

Inflammation - The body's natural response to injury

Characteristics:

Dilation (increase in diameter) & **fenestration** (increase in permeability) of the capillaries

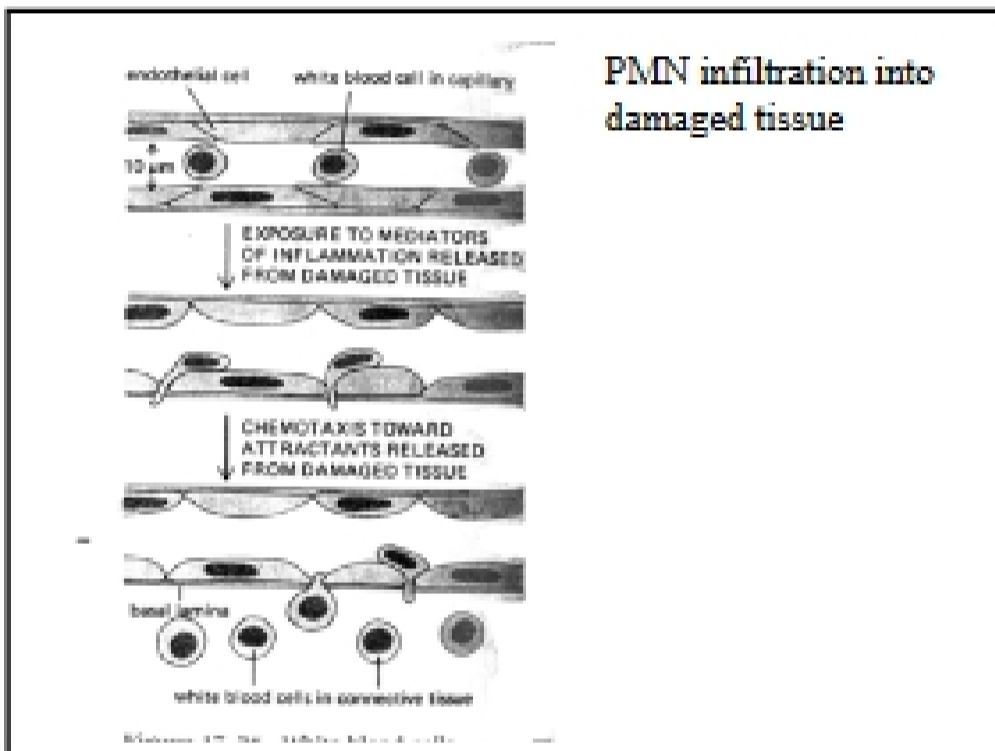
Edema (swelling, redness)

Local rise in temperature

Pain, sensitivity to pain

Influx of leukocytes, esp. Polymorphonuclear leukocytes (PMNs), and macrophages

Increased (~tenfold) drainage into lymphatic system



BLOOD CELLS		
Type	Function	Cells/ml blood
Red Blood Cells		
Erythrocytes	transport O ₂ , CO ₂	5 X 10 ¹²
White Blood Cells (leukocytes)		
Granulocytes		
PMNs/neutrophils	phagocytose bacteria	5 X 10 ⁹
Eosinophils	allergic response	2 X 10 ⁸
Basophils	release histamine/serotonin	4 X 10 ⁷
Monocytes	become macrophages	4 X 10 ⁸
Lymphocytes		
B-cells	make antibodies	2 X 10 ⁹
T-cells	cell-mediated immunity	1 X 10 ⁹
Platelets	blood clotting	3 X 10 ¹¹

Effectors of Inflammation

Interleukins - signaling peptides

IL-1: released by macrophages & other cells after injury

Activates phospholipase → prostaglandin synthesis

Synthesis of IL-8 & ELAM

IL-8: chemotactic factor - attracts PMNs, PMN adhesion

Prostaglandins: from arachidonic acid -vasodilation

Sensitizes nerve endings to pain

Leukotrienes: chemotactic factors from arachidonic acid

Histamines: → permeability of capillary endothelial cells

