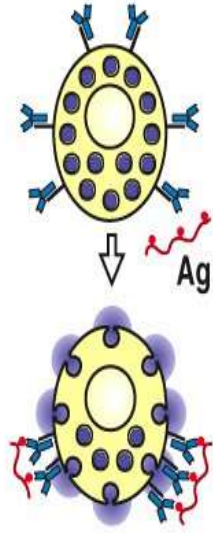
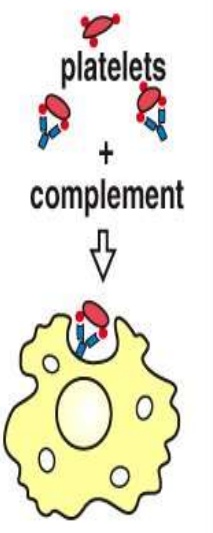
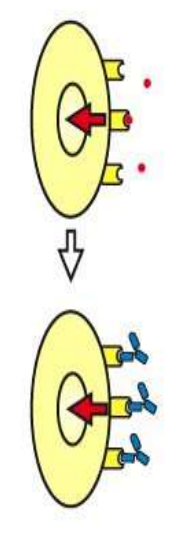
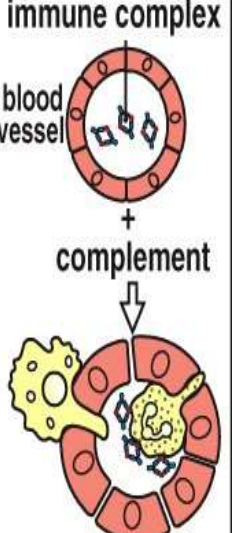
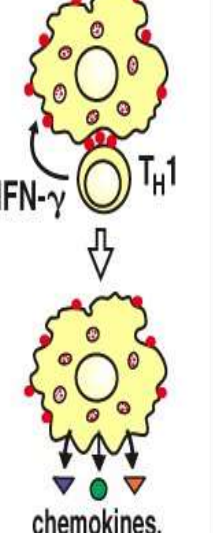
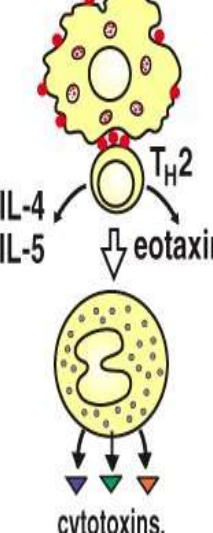
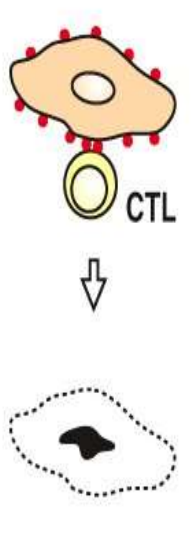




**ALERGI
PADA
SALURAN NAFAS**

	Type I	Type II		Type III	Type IV		
Immune reactant	IgE	IgG		IgG	T _H 1 cells	T _H 2 cells	CTL
Antigen	Soluble antigen	Cell- or matrix-associated antigen	Cell-surface receptor	Soluble antigen	Soluble antigen	Soluble antigen	Cell-associated antigen
Effector mechanism	Mast-cell activation	Complement, FcR ⁺ cells (phagocytes, NK cells)	Antibody alters signaling	Complement, Phagocytes	Macrophage activation	IgE production, Eosinophil activation, Mastocytosis	Cytotoxicity
							
Example of hypersensitivity reaction	Allergic rhinitis, asthma, systemic anaphylaxis	Some drug allergies (eg, penicillin)	Chronic urticaria (antibody against FCεR1α)	Serum sickness, Arthus reaction	Contact dermatitis, tuberculin reaction	Chronic asthma, chronic allergic rhinitis	Contact dermatitis

Conjunctivitis

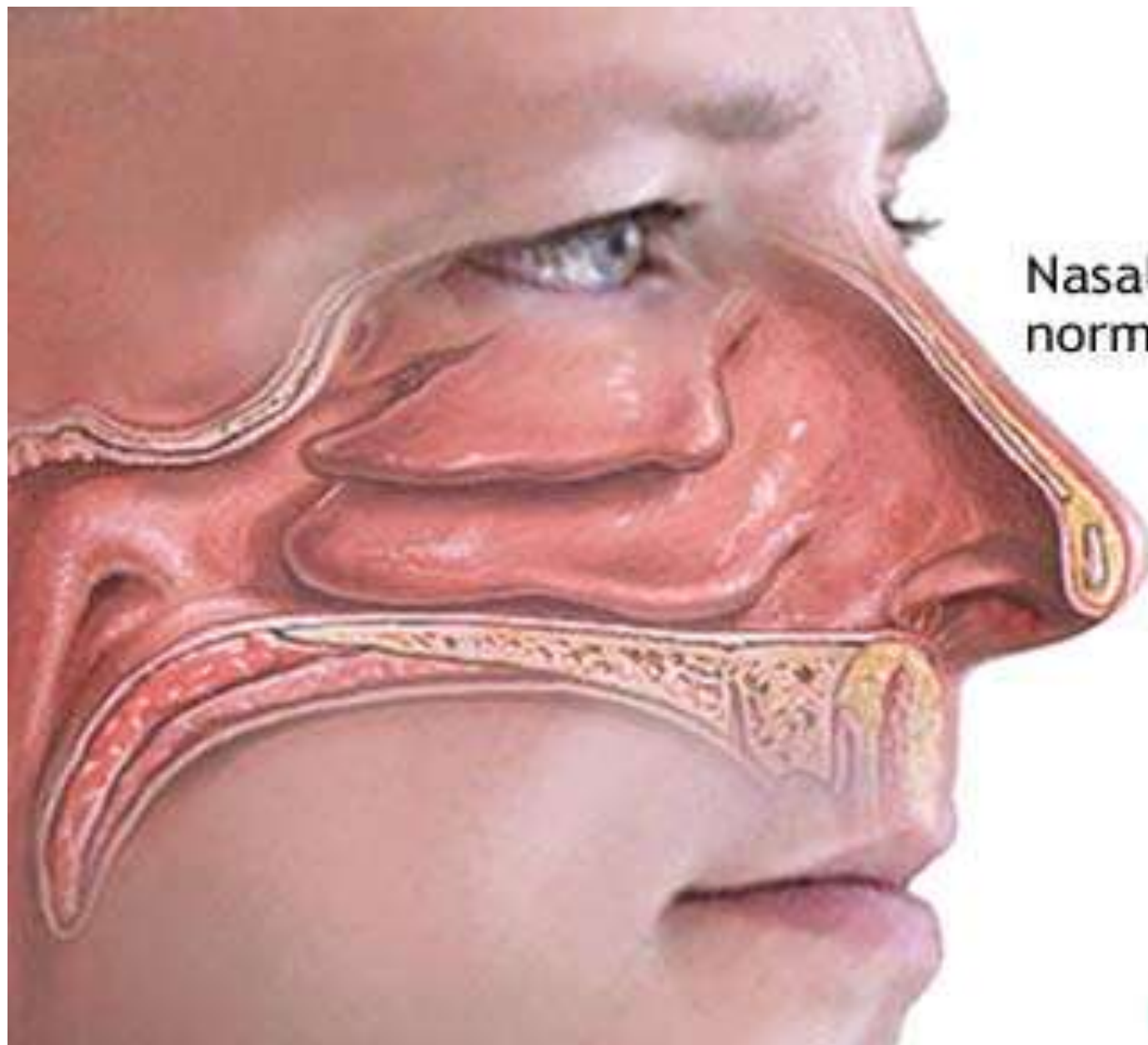
Rhinitis

Urticaria

Asthma

Gastroenteritis

Clinical
manifestations
of
type I
hypersensitivity



Nasal cavity:
normal

How pollen makes us sneeze and wheeze

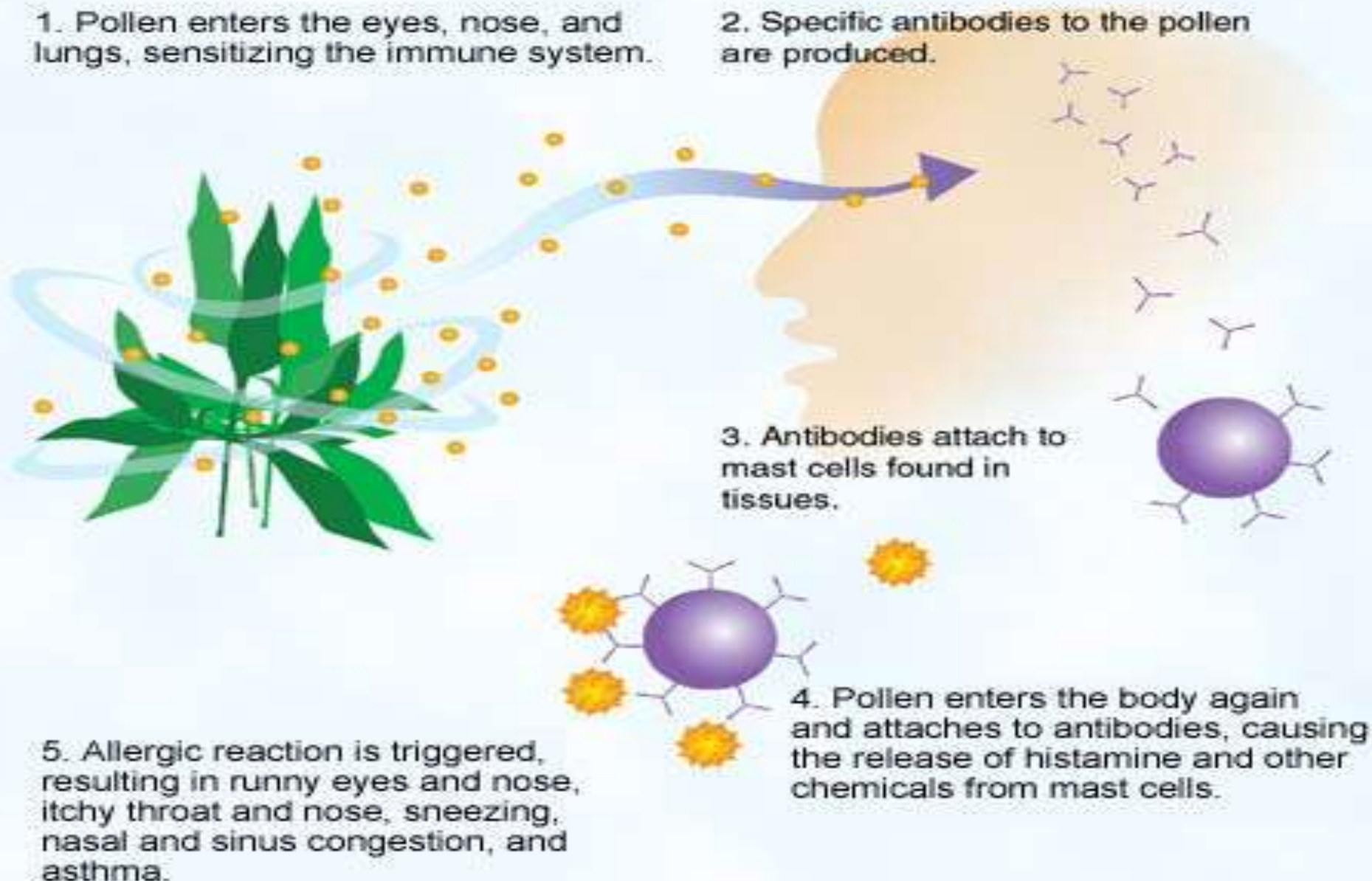
1. Pollen enters the eyes, nose, and lungs, sensitizing the immune system.

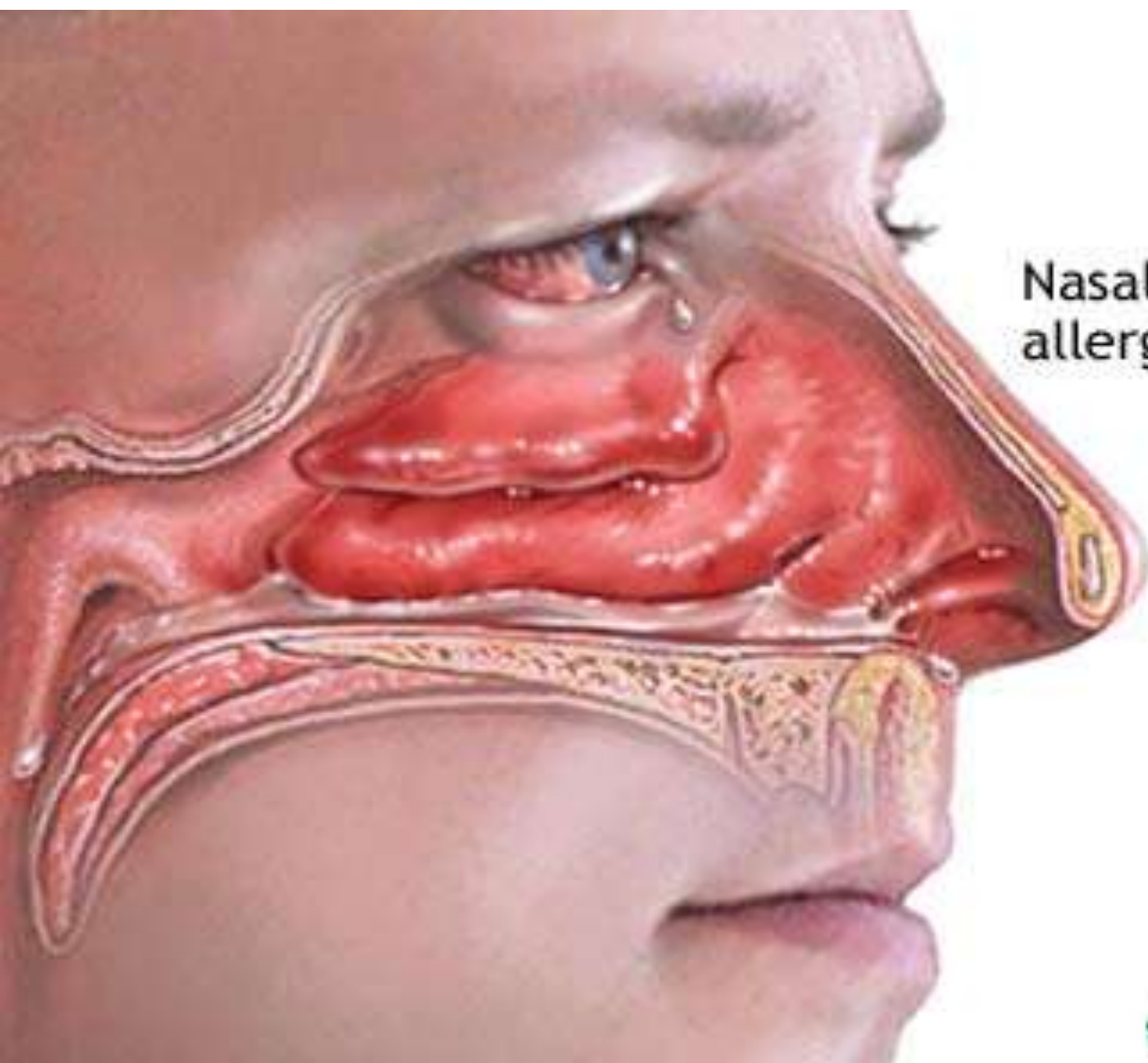
2. Specific antibodies to the pollen are produced.

3. Antibodies attach to mast cells found in tissues.

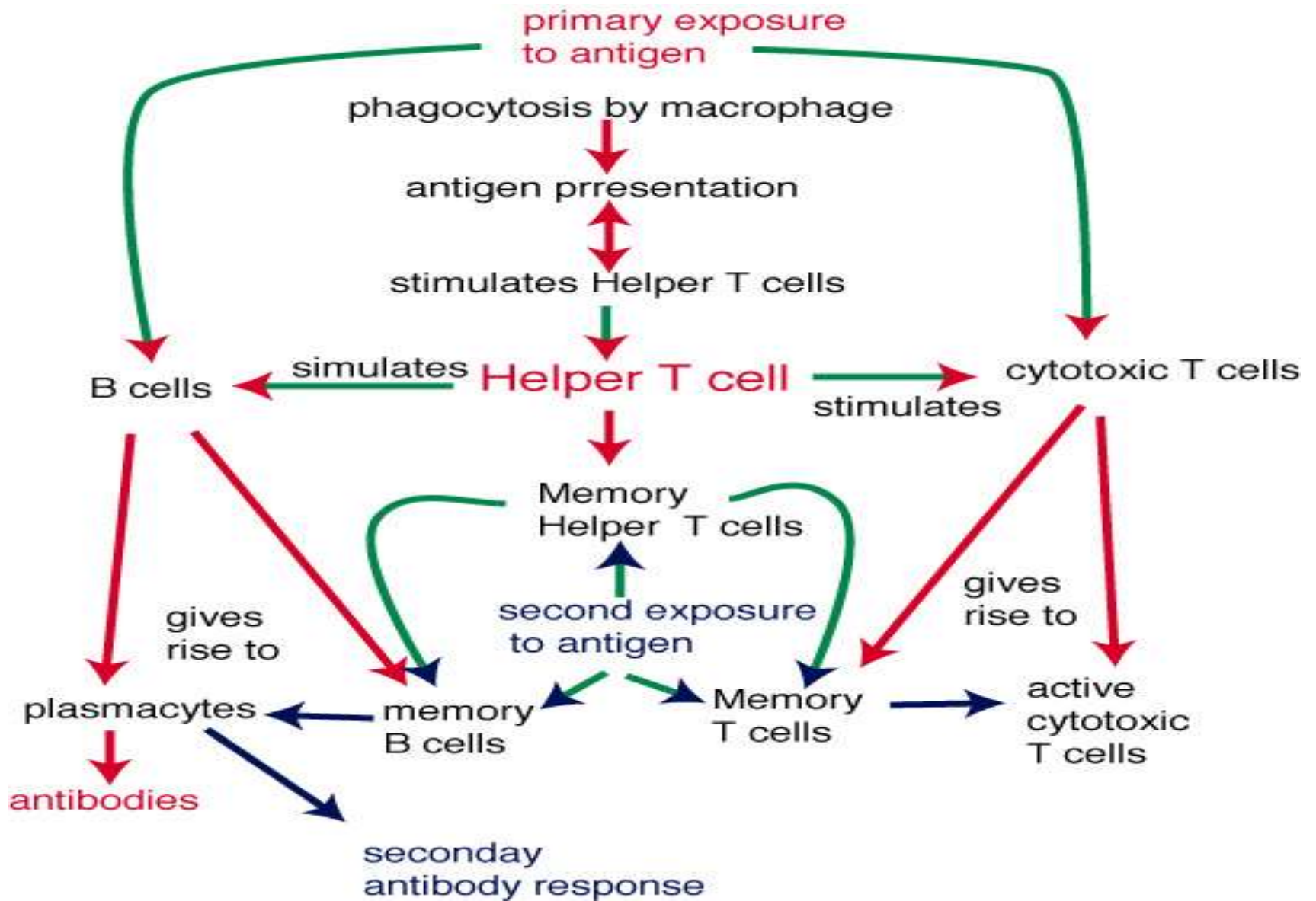
4. Pollen enters the body again and attaches to antibodies, causing the release of histamine and other chemicals from mast cells.

5. Allergic reaction is triggered, resulting in runny eyes and nose, itchy throat and nose, sneezing, nasal and sinus congestion, and asthma.





Nasal cavity:
allergic rhinitis



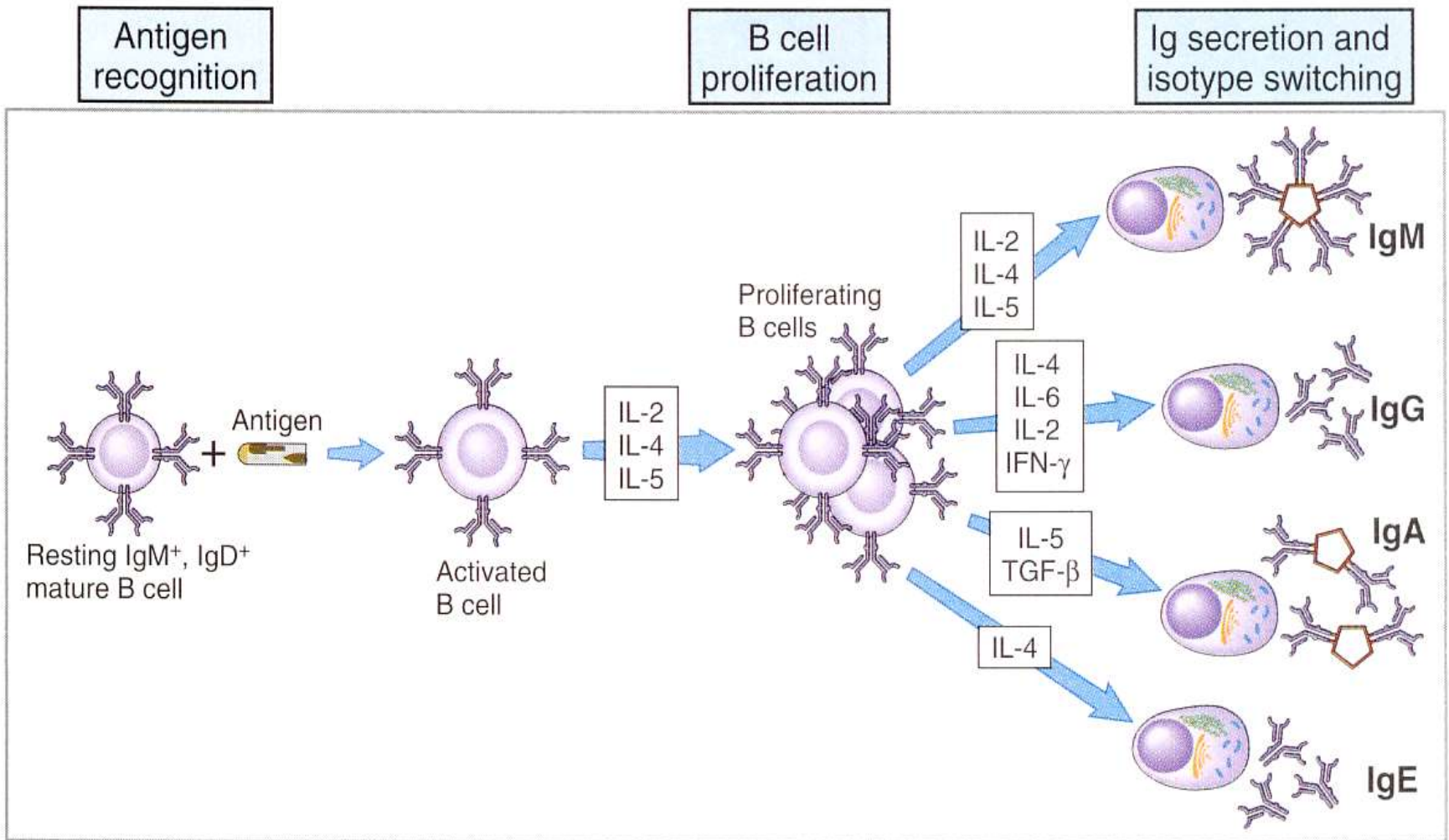


Figure 9–11 Functions of cytokines in B cell growth and differentiation.

Various cytokines stimulate different stages of B cell proliferation and differentiation in humans and mice. The same cytokines may have less striking effects at other stages that are not shown, and there may be differences among species. IFN, interferon; Ig, immunoglobulin; IL, interleukin; TGF, transforming growth factor.

Ig gene family

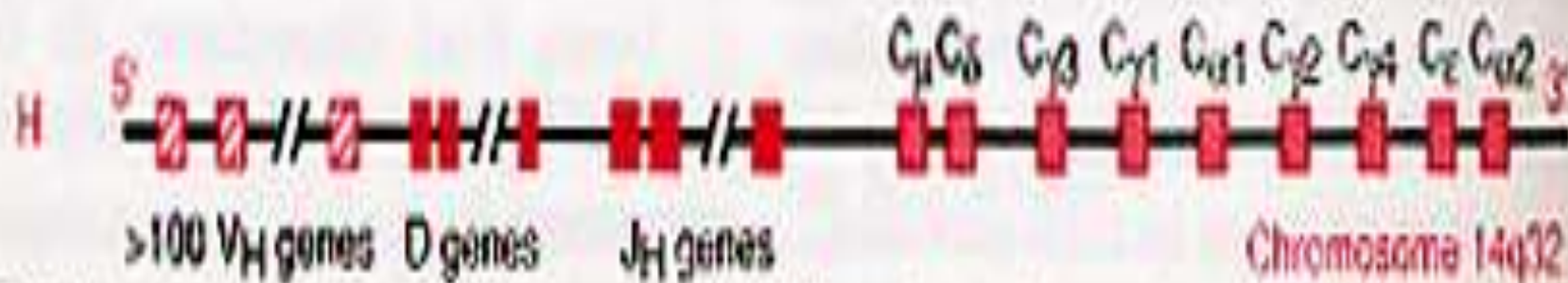
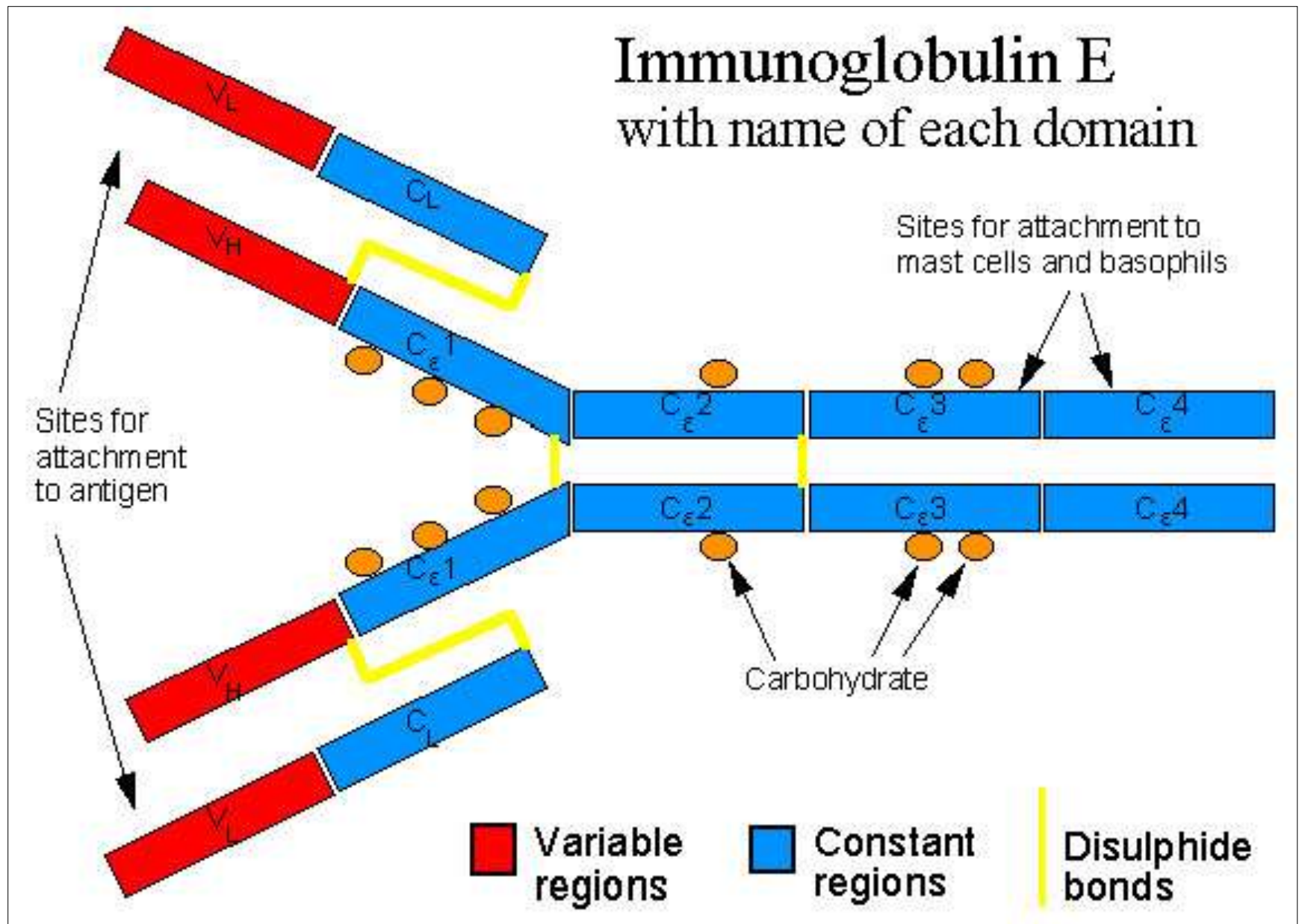


Figure 14-5. Structure of the immunoglobulin gene clusters. Coding and noncoding regions are not drawn to scale. The exact number of genes and the overall size of the gene clusters is not known.

Immunoglobulin E

with name of each domain



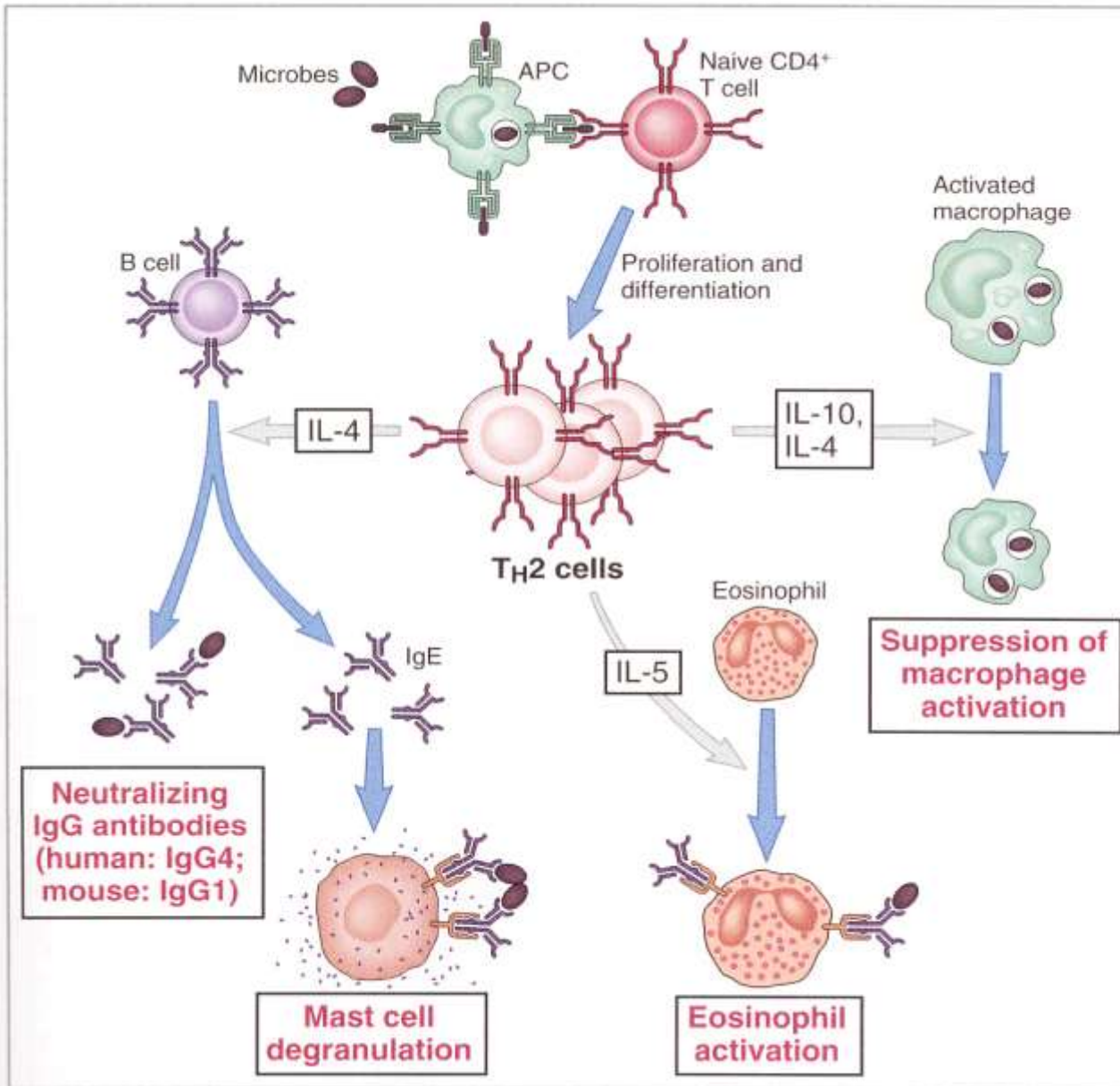
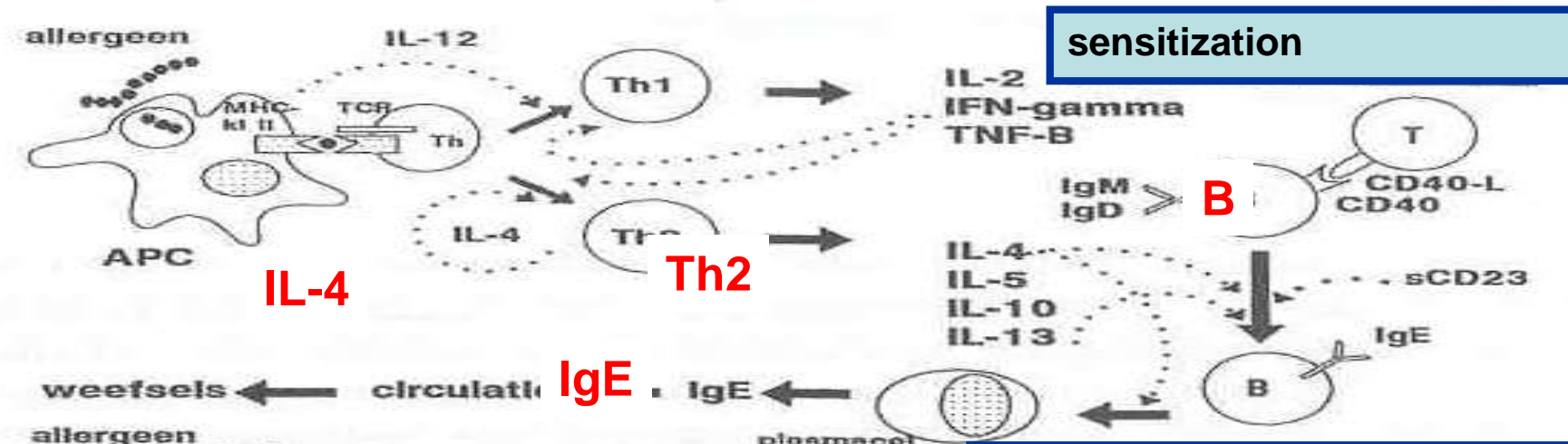


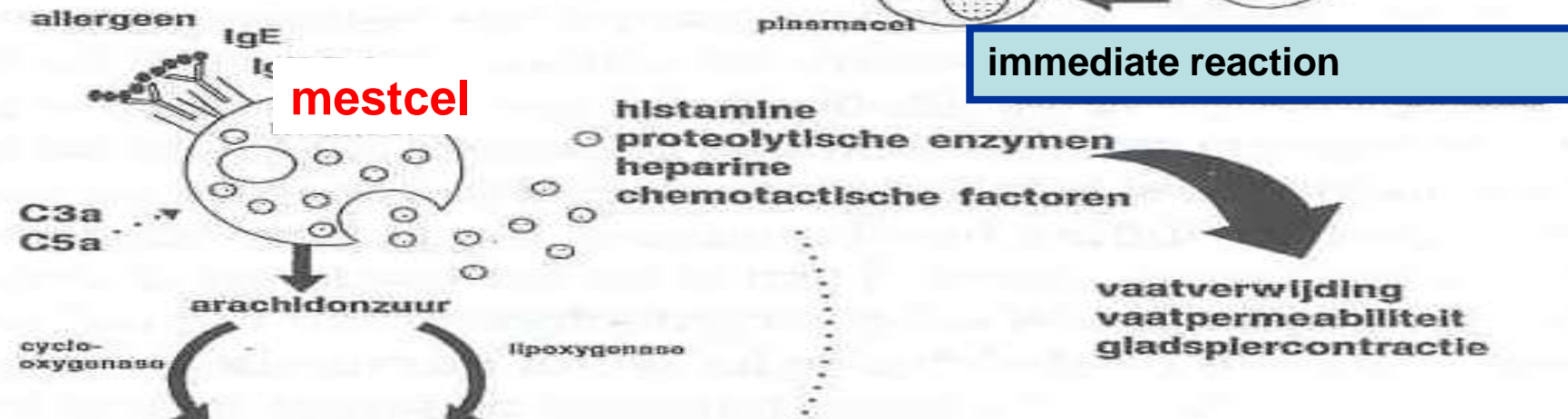
Figure 11–17 Effector functions of T_H2 cells.

$CD4^+$ T cells that differentiate into T_H2 cells secrete interleukin-4 (IL-4) and interleukin-5 (IL-5). IL-4 acts on B cells to stimulate production of antibodies that bind to mast cells, such as IgE. IL-4 is also an auto-crine growth and differentiation cytokine for T_H2 cells. IL-5 activates eosinophils. Cytokines from T_H2 cells antagonize the macrophage-activating effects of T_H1 cell-derived cytokines. APC, antigen-presenting cell.

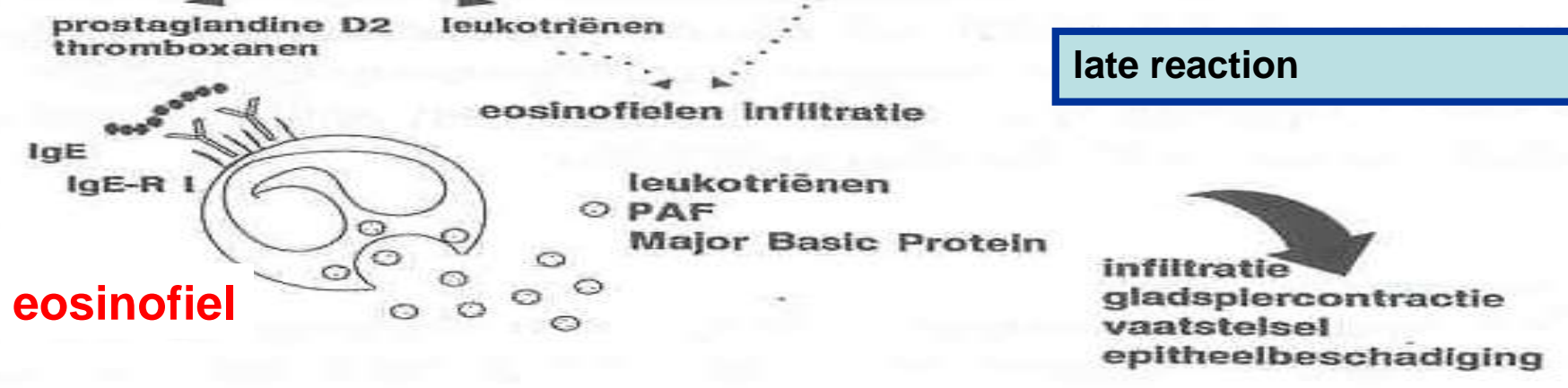
sensitization



immediate reaction



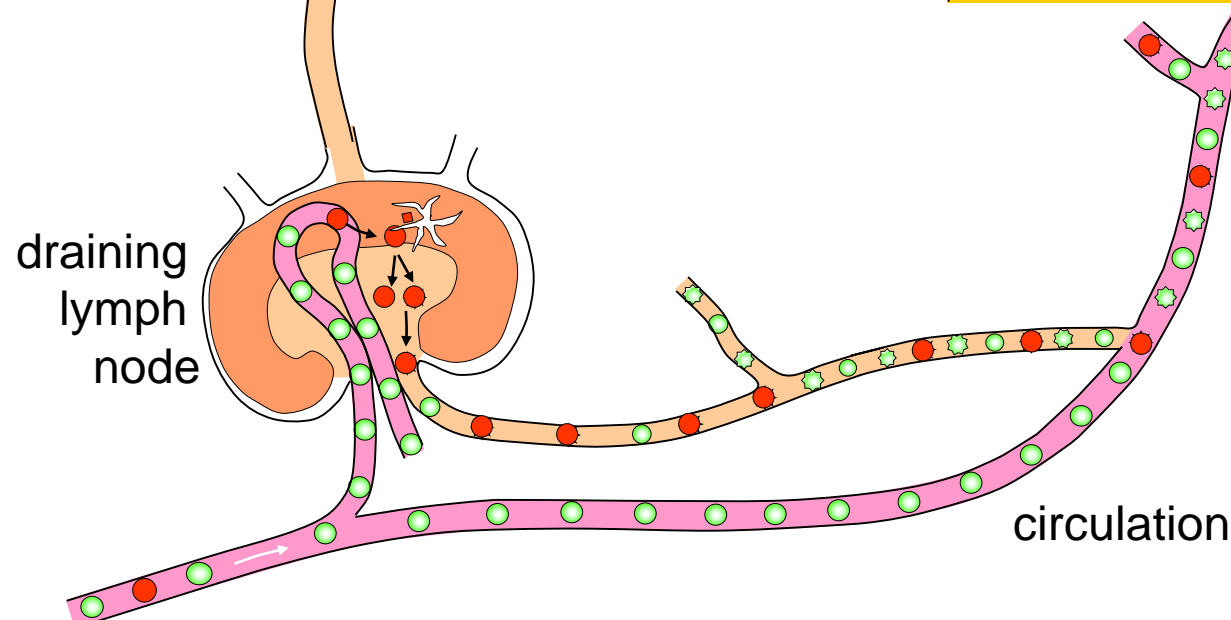
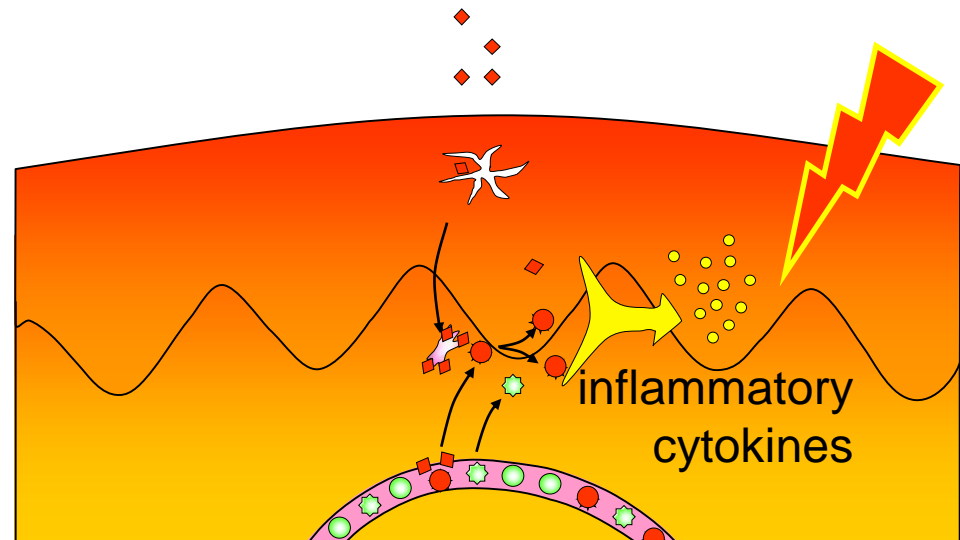
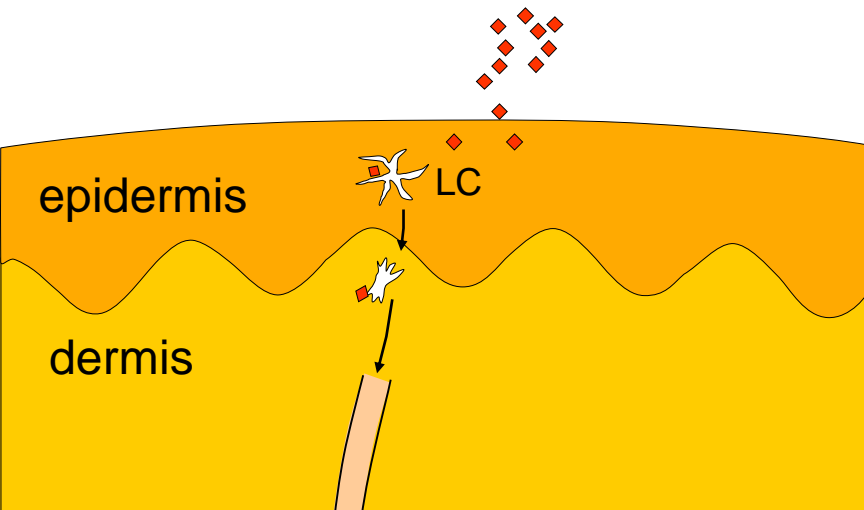
late reaction



eosinofiel

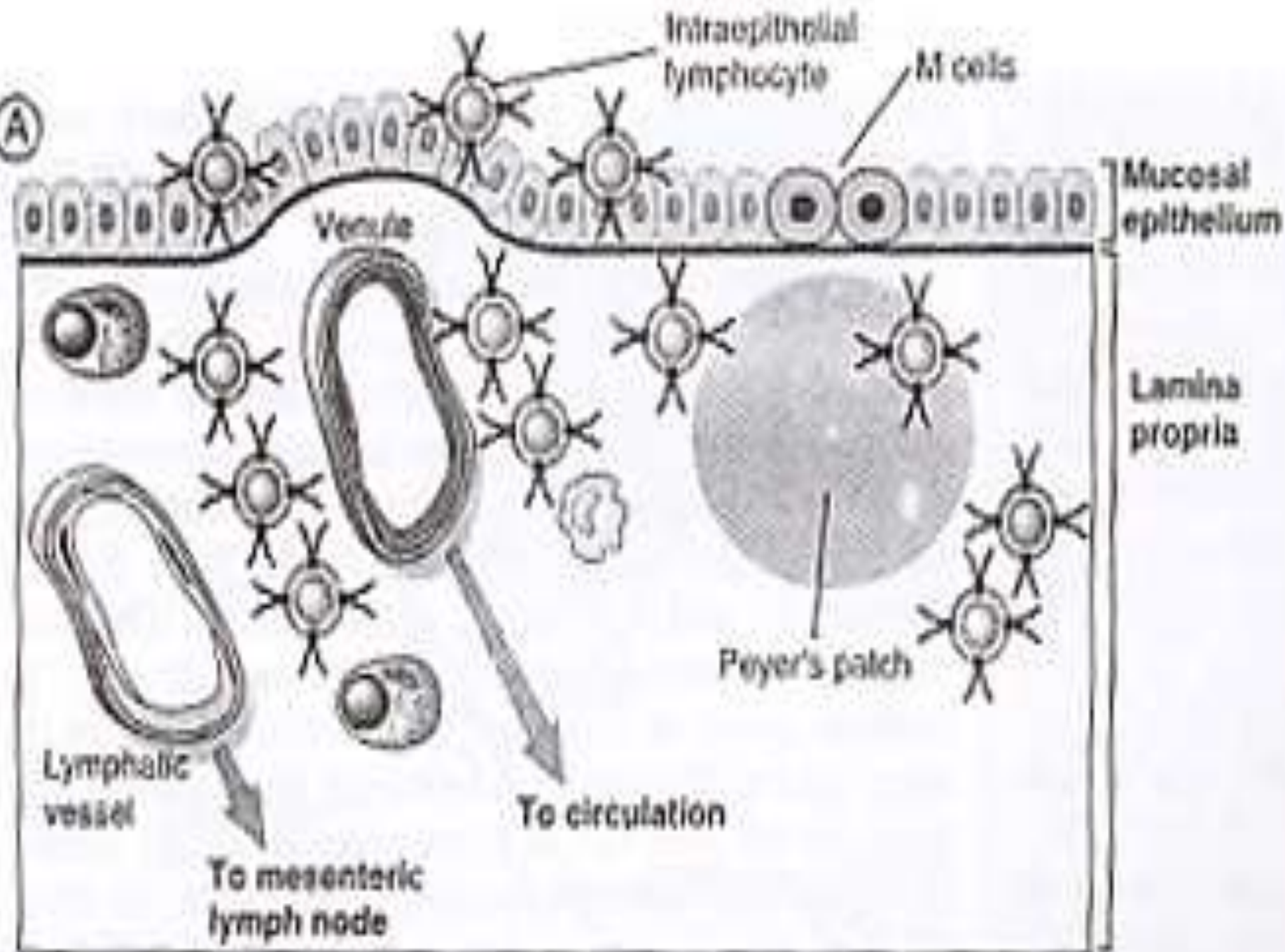
Sensitization with allergen

skin test e.c. or i.c.



- specific T cell
- other T cell

(A)



epithelial cell

intraepithelial
lymphocyte

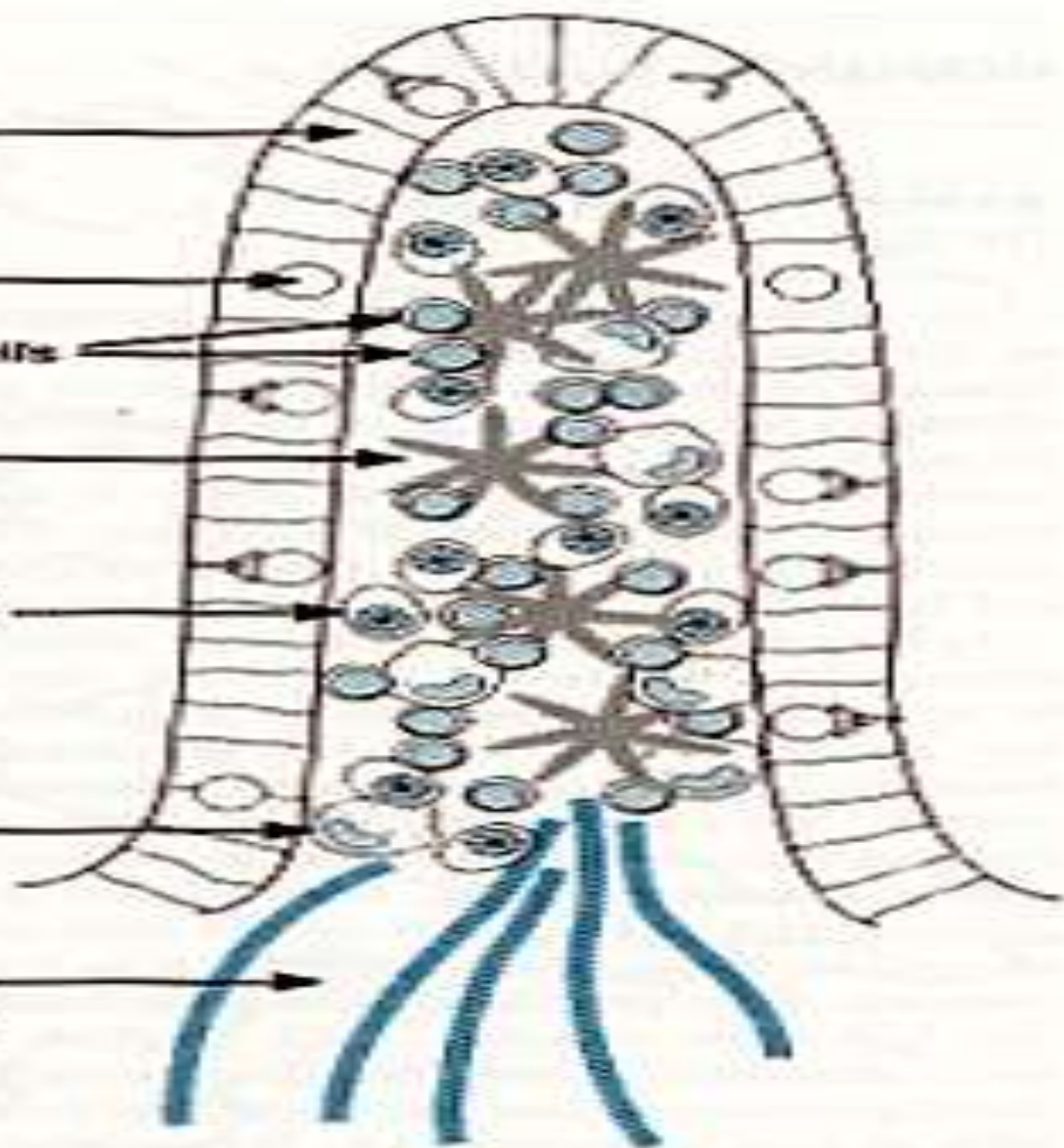
T cells and B cells

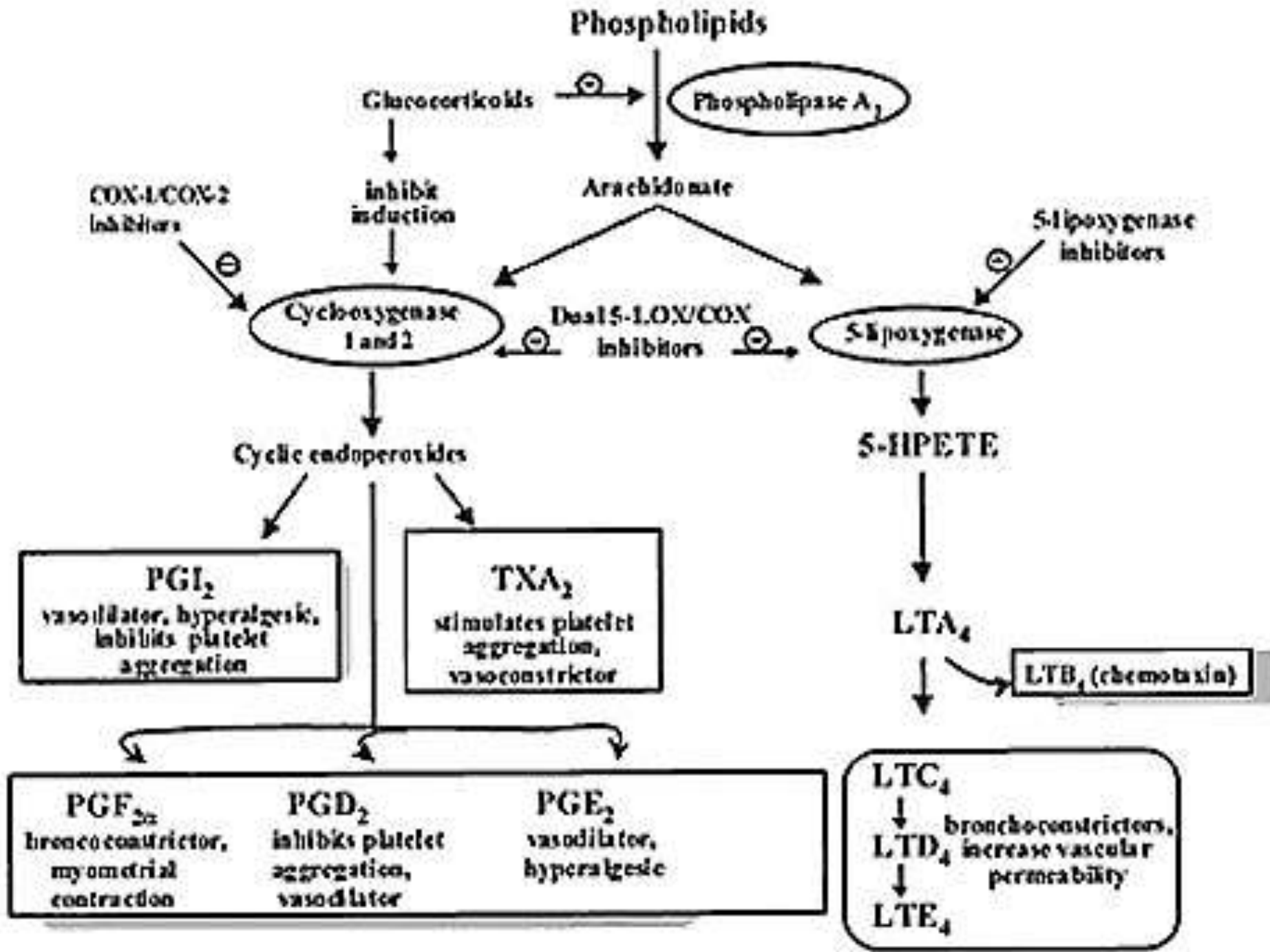
dendritic cell

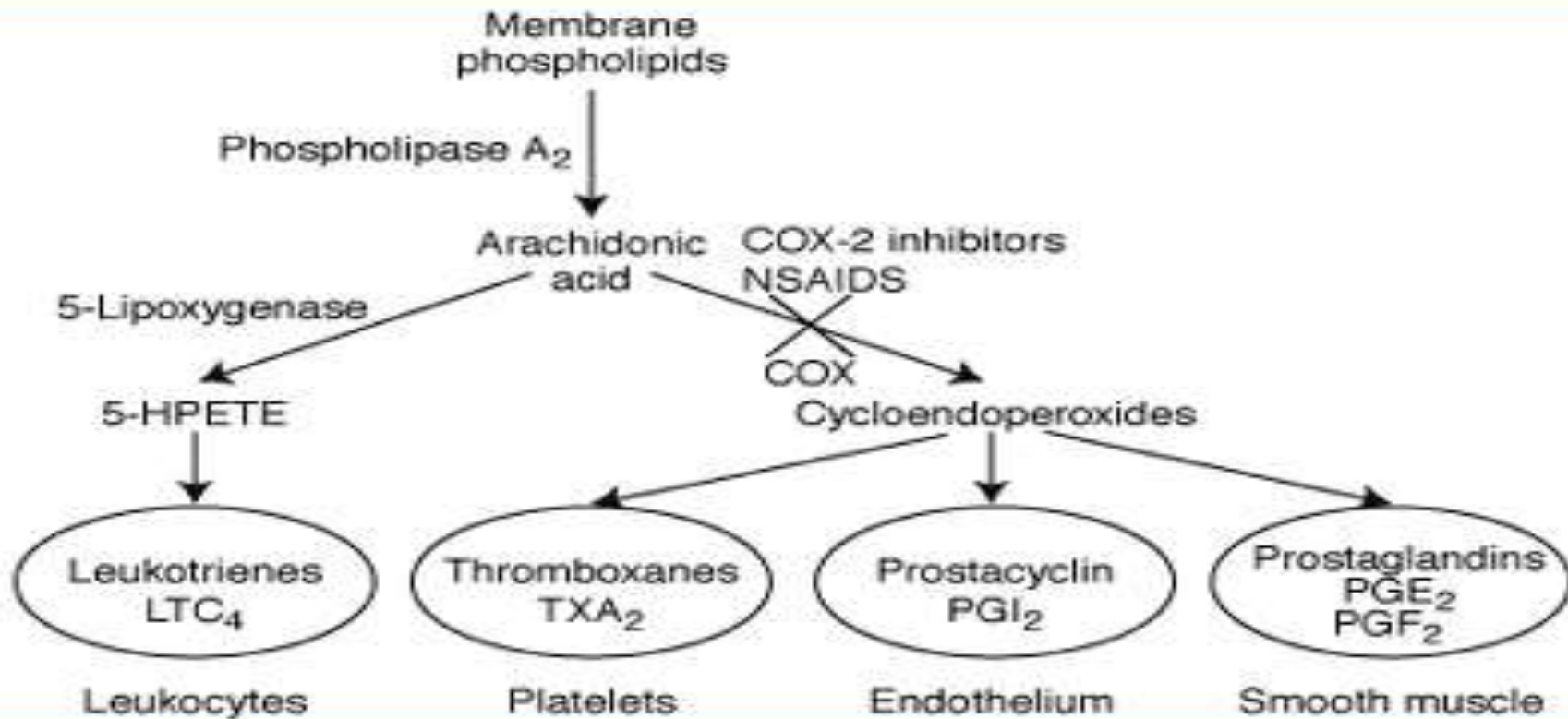
IgA plasma cell

macrophage

blood vessels
and lymphatics







Source: Pharmacotherapy © 2003 Pharmacotherapy Publications

Figure 1. (click image to zoom) Biosynthesis of arachidonic acid and the cyclooxygenase (COX) pathway. HPETE = hydroperoxyeicosatetraenoic acid; NSAIDs = nonsteroidal anti-inflammatory drugs.

Step-wise diagnosis of allergy

