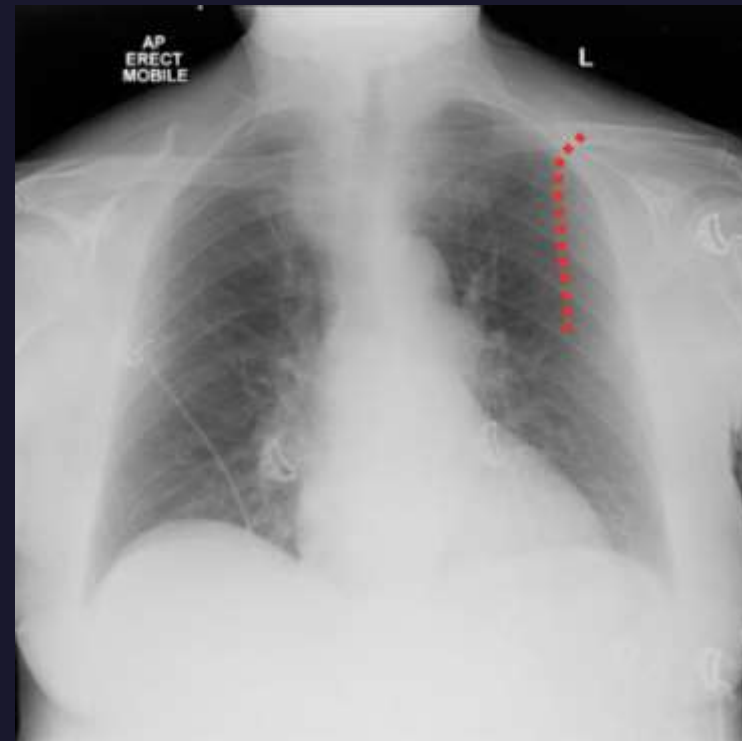
# INSPIRATION

- 5-6 anterior ribs OR 8-10 posterior ribs above the diaphragm
- Both lung apices, costophrenic angles & all lateral rib edges must be visible



# PICTURE TYPE

- PA or AP view
- Scapula out of lung fields



# EXPOSURE

- Vertebral bodies should be just visible through cardiac shadow





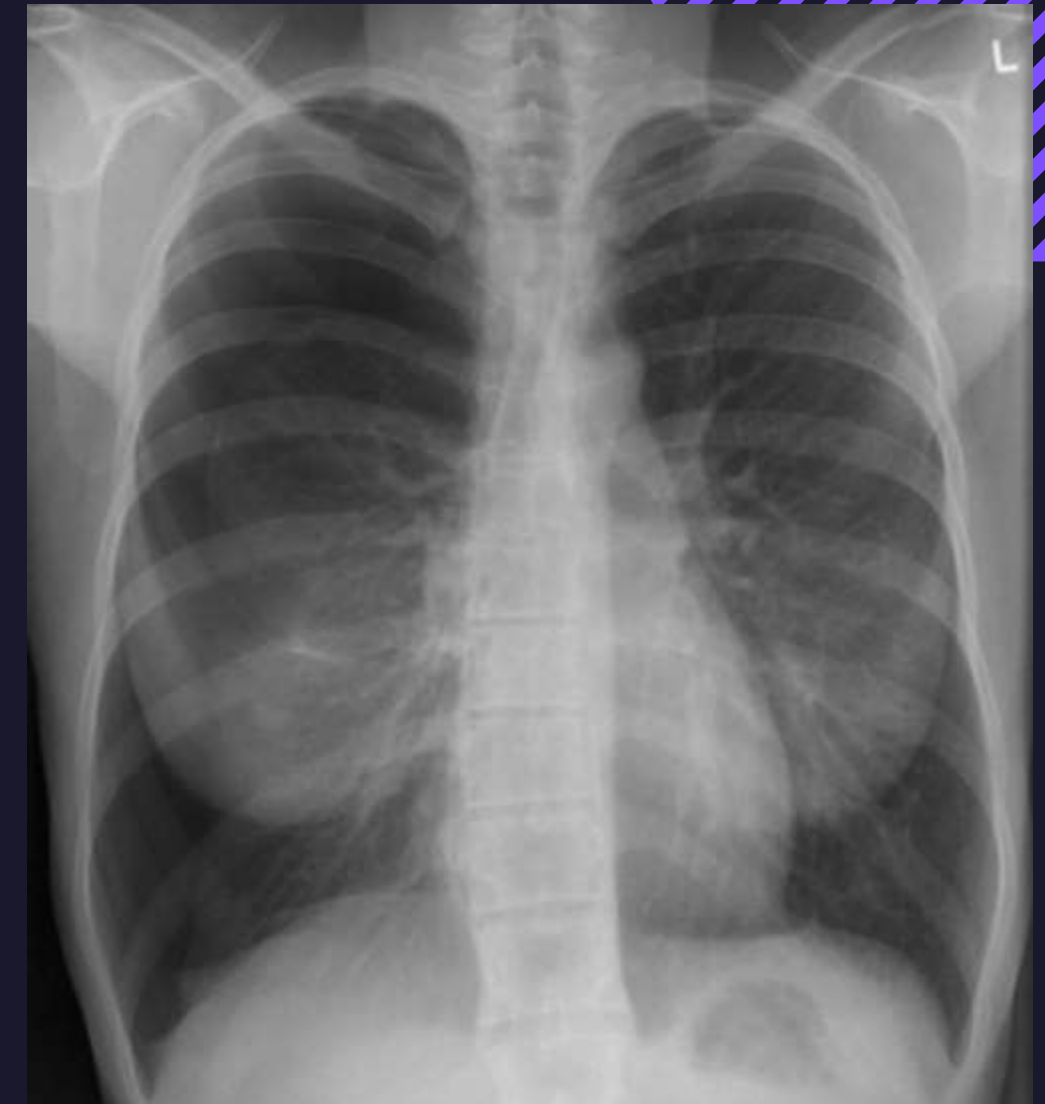
**Tension Pneumothorax**

- Mediastinal shift contralaterally
- Tracheal deviation away from pneumothorax
- Hemidiaphragm depression



**Inhaled Foreign Body**

- Object seen in lung fields
- Most likely in right main bronchus (wider, shorter & more vertical)



**Pneumothorax**

- Lung markings do not extend to peripheries
- Pleural line (lung edge)
- No mediastinal shift



**Consolidation (Pneumonia)**

- **Opacification of lung field (white)**
- **Air bronchograms**



**Pleural Effusion**

- **Costophrenic angle blunting**
- **Fluid in lung fissures**
- **Meniscus sign**
- **Mediastinal deviation (large, unilateral)**



**Pulmonary Fibrosis**

- **Interstitial shading (ground-glass appearance)**



**Heart Failure**

- **Alveolar Oedema**
- **Kerley B-lines**
- **Cardiomegaly**
- **Dilated upper lobe vessels**
- **Pleural Effusion**



**COPD**

- **Hyperinflation (>8 anterior ribs)**
- **Flat hemidiaphragms**
- **Decreased lung markings**
- **Bullae**
- **Prominent Hila**



**Pneumoperitoneum**

- **Air under the hemidiaphragm (not the fundus gas bubble on left)**
- **Erect CXR required**

# INTERPRET THIS CHEST X-RAY

## INTRO & RIPE

This is the chest x-ray of Mr Peter Pan, a 21-year-old male taken on 21<sup>st</sup> April 2022. At this point, I would want to compare this image to any previous chest x-rays available for this patient.

Looking at the quality of the image:

There is minimal rotation with the medial end of the clavicles equidistant from the spinous processes on the midline.

There is adequate inspiration, with 6 anterior ribs visible above the diaphragm and all parts of the chest cavity are visible

This is a PA projection

There is adequate exposure to the image, as I can see the vertebral bodies behind the heart.

### A

The trachea is deviated to the right side. The carina & 2 main bronchi visible and there is no hilar lymphadenopathy.

### B

In the left lung field, there is a pleural line, marking the edge of the left lung and the lung marking on this side do not extend out to the lateral chest wall in all lung zones. The pleura are normal, with no evidence of thickening.

### C

The cardiac shadow is poorly defined and displaced to the right. There is no evidence of cardiomegaly. The arch of the aorta is clearly visible.

### D

The left hemidiaphragm is depressed. There is no evidence of costophrenic angle blunting or pneumoperitoneum. A normal gas bubble is seen on the left side.

### E

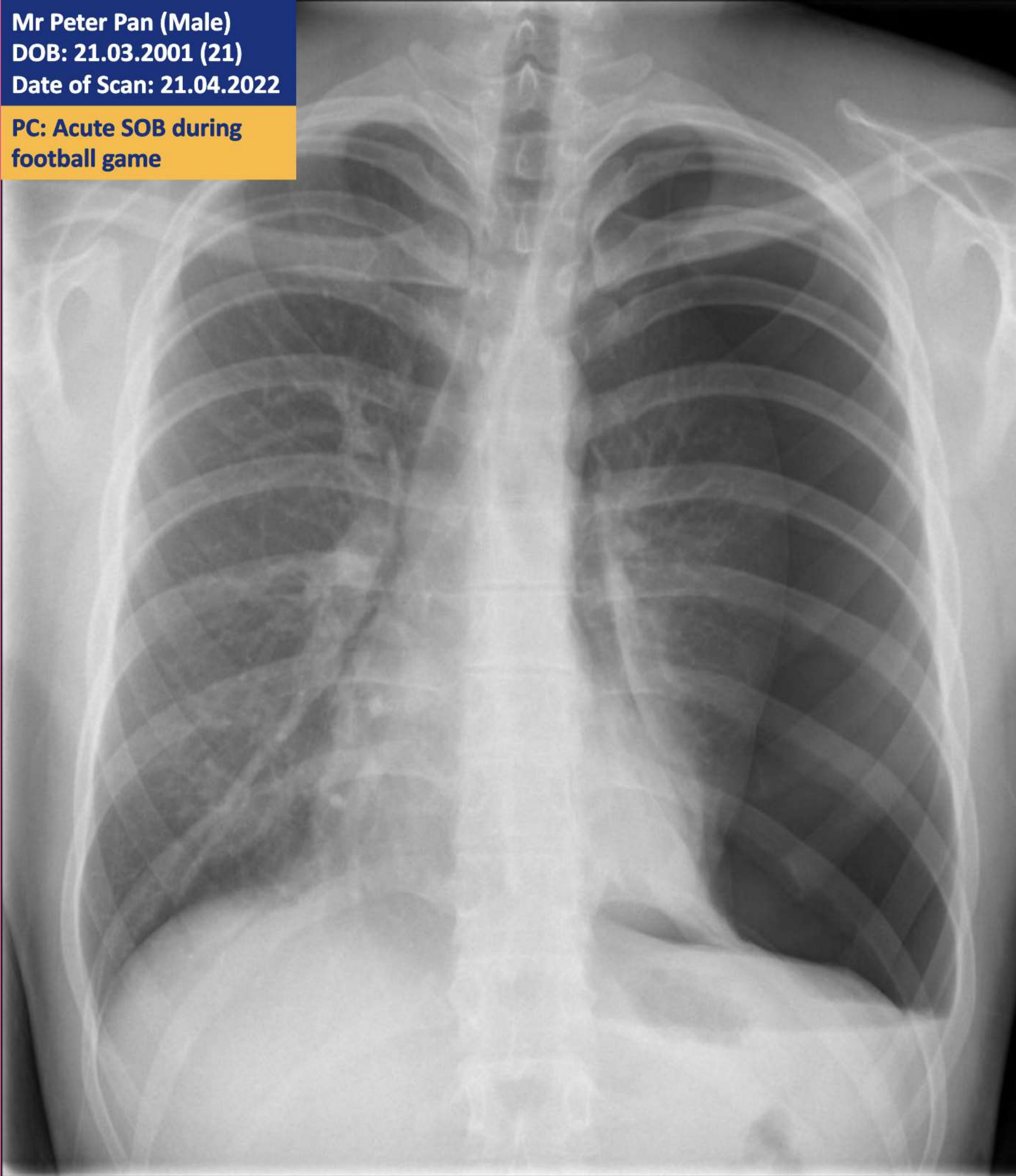
There is mediastinal shift towards the right side of the chest cavity. All soft tissues & bone structures appear normal.

## SUMMARY

To conclude, I have reviewed this PA chest x-ray of Mr Peter Pan, a 21-year-old male taken on 21<sup>st</sup> April 2022. My positive findings are tracheal deviation and mediastinal shift to the right of the chest cavity. Based on this patient's presenting complaint of shortness of breath, my top differential diagnosis is a tension pneumothorax.

Mr Peter Pan (Male)  
DOB: 21.03.2001 (21)  
Date of Scan: 21.04.2022

PC: Acute SOB during  
football game



pH

Check pH:

- <7.35: Acidosis
- >7.45: Alkalosis



pO<sub>2</sub>

Check Oxygenation Status:

- <10 Kpa: Hypoxaemia

pCO<sub>2</sub>

Check pCO<sub>2</sub>:

- High CO<sub>2</sub> → Acidosis
- Low CO<sub>2</sub> → Alkalosis

HCO<sub>3</sub><sup>-</sup>

Check HCO<sub>3</sub><sup>-</sup>:

- High HCO<sub>3</sub><sup>-</sup> → Alkalosis
- Low HCO<sub>3</sub><sup>-</sup> → Acidosis

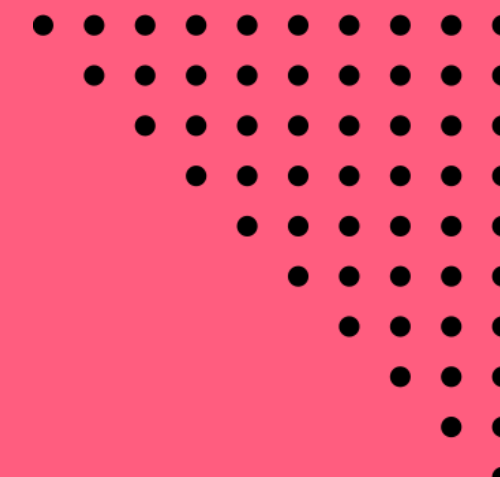


## ABG Interpretation



## Key Points

- CO<sub>2</sub> = Acidotic gas, HCO<sub>3</sub><sup>-</sup> = Alkalotic substance
- Type 1 Respiratory Failure: Low O<sub>2</sub>, Normal CO<sub>2</sub>
  - Oxygenation failure
- Type 2 Respiratory Failure: Low O<sub>2</sub>, High CO<sub>2</sub>
  - Ventilation Failure
- Partial compensation = pH not within normal range
- Full compensation = pH within normal range
- See if pH matches with CO<sub>2</sub> or HCO<sub>3</sub><sup>-</sup> to determine if respiratory or metabolic picture



Respiratory Acidosis with no metabolic compensation

- **pH: 7.20**
- **pCO<sub>2</sub>: 9.2 kPa**
- **HCO<sub>3</sub><sup>-</sup>: 24 mEq/L**

# Normal Ranges

- **pH: 7.35-7.45**
- **PO<sub>2</sub>: 11-13 kPa**
- **pCO<sub>2</sub>: 4.7-6.0 kPa**
- **HCO<sub>3</sub><sup>-</sup>: 22-26 mEq/L**
- **BE: -2 to +2 mmol/L**

Respiratory Alkalosis with partial metabolic compensation

- **pH: 7.47**
- **pCO<sub>2</sub>: 4.1 kPa**
- **HCO<sub>3</sub><sup>-</sup>: 20 mEq/L**

Metabolic Acidosis with partial respiratory compensation

- **pH: 7.25**
- **pCO<sub>2</sub>: 3.9 kPa**
- **HCO<sub>3</sub><sup>-</sup>: 19 mEq/L**

Metabolic Alkalosis with no respiratory compensation

- **pH: 7.53**
- **pCO<sub>2</sub>: 5.2 kPa**
- **HCO<sub>3</sub><sup>-</sup>: 30 mEq/L**

Metabolic Alkalosis with full respiratory compensation

- **pH: 7.44**
- **pCO<sub>2</sub>: 6.7 kPa**
- **HCO<sub>3</sub><sup>-</sup>: 32 mEq/L**

# OTHER STATION TYPES

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# OTHER STATIONS

## CLINICAL SKILLS

- Use placement time & clinical skills facilities to get these skills very slick
- Practice completing these skills in your allocated time
- Familiarise yourself with common scoring systems (e.g. GCS, CURB-65)
- Know the normal ranges for vital signs and how to calculate / write a NEWS score



## CASE PRESENTATION

- Use a patient that is memorable for you!
- Ensure you present the patient systematically with all relevant details
- Ensure you understand why all investigations & management steps have been undertaken
- Give as detailed answers as possible, showing understanding of guidelines & further reading



## PHARMACOLOGY

- **Key Drugs to Revise:** Atypical Antipsychotics, Bisphosphonates, Clozapine, DOAC, Insulin, Iron, Levodopa, Levothyroxine, Lithium, Metformin, Methotrexate, SSRI, Statin, Steroids & Warfarin
- **For each, learn:** Use, Mechanism of Action, Treatment course & how it is taken, Monitoring required, Side effects,, Contraindications of drug
- **Also Learn:** Common interactions between drugs (including electrolyte abnormalities), P450 inducers / inhibitors & Drug monitoring in different drugs





PLEASE FILL OUT THE FEEDBACK FORM

PLEASE TUNE IN TO OUR REMAINING SESSIONS THIS WEEK



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