

## Review 12

### ALLERGIES

- **first exposure: IgE production; binds through trunk to mast cells (part of epithelial lining) or basophils (blood cells)**
- **second exposure: if allergen binds to IgE molecules on mast cells or basophils, then histamine released; histamine causes increased blood flow to and leakiness of capillaries in affected area; contraction of smooth muscle in bronchioles of lungs; itchy effect on nerves**
- **result is "hay fever," hives, diarrhea, etc. depending on where mast cells are**
- **if histamine released into blood, then may get dilation of blood vessels, constriction of bronchioles--anaphylactic shock**

#### Treatment:

- ✓ **antihistamines and antileukotrienes (histamine and leukotriene blockers)**
- ✓ **desensitization**

### AIDS

- **HIV is a retrovirus**  
**RNA is information-carrying molecule**
  - ➔ **Infection**
  - ➔ **reverse transcription to DNA (reverse transcriptase)**
  - ➔ **insertion of DNA into host genome**
  - ➔ **transcription of DNA and production of viral proteins**
  - ➔ **assembly of viral particles**
- **HIV is transmitted through body fluids (blood, semen, etc.) and infects cells with the CD-4 receptor protein on surface (helper T-cells, brain cells, cells lining rectum, etc.)**
- **infection results in ① production of more HIV and ② ultimately death of the infected cell**
- **as helper T-cell population reduced, get reductions in both humoral and cell-mediated immune responses**
- **allows for opportunistic infections which are rare in general pop.**
- **individual usually succumbs to opportunistic infection or heart failure**