

# INFLAMMATORY RESPONSE

**Inflammation:** Mediated by histamine, which is released by mast cells in mucous membranes, and basophils and eosinophils in the bloodstream.

- Histamine causes capillaries to become “leaky”.
  - RED—more blood
  - HOT—blood is slightly warmer than overall body temp
  - SWOLLEN—more fluid in the damaged/infected area (also helps immobilize area)
  - PAINFUL—pressure on nerve endings
- Leaky capillaries bring more white blood cells to the area to fight the infection.
- Overdone, inflammation damages tissues and, if systemic, the whole body. This is akin to damage to a city that is in the midst of a battle.
  - Acute inflammation is usually necessary and beneficial
    - mobilizes WBCs to fight and destroy pathogens
    - alerts tissues nearby an infection to be “on guard”—they “close the borders” of their cells and make invasion more difficult.
  - Long-term inflammation is associated with many modern diseases
    - Chronic inflammation within blood vessels is very damaging and may lead to atherosclerosis/heart disease.
    - Joint pain
    - allergies (depending on the allergy, may only be acute) to pollen, etc., or food--gluten in wheat is the most common cause of chronic inflammation in the intestines.