

An Introduction to Asthma

25 minutes discussion
10-15 Minutes Q&A from
students

Host: Mark Williams

Founder of The Education Projects Group

Panelist: Minnie Kenworthy

3rd Year Medical Student at The University of
Manchester



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Housekeeping and Introductions:

- We will send a recording and slides out within 48 hours
- Q&A section at the end
- Please use the Upvote system
- We will be using poll questions, get involved!
- Quickfire questions with Minnie
- Over to Minnie!

Asthma

Minnie Kenworthy

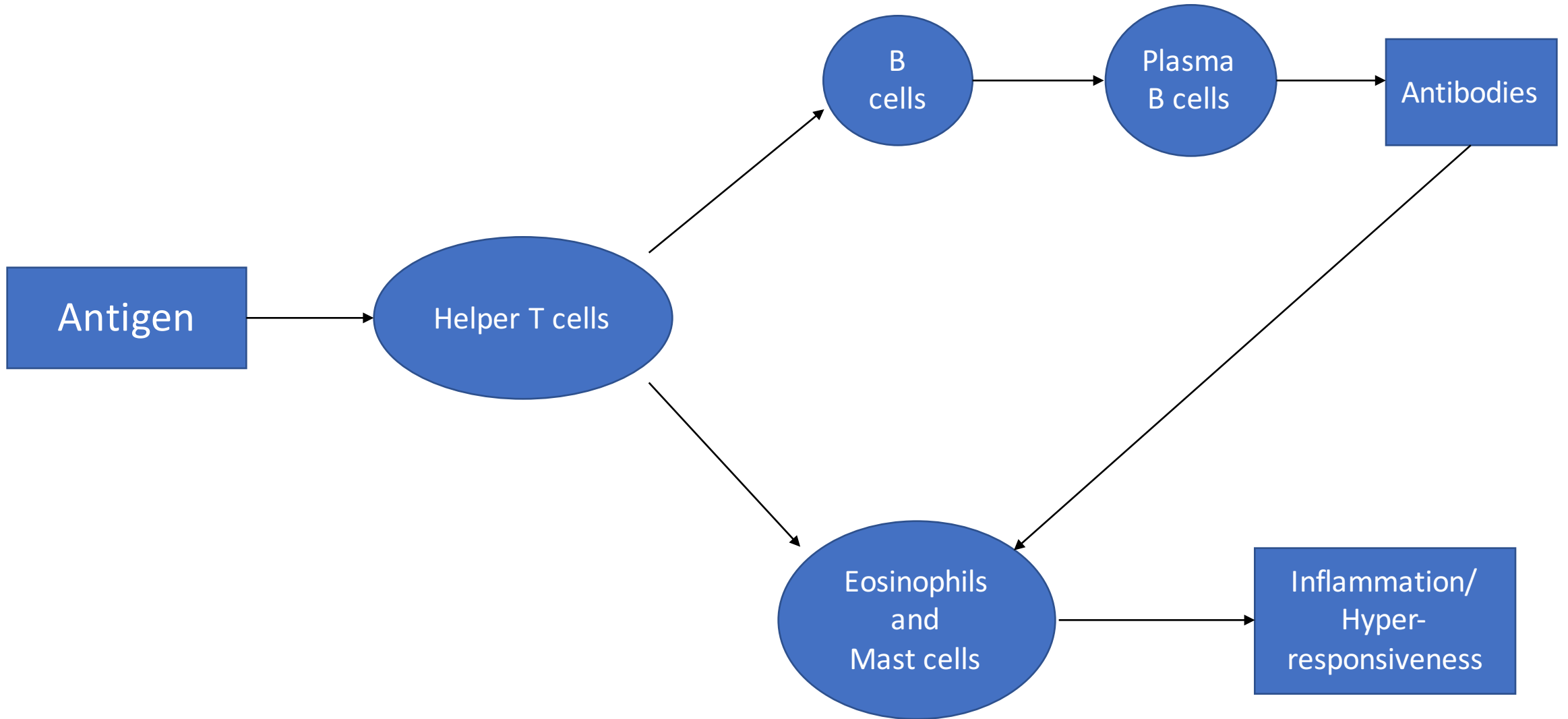
3rd Year at University of Manchester

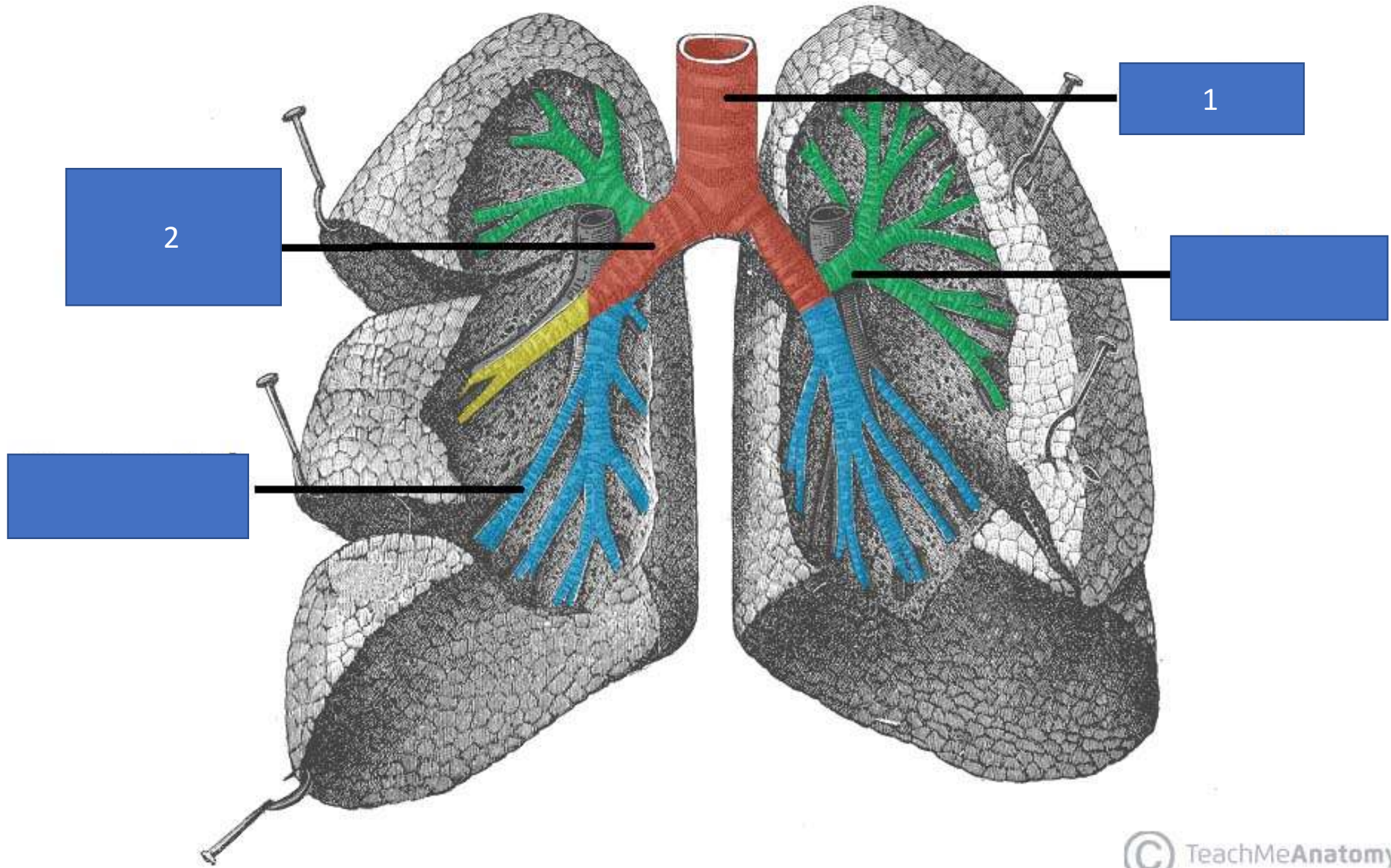
Poll: Which year are
you in?

What is Asthma?

- 'Chronic inflammatory airway disease characterised by intermittent airway obstruction and hyper-reactivity' BMJ Best Practice
- How long does a condition have to be present for to be considered chronic?
- **Chronic**: Condition lasting more than 3 months
- **Inflammatory**: Infiltration by immune cells, changes to airway
- **Intermittent**: On and off. Certain triggers.
- **Airway obstruction**: Blocking oxygen entry
- **Hyper-reactivity**: Exaggerated response to stimuli

**Which immune cells
produce antibodies?**



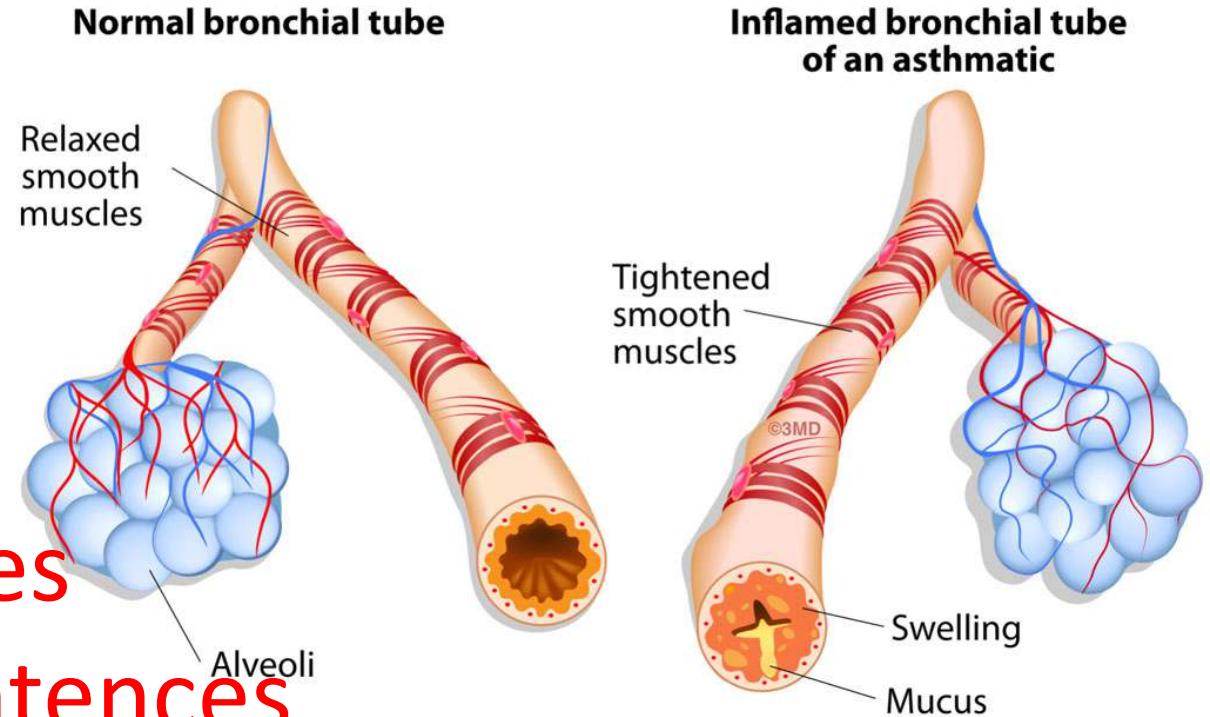


Symptoms

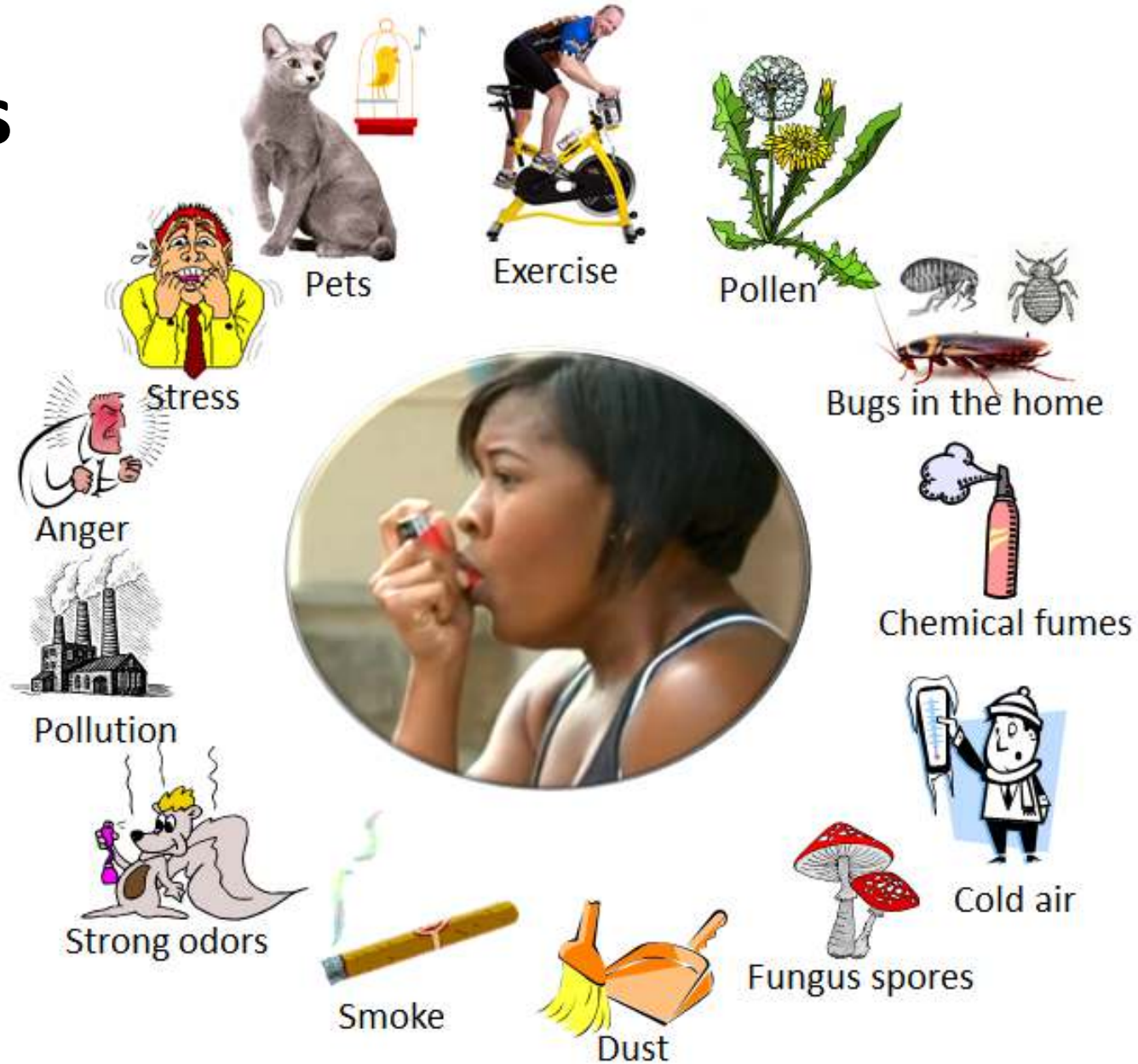
- Wheezing
- Breathlessness
- Tight chest
- Coughing
- Use of accessory muscles
- Unable to complete sentences in one breath
- Exhaustion

Asthma

Bronchoconstriction results in dyspnea, wheezing, and coughing



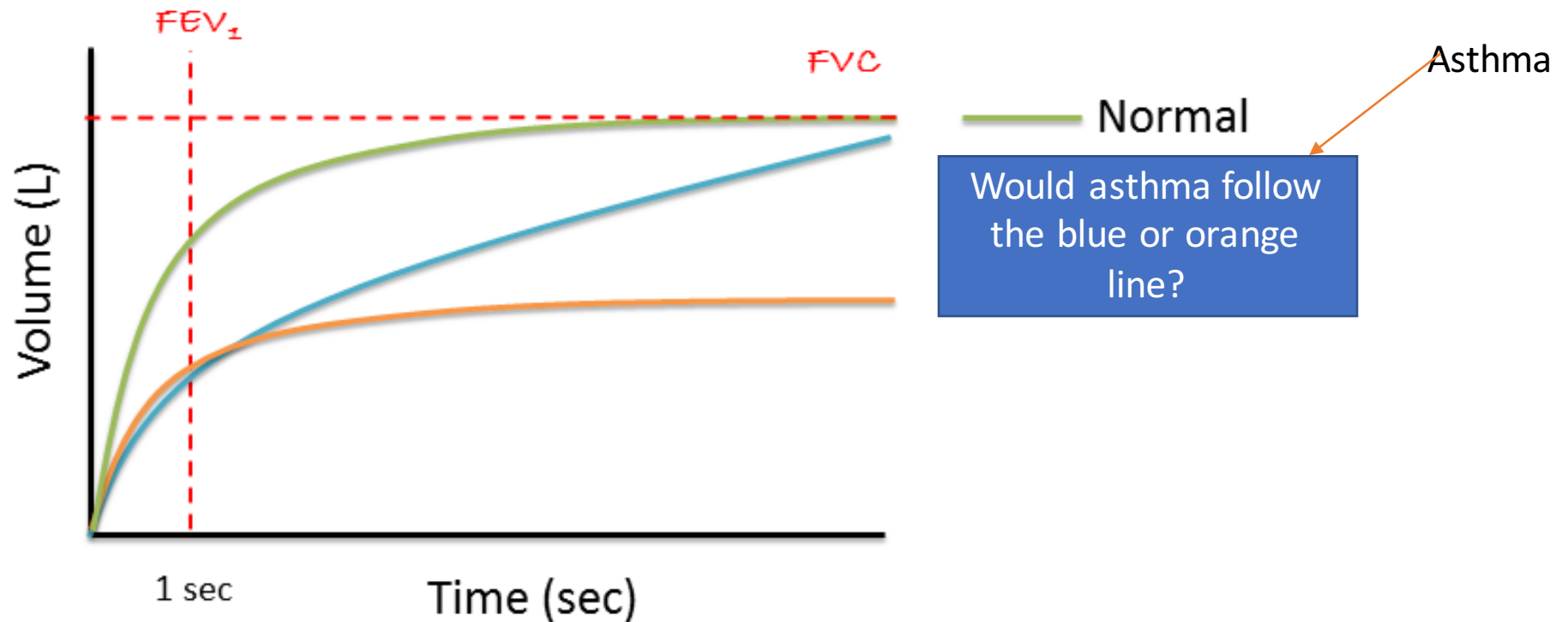
Triggers



Asthma Triggers

FEV1/FVC Ratio

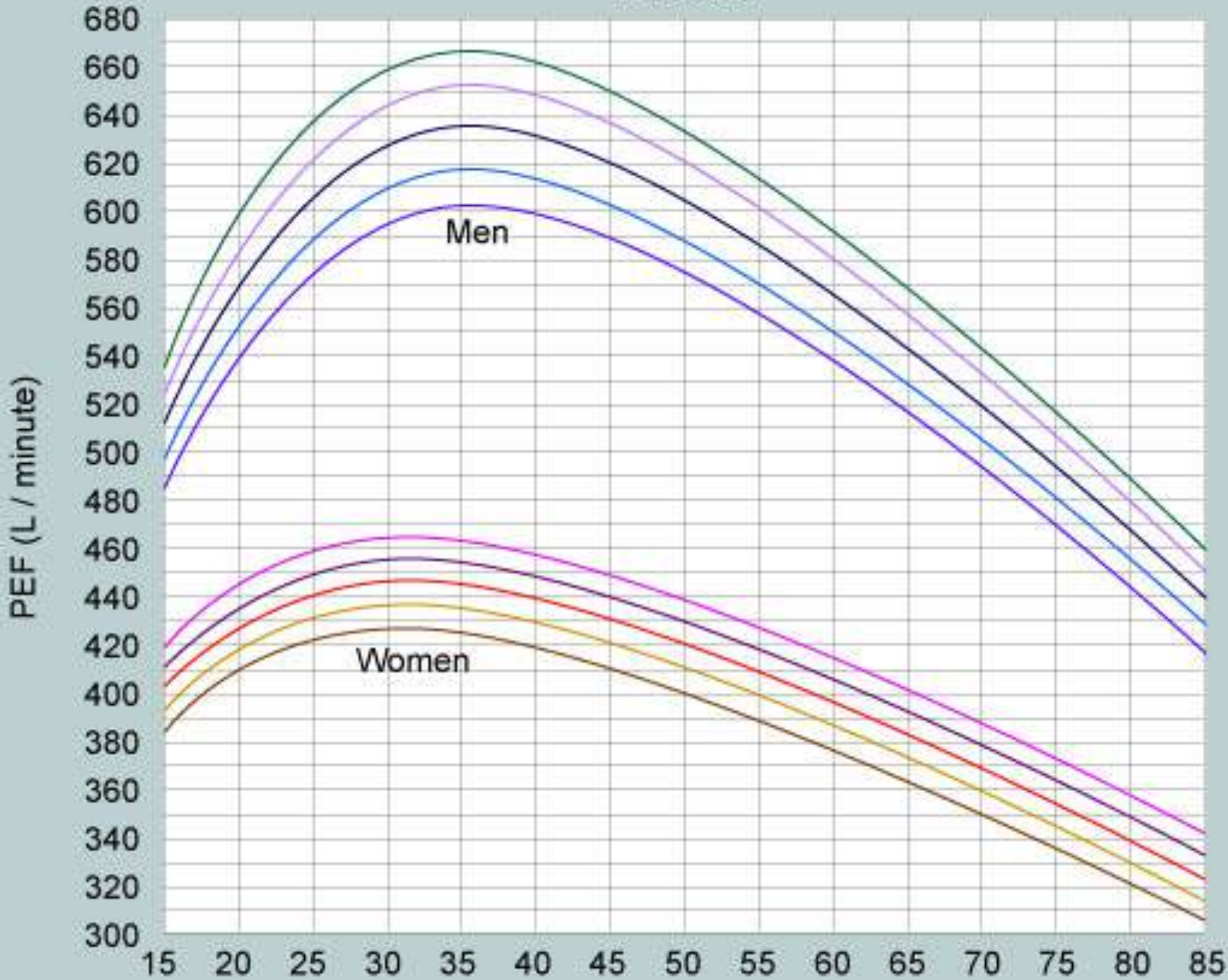
- FEV1 is forced expiratory volume at 1 second (The amount of air they can expire in the first second of forced expiration)
- FVC is forced vital capacity (Maximum amount of air a person can expel from their lungs after maximum inhalation)



Other Investigations

- Chest X-ray: Should be normal; excludes other pathologies
- Full blood count: Should be normal; may be raised eosinophils
- FeNO test: measures nitric oxide in breath to check for inflammation in the lungs
- Peak expiratory flow rate: comparison to normal values for height and gender





Beta 2 Agonists

- Relax muscles, dilate airways, decrease breathlessness
- Decrease release of chemical mediators by mast cells
- Short or long acting inhalers (SABA and LABA)
- Short acting for immediate relief and acts up to 5 hours e.g. salbutamol
- Long acting lasts for up to 12 hours e.g. salmeterol
- Can also give IV/oral in emergencies



**Which is a really
common side effect of a
salbutamol inhalers?**

Glucocorticoids

- Used for anti-inflammatory action
- Prevent progression of chronic asthma
- No effect on immediate response to allergen
- Adherence vital
- Usually inhaled
- May move up to oral tablet
- IV in emergencies
- Examples: Beclomethasone, budesonide



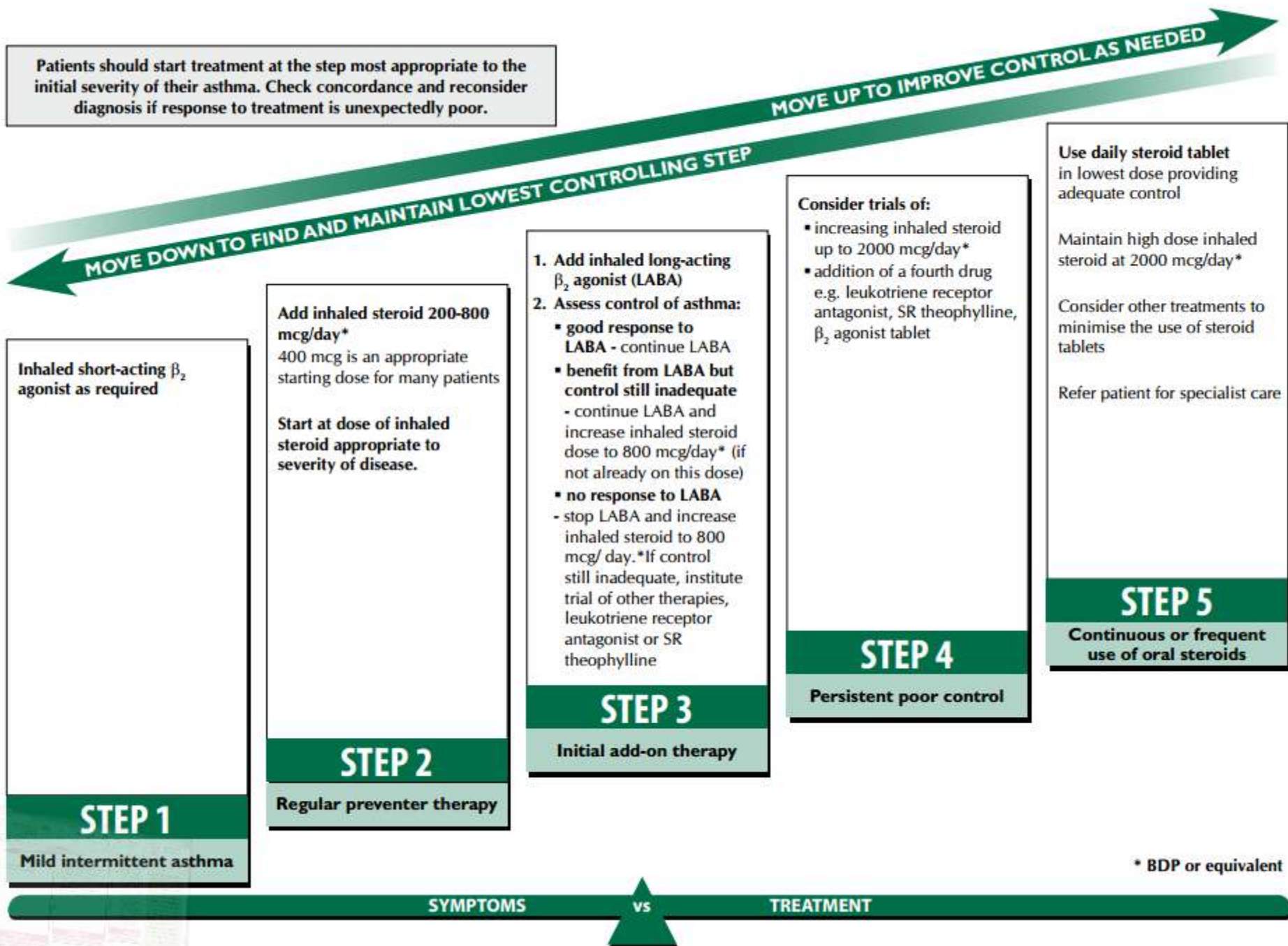


Figure 4: Summary of stepwise management in adults

Which medication is
used to immediately
relieve asthma
symptoms?

Acute Severe Asthma

- **Medical emergency**
- Oxygen
- Salbutamol nebuliser
- Ipratropium nebuliser (another bronchodilator)
- Oral prednisolone or IV hydrocortisone (corticosteroids)
- Consider Magnesium Sulphate (Relaxes bronchial smooth muscle)
- Discuss with seniors and ICU if not improving

