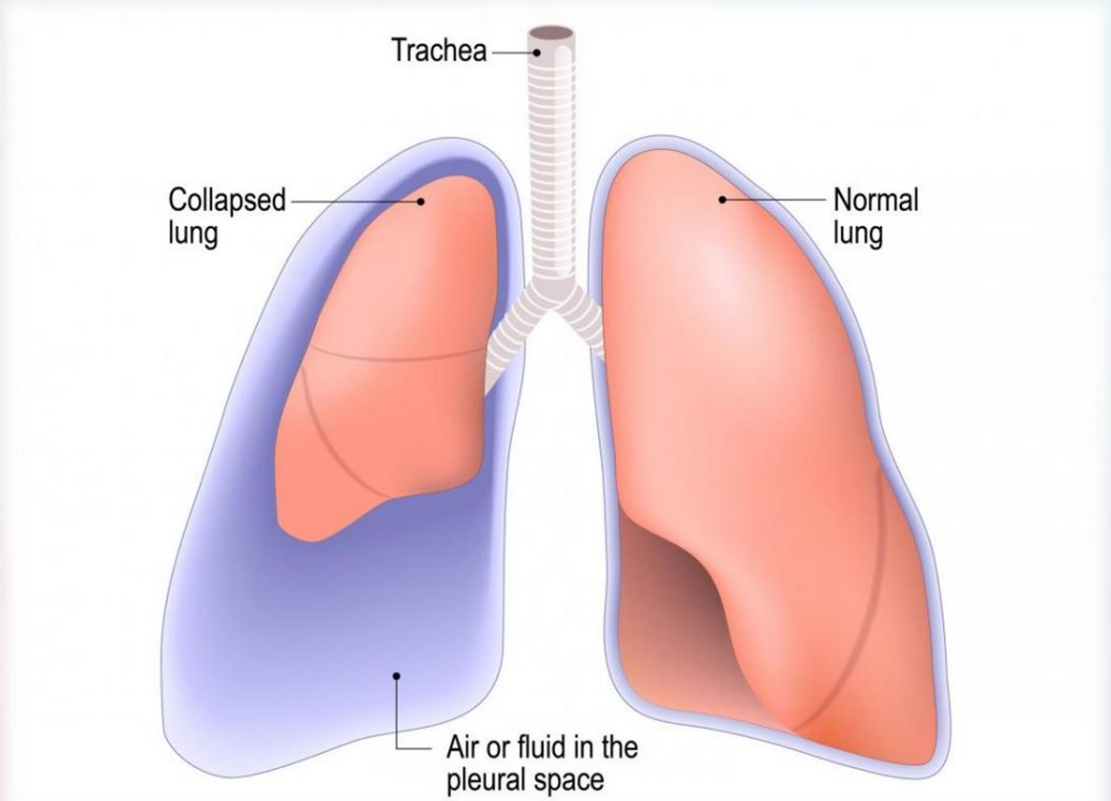
Spontaneous Pneumothorax



- ‘Pneumothorax’ means air in the pleural space. Primary spontaneous pneumothoraces occur predominantly in young people.
- Traditionally, patients are tall, thin and male but shape, size and gender often do not follow this rule.

- Primary pneumothoraces are usually caused by rupture of a pleural bleb, usually apical, and are thought to be due to congenital defects in the connective tissue of the alveolar walls.

- Both lungs are affected with equal frequency.

Causes of spontaneous pneumothorax

- In most cases, **the cause is unknown**.
- Tall and thin adolescent males are typically at greatest risk, but females can also have this condition.

Causes of spontaneous pneumothorax

- Other risk factors
  - connective tissue disorders
  - Smoking
  - Activities such as scuba diving
  - High altitudes and flying.

Clinical features-symptoms

- May be asymptomatic (fit, young, and small pneumothorax) or there may be sudden onset of dyspnoea and/or pleuritic chest pain.

- Patients with asthma or COPD may present with a sudden deterioration.

Clinical features-symptoms

- Mechanically ventilated patients may present with hypoxia or an increase in ventilation pressures.
- On careful questioning, they may be discovered to have had a milder version of these symptoms in the past but not sought medical attention.

Clinical features-signs

- Reduced expansion
- Hyper-resonance to percussion
- Diminished breath sounds on the affected side
- With a *tension pneumothorax*, the trachea will be deviated away from the

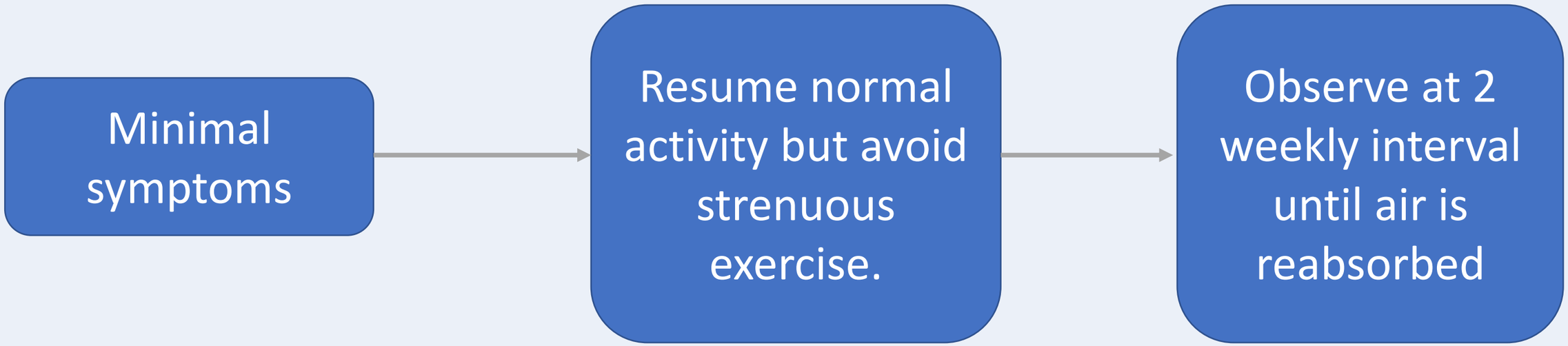
affected side

Investigations

- Plain **chest X-ray** is the baseline investigation and the size of pneumothorax should be recorded.
- If a patient's first pneumothorax resolves and there is no recurrence, cross-sectional imaging with a **CT chest** is unnecessary. However, if the chest is abnormal on resolution, a scan should be requested.

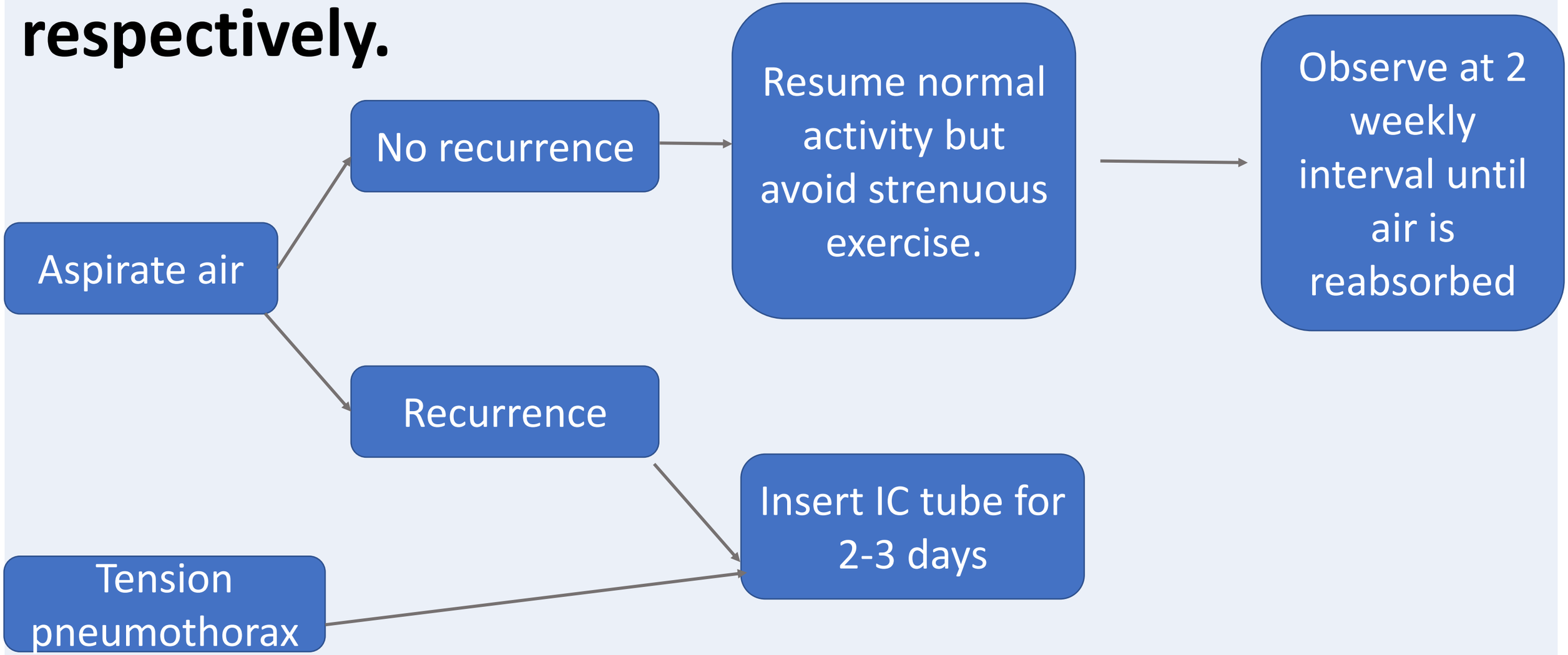
Management

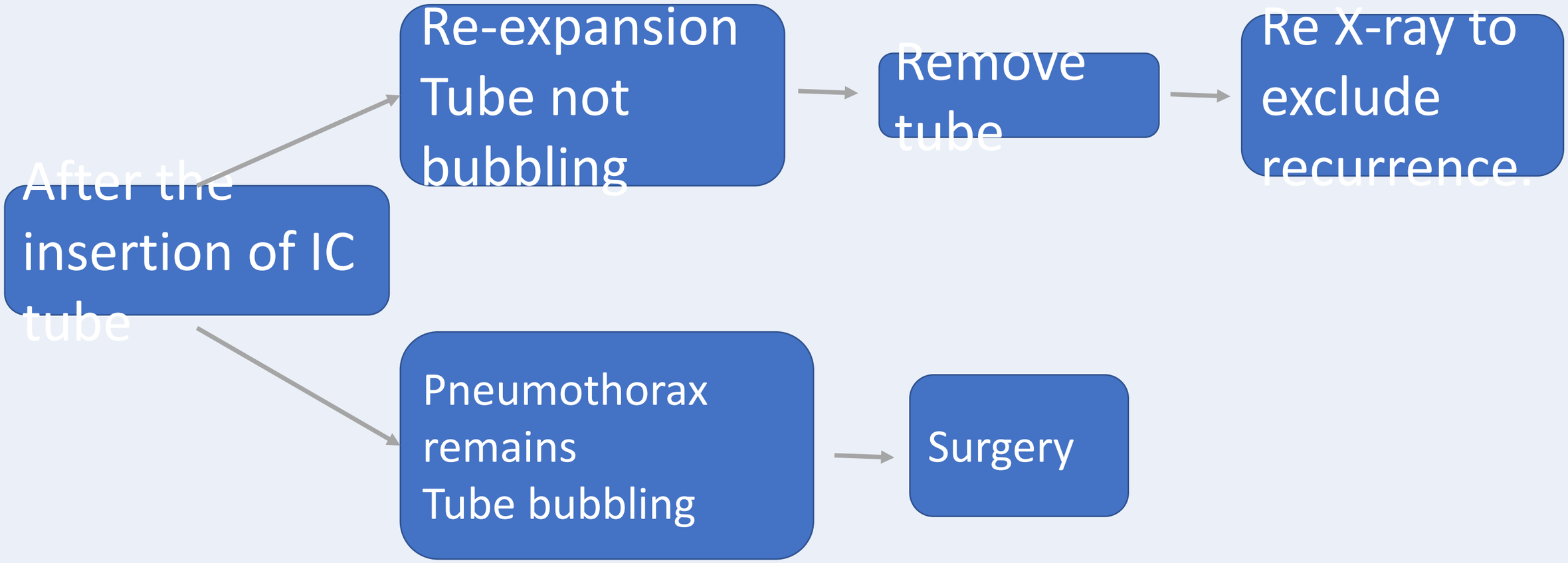
Small pneumothorax- small rim of air best seen on CXR <20% of volume.



Management

Medium & large pneumothorax- definite 20-50% of radiographic volume & >50% radiographic volume respectively.




After the insertion of IC tube
Re-expansion Tube not bubbling
Remove tube
Re X-ray to exclude recurrence
Pneumothorax remains Tube bubbling
Surgery

Simple aspiration of pneumothorax

1. Explain the nature of the procedure and obtain consent.
2. Infiltrate 2% lidocaine down to the pleura in the second intercostal space in the mid-clavicular line.
3. Push a 3–4 cm 16-gauge cannula through the pleura.
4. Connect the cannula to a three-way tap and 50mL syringe.
5. Aspirate up to 2.5 L of air. Stop if resistance to suction is felt or the patient coughs excessively.
6. Repeat the chest X-ray (in expiration) in the X-ray department.

Advice to patients after pneumothorax

- No flying for 1 week after complete resolution.
- No diving .
- Smoking cessation.
- 30–50% chance of recurrence.
- Future management: consider surgery.