Asthma triggers

IgE

Inhaled allergens

 **(+)**

Acute inflammation

**(+)**

**(+)**

Exercise

**Acute inflammation**

Activation of mast cells and macrophages

Occupational challenge

**(+)**

↑ Proinflammatory mediators:

* Histamine
* Eicosanoids
* Reactive O2 species

Constriction of the airway, ↑ mucus secretion and vasodilation

Exudative mucus plugs with inflammatory and epithelial cells

Acute plasma protein leakage

Late-phase inflammation (6-9 hours)

Persistent involvement

Activation of eosinophils, CD4 (derived lymphocytic T cells), basophils, neutrophils and macrophages

Chronic inflammation

* Both central and peripheral airway structures are inflamed
* Involvement of all types of airway cells (eosinophils, T cells, mast cells, macrophages, epithelial cells, fibroblasts and bronchial smooth muscle cells)
* Regulation of airway inflammation, with initiation of a process of remodelling
* Release of cytokines and growth factors

**Figure 1:** Diagrammatic representation of the pathophysiology of asthma8