



Convergent View of Allergy and the Immune System

John C. Cambier
Distinguished Professor and Chair
Department of Immunology and Microbiology
University of Colorado School of Medicine
and National Jewish Health

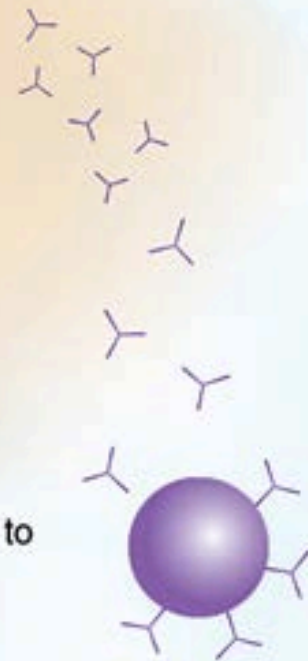
How pollen makes us sneeze and wheeze

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

2. Specific antibodies to the pollen are produced.

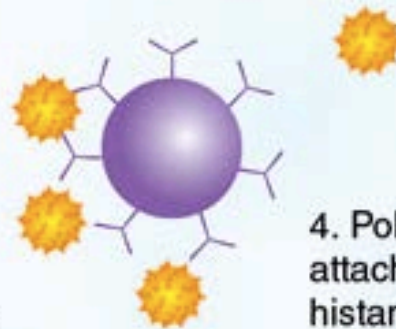


3. Antibodies attach to mast cells found in tissues.

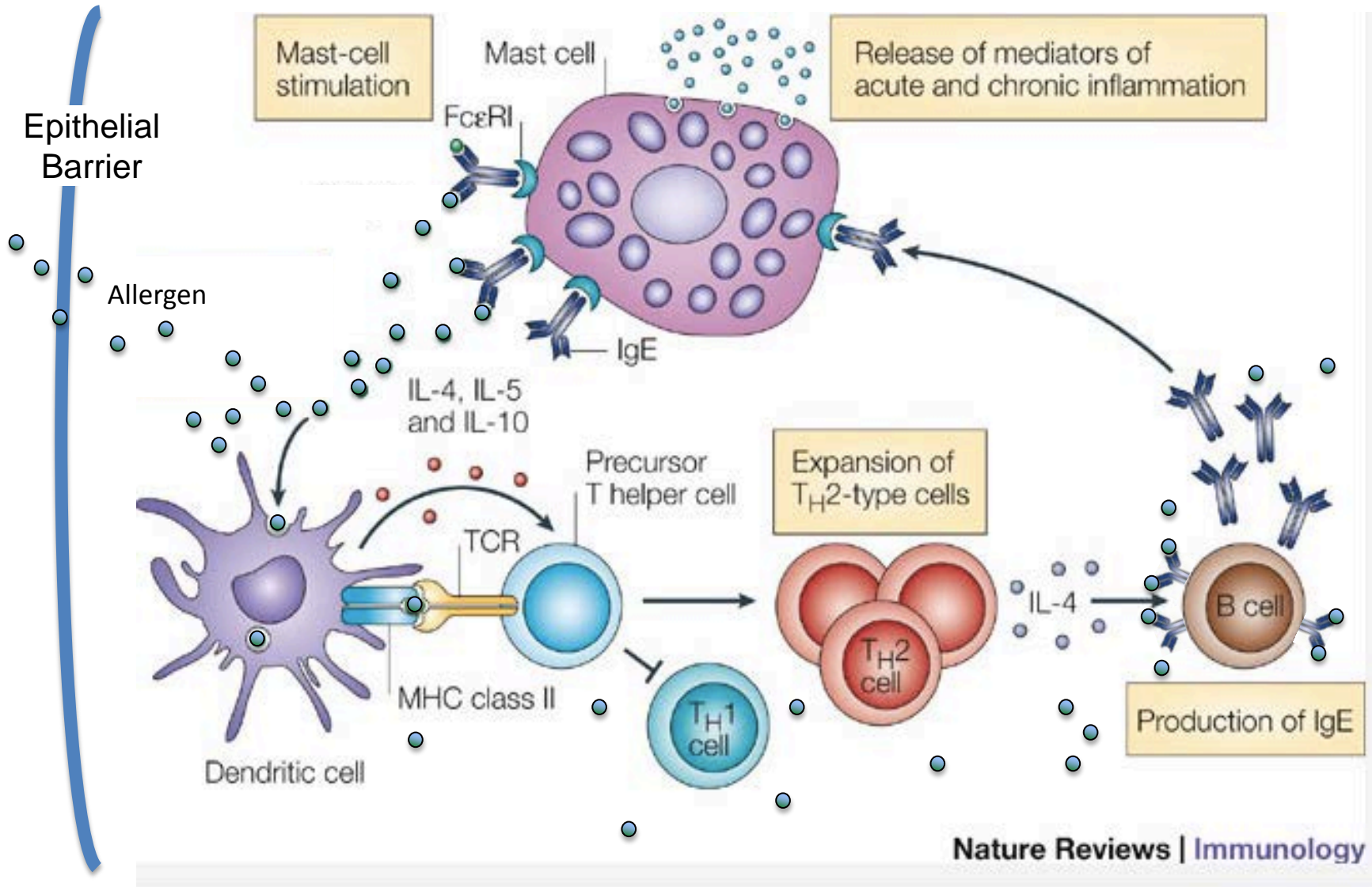


5. Allergic reaction is triggered resulting in runny eyes and nose, throat and nose itching, sneezing, nose and sinus congestion and asthma.

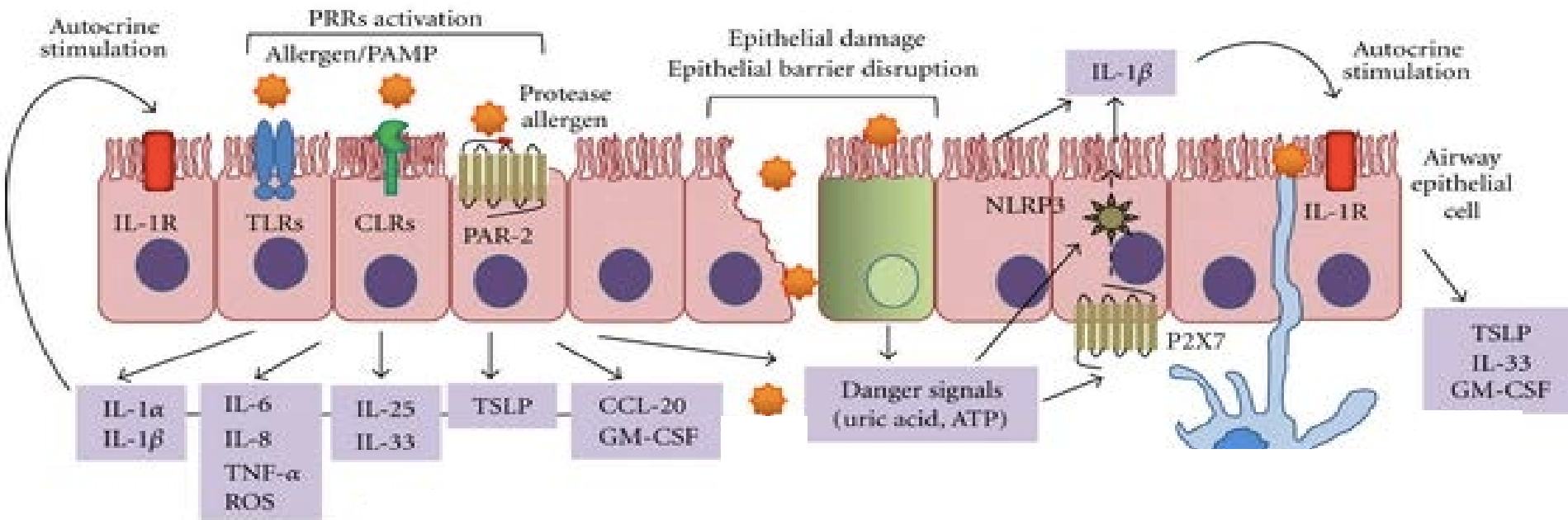
4. Pollen enters the body again, attaches to antibodies causing histamine and other chemicals to be released from mast cells.



The Immunological Orchestra at Work in Allergy



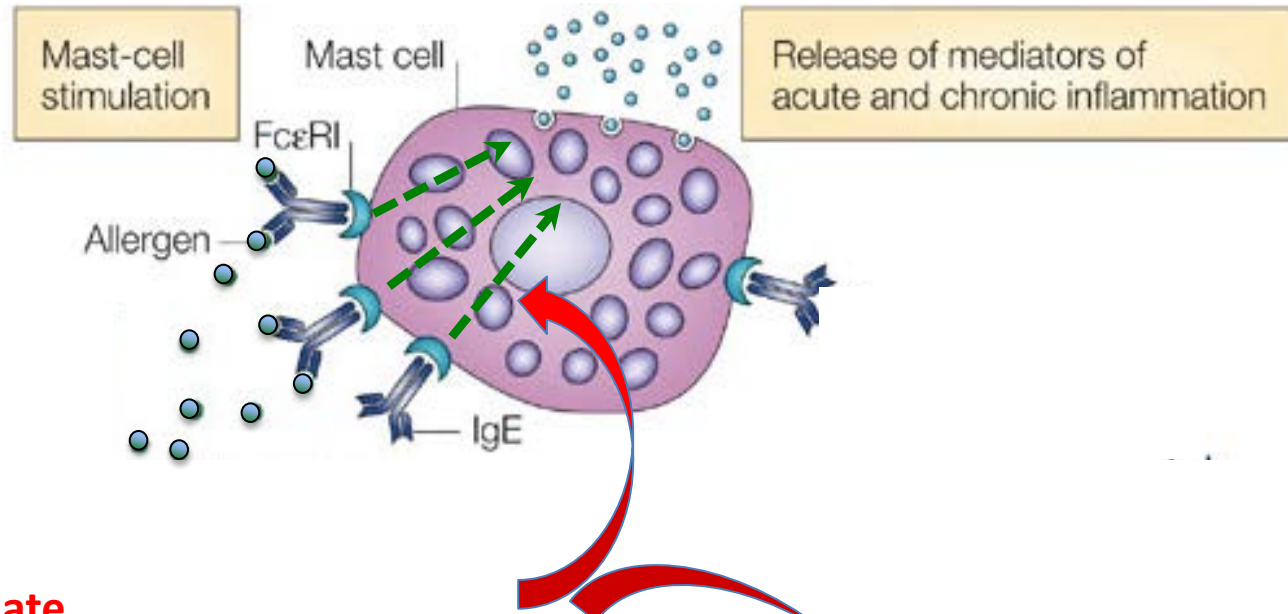
Environmental Factors Set the Stage for Allergic Responses



Genetic Predisposition for Development of Allergy?

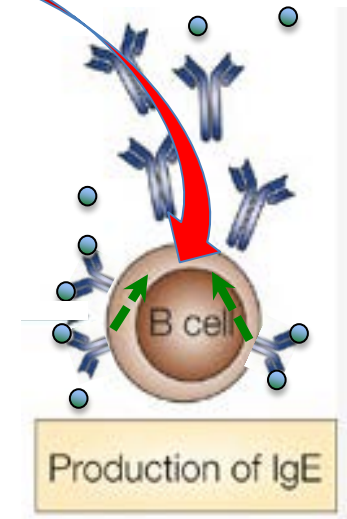
Risk Alleles: TSLP, IL-33, IL1RL1.....?????????

Genetic Predisposition... Can We Generalize from Autoimmunity?



Risk alleles that regulate antigen and FcεRI signaling

- Lyn**
- CSK**
- PTPN22**
- SHIP-1 (miR155)**
- PTEN (miR7)**
- SHP-1**
- BLK**
- BANK1**
- A20 (Tnfaip3)**



Immediate Imperatives for Research Focused on the Immunology of Asthma and Allergy

Understand the molecular bases of genetic and environmental contributions to disease

Intervene!

Thank You!!