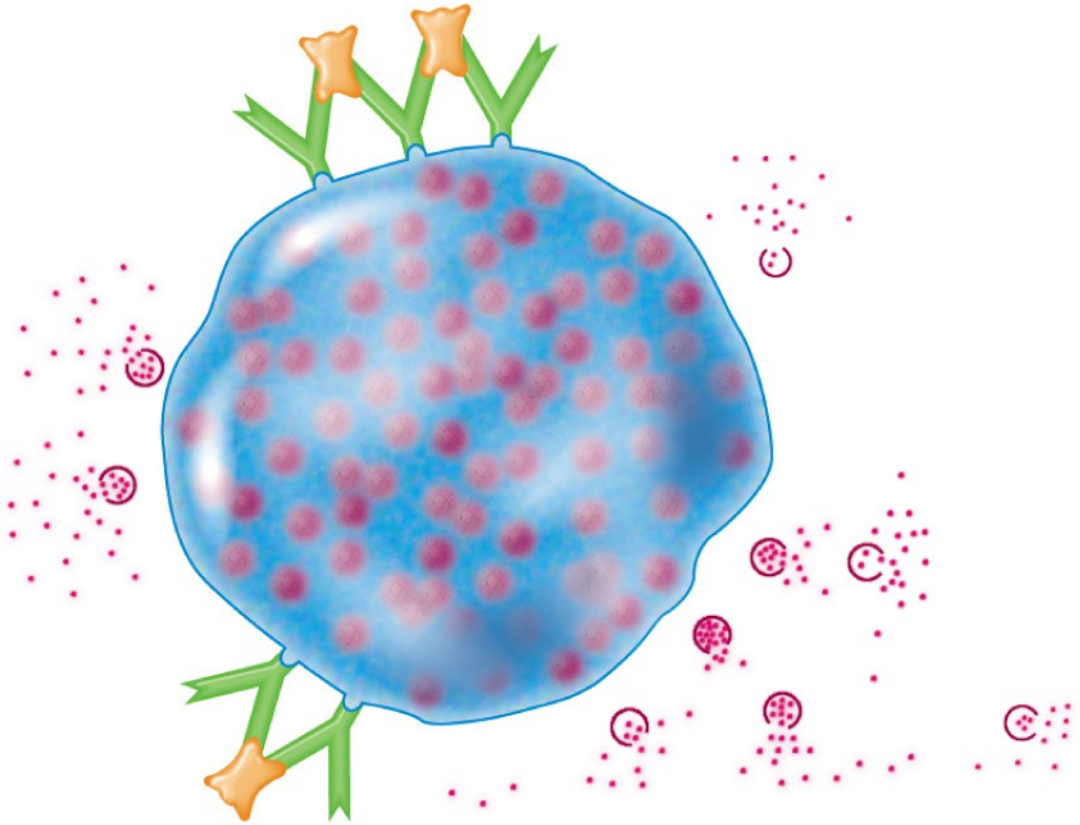
C21.8
(Featured Slides with Comments

Hypersensitivity



Four Different Types of Hypersensitivity

- Hypersensitivity reactions are exaggerated or inappropriate immunologic responses occurring in response to an antigen or allergen.

- Type I, II and III hypersensitivity reactions are known as immediate hypersensitivity reactions because they occur within 24 hours of exposure to the antigen or allergen. /// These are associated with antibodies

- *Type IV hypersensitivity is a T cell response and is delayed*

Four Different Types of Hypersensitivity

Four kinds of hypersensitivity based on the type of immunity (antibodies or T cells) and response to antigen

Type I acute (immediate) hypersensitivity /// very rapid response

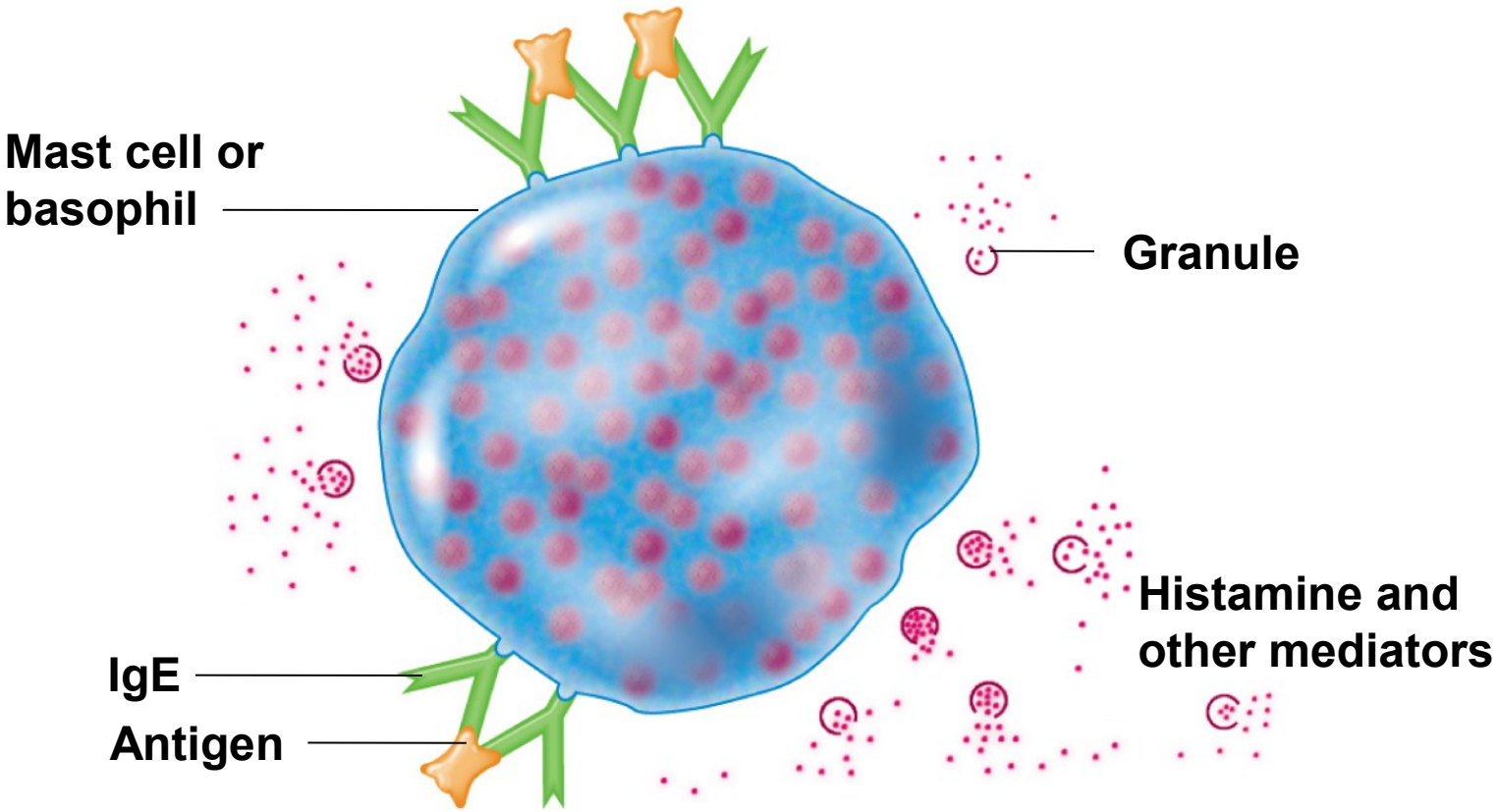
Type II - sub-acute /// slower onset (1 – 3 hours after exposure /// last longer – 10 to 15 hrs)

Type III - sub-acute /// slower onset (1 – 3 hours after exposure /// last longer – 10 to 15 hrs)

Type IV - delayed /// Cell mediated response

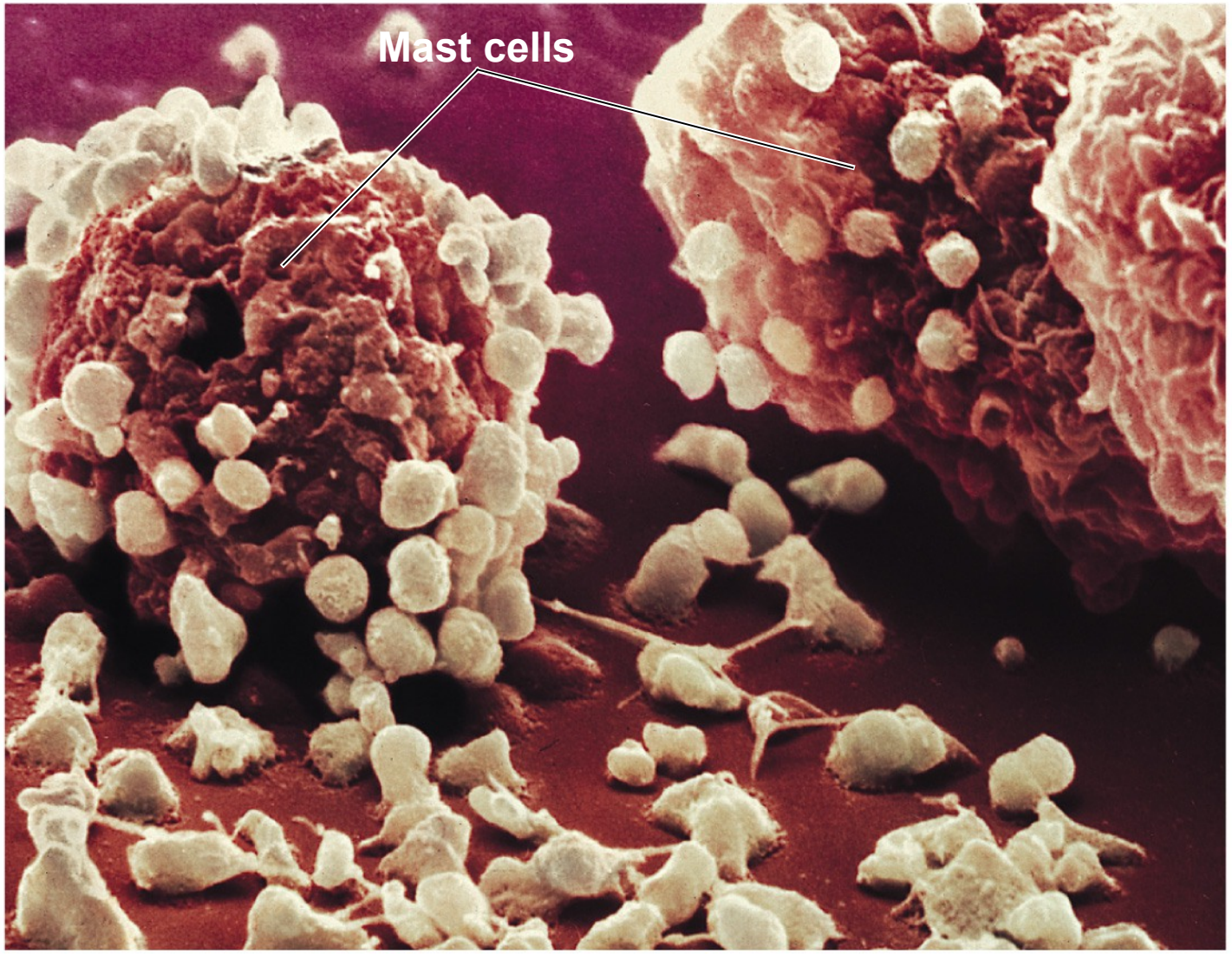
Note: Types I, II, and III are antibody mediated responses

The Mechanism of Anaphylaxis



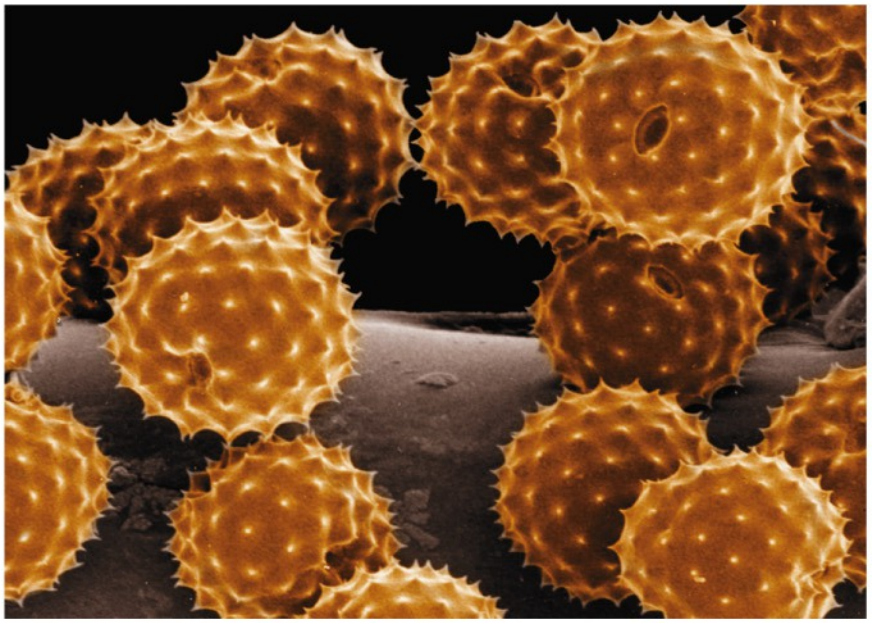
(a) IgE antibodies, produced in response to an antigen, coat mast cells and basophils. When an antigen bridges the gap between two adjacent antibody molecules of the same specificity, the cell undergoes degranulation and releases histamine and other mediators.

The mechanism of anaphylaxis.



A degranulated mast cell that has reacted with an antigen and released granules of histamine and other reactive mediators

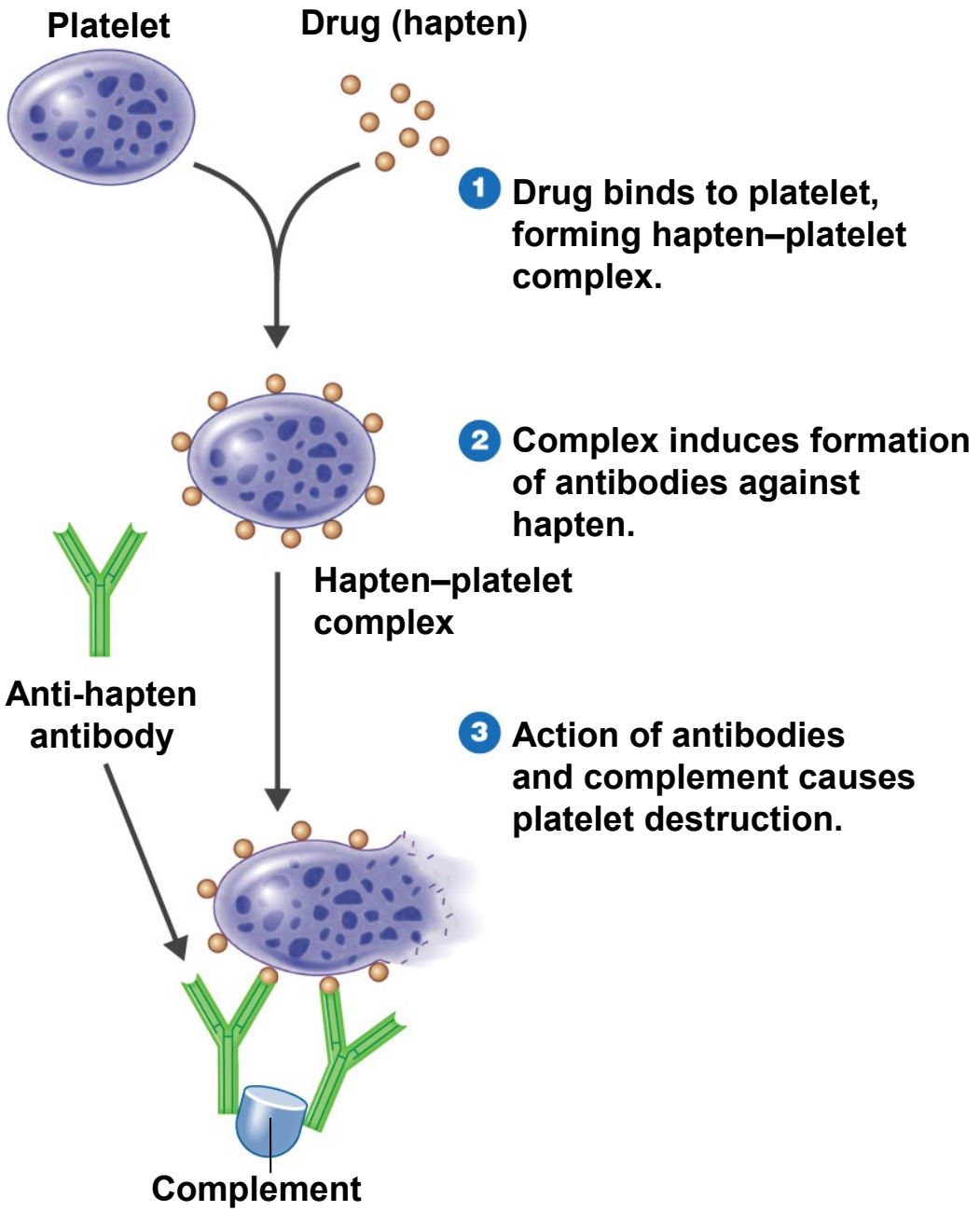
Localized Anaphylaxis



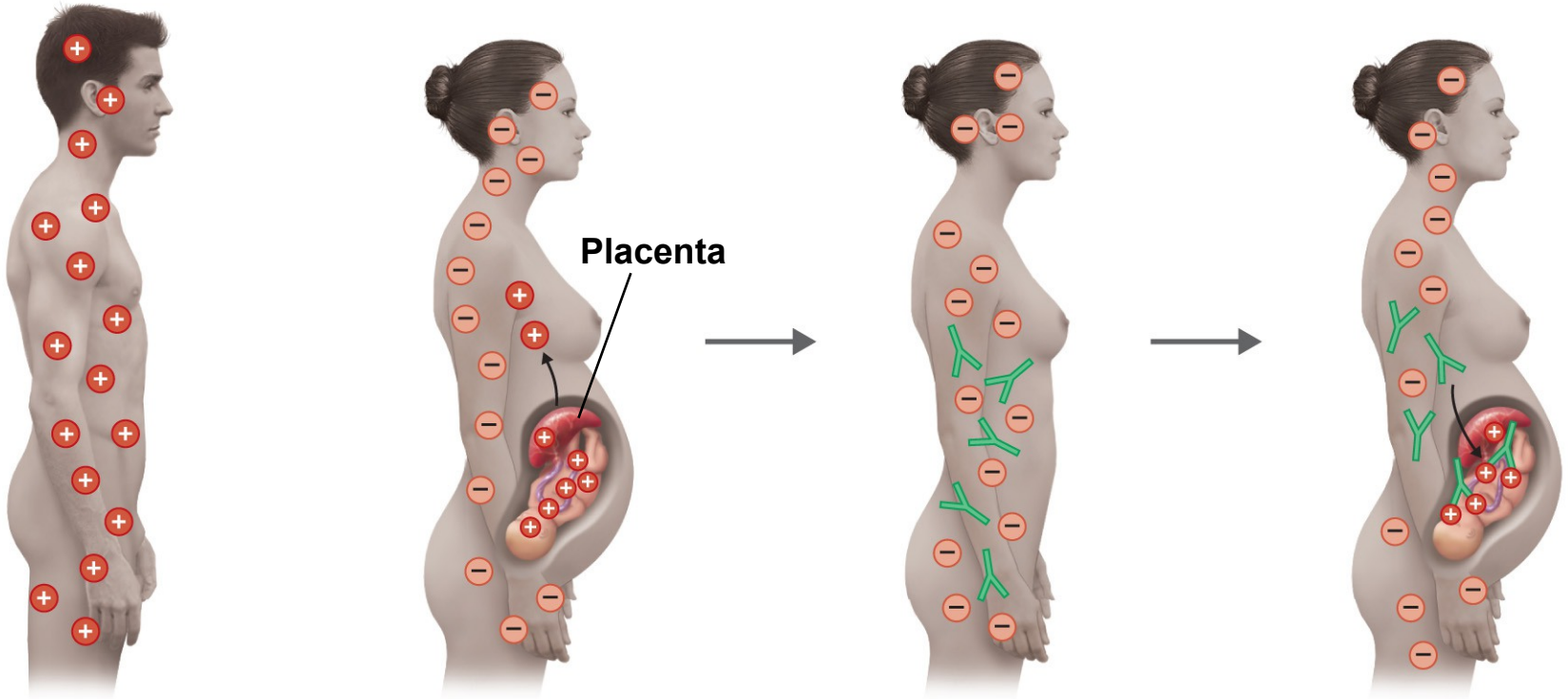
(a) A micrograph of pollen grains

(b) A micrograph of a house mite on fabric

Drug-induced thrombocytopenic purpura.

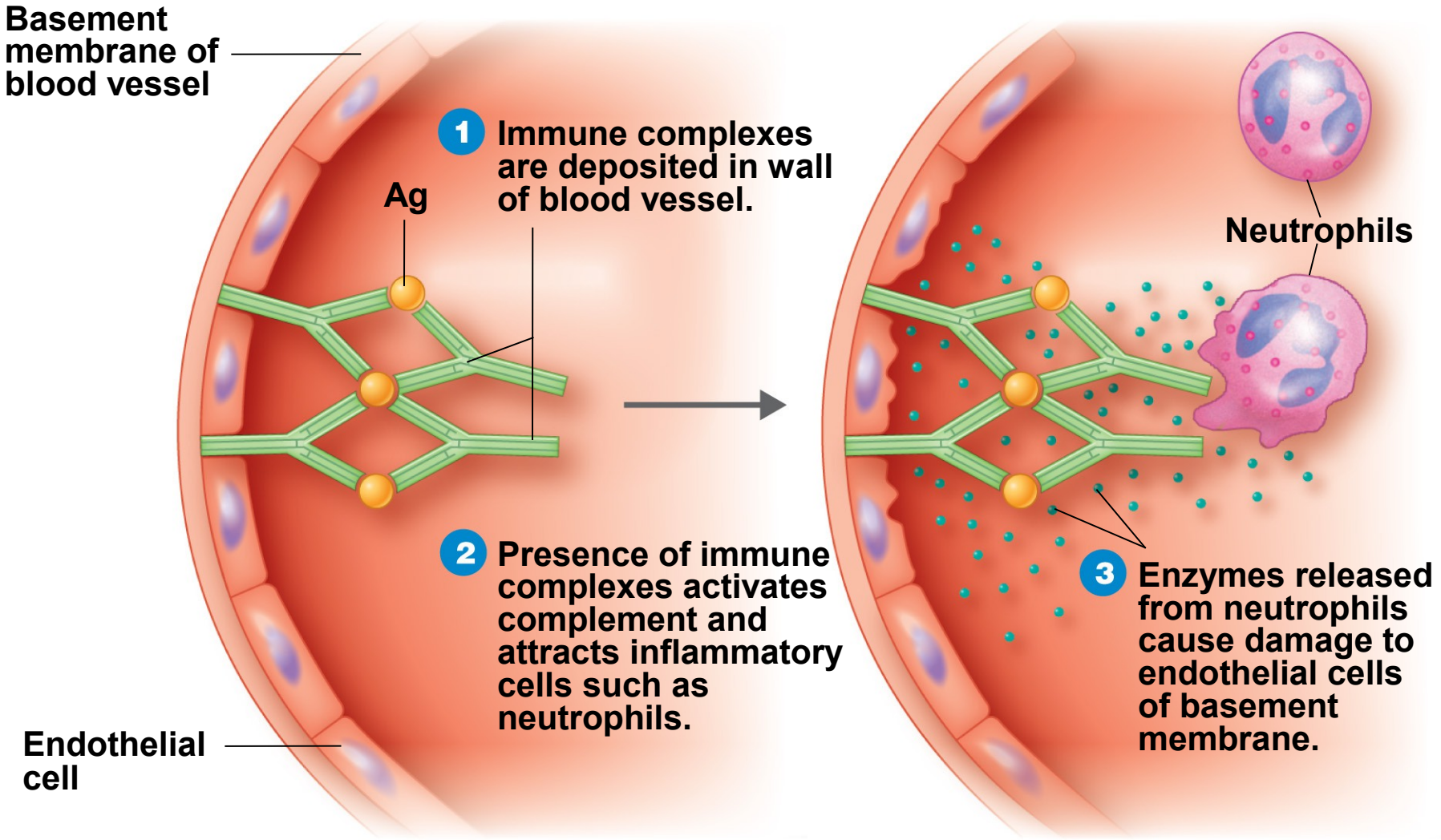


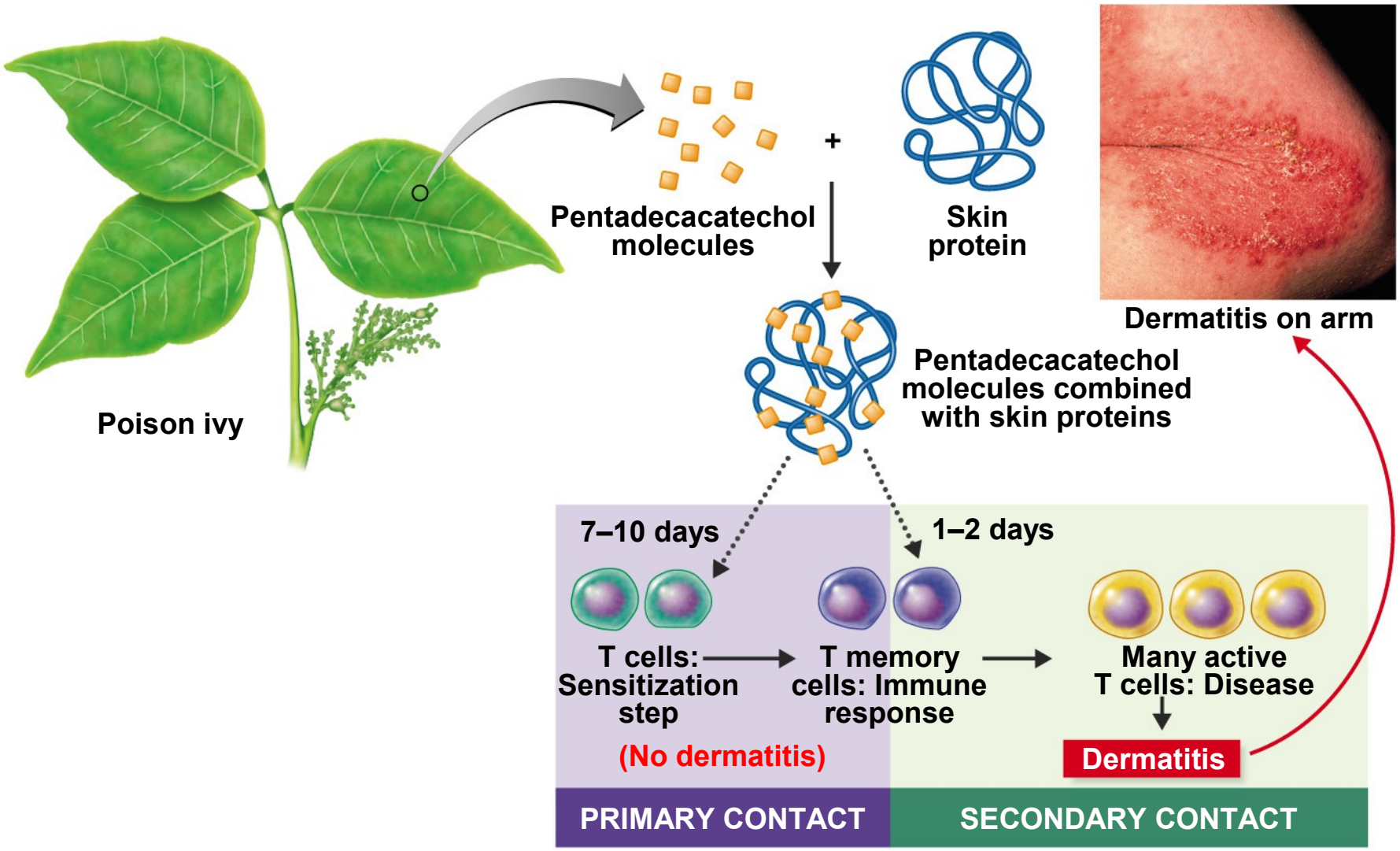
Hemolytic disease of the newborn.



1. Rh^+ father.
2. Rh^- mother carrying her first Rh^+ fetus. Rh antigens from the developing fetus can enter the mother's blood during delivery.
3. In response to the fetal Rh antigens, the mother will produce anti-Rh antibodies.
4. If the woman becomes pregnant with another Rh^+ fetus, her anti-Rh antibodies will cross the placenta and damage fetal red blood cells.

Immune complex–mediated hypersensitivity.





The development of an allergy (allergic contact dermatitis) to catechols from the poison ivy plant.

Allergic contact dermatitis.