

## Cardinal Signs of Inflammation



PLAY PICMONIC

### Redness (Rubor)

#### Red-cardinal

Rubor is redness. It is mediated by prostaglandins, histamine, bradykinin, and nitric oxide. It is a manifestation of relaxation of the arteriolar smooth muscle.

### Warmth (Calor)

#### Warm-fire

Calor is warmth. It results from vasodilation due to vasoactive mediators, including prostaglandins, bradykinin, histamine, and nitric oxide.

### Swelling (Tumor)

#### Tumor-guy

Tumor is swelling that results from fluid accumulation in the interstitium. This is caused by increased vascular permeability. Mediators from the endothelium and immune cells that contribute to this process include histamine, serotonin, and leukotrienes.

### Pain (Dolor)

#### Pain-bolts

Dolor is pain that results from the stimulation of free nerve endings. PGE<sub>2</sub>, bradykinin, and histamine play a role in this process. Additionally, prolonged stimulation of free nerve endings can cause sensitization of ion channels to occur.

### Loss of Function (Functio laesa)

#### Loss of Function

Functio laesa is the loss of function of an organ that results from a combination of other cardinal signs of inflammation.