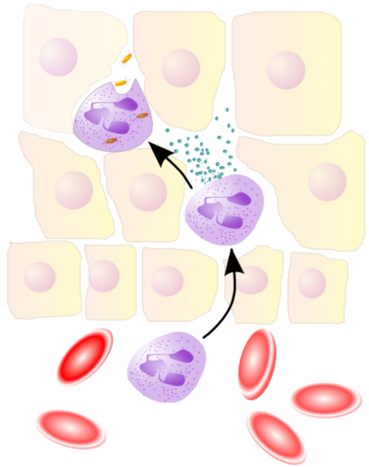
Inflammation: the Cascade and the Mediators



Neutrophils migrate from blood vessels to the inflamed tissue via chemotaxis, where they remove pathogens through phagocytosis and degranulation

Inflammation is the complex biological response to harmful stimuli, such as pathogens, damaged cells, or irritants. It is a protective attempt by the organism to remove the injurious stimuli as well as initiate the healing process for the tissue. It not a synonym for infection. Even in cases where inflammation is caused by infection, the two are not synonymous: infection is caused by an exogenous pathogen, while inflammation is the response of the organism to the pathogen.

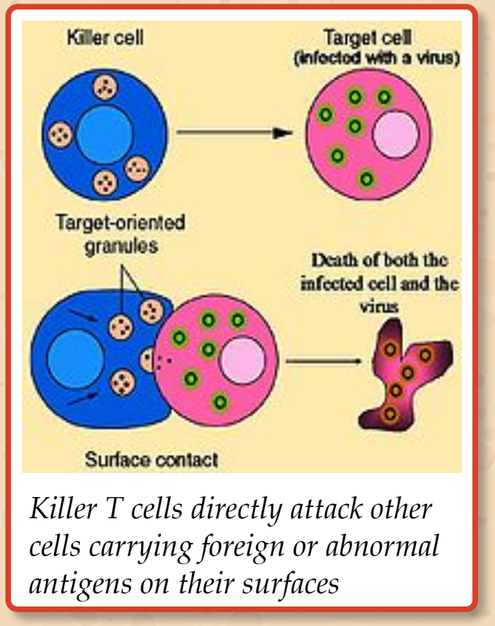
Adapted from Wikipedia

Traditional signs of inflammation:

Redness
Pain
Swelling
Heat
Loss of function

SOME IMPORTANT MEDIATORS:
SAMPLE PHARMACEUTICAL INTERVENTIONS

NF-kB: ***Aspirin, NSAIDs***
TNF-a: ***Remicade***
Heat shock protein: ***Geldanamycin***
Adhesion molecules: ***Antegren***
Chemokines: ***MCP-1***
Prostaglandins: ***Aspirin, NSAIDs***
Leukotrienes: ***Singulair***
Kinin system: ***HOE 140***
Cyclooxygenase (COX): ***NSAIDs, Acetaminophen***
Neurohormones: ***Cortisone, opioids***
Histamine: ***Xolair***
Homocysteine: ***Fibrates***
Autoantibodies: ***Rituximab***
Resistin: ***Resistin-binding peptide***



Killer T cells directly attack other cells carrying foreign or abnormal antigens on their surfaces

Home: ***Oscillatorium.com***
Newest version this map
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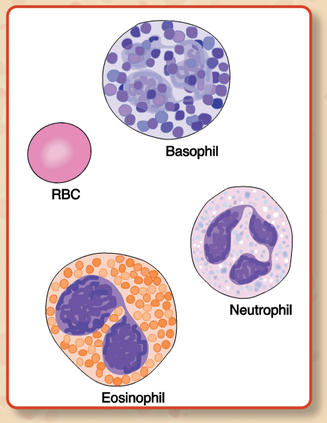
Damaging stimuli
- Trauma
- Exogenous agents
- Exogenous pathogens
- Endogenous mediators

Tissue responses
- Isolate damaged area
- Call for debris removal
- Call for pathogen removal
- Call for nutrients for repair
- Organize repair process
- Completion of repair

Therapies directed to a single inflammatory mediator may miss the correct target or targets. In addition, they do not support the resolution process with nutrient substrate.



Links
- NO-ONOO Cycle
- Stages of Inflammation
- Biology Pages Overview
- Journal of Inflammation
- Mediators of Inflammation
- Mediators of Inflammation Archive
- Inflammatory Response, Infection