**Inflammation** –
a general RESPONSE by the body’s immune system to an injury, allergy, surgery or infection that leads to observable signs such as redness, heat, swelling, pain, and possible loss of function of organs.

This comes from an immediate but - SHORT TERM – NONSPECIFIC -reaction of vasodilation (heat and redness) to bring neutrophils, basophils, and macrophages and clotting cells to the area to control bleeding and fight infection at the injured site. Histamine, kinins, postaglandins, and cytokins are released to activate and grow neutrophils, lymphocytes and macrophages to fight infection by killing any foreign cells and phagocytizing any damaged cells.

It also releases a number of proteins that stimulate the immune system to begin its antigen-antibody response (the immune response)- These proteins also makes the capillaries more “permeable at the site – which causes the edema, heat, redness and pain.

**Localized** - can occur anywhere within the body
Example: Scratch your arm – inflamed – red, swollen warm – but not necessarily infected!

**Systemic** – can become more involved and be observable throughout the body, organs become involved and may lose function or be permanently damaged

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**Infection** –
A DISEASE CAUSED by MICROORGANISMS (bacteria, virus, fungus, protozoan, rickettsia)

Either release toxins or invade body tissues – this disrupts normal functioning at the site and leads to responses by the body to help combat the microorganism.

The Inflammatory response (non-specific)

And the Immune response (specific) (immune system B and T cells) (You will study this under the immunity module)

**Localized** – can occur anywhere within the body as a specific site –
Example: Scratch your arm and it gets infected with Microorganisms – drainage with pus

**Systemic** – infection spreads to multiple organs and systems –
Example Tuberculosis – Lungs, kidneys, abdominal organs

Sepsis – Septicemia - microorganisms is in the blood stream and spreading throughout the body
Septic Shock – systemic infection causing shut-down of body organs