Inflammation

Inflammation (Latin, *inflammatio*) meaning *"I set alight, I ignite"*.

Inflammation is a complex response that indicates the surrounding tissue that something is going wrong.

Can be a response to damage or an Immune Process.

An increase of blood flows to the particular area is observed.

A foreign object, pathogen, irritant, or damage may be seen.

Is both a protective measure as well as a factor that begins the healing process.

Without Inflammation, it would be virtually impossible for a wound to heal.

But chronic inflammation can lead to serious consequences as well.

Therefore the body will typically closely monitor and control inflammation – to start it on time and to stop the chronic occurrence as well.

Inflammation is not a synonym for infection. Infection describes the interaction between the action of microbial invasion and the reaction of the body's inflammatory defensive response

The purpose of inflammation is to - eliminate the initial cause of cell injury,- clear out necrotic cells and tissues and to initiate tissue repair.

In contrast, chronic inflammation may lead to a host of diseases, such as hay fever, periodontitis, atherosclerosis, rheumatoid arthritis, and even cancer (e.g., gallbladder carcinoma).

Inflammation is a protective response that involves

1- immune cells,

2 -blood vessels, and

3- molecular mediators.

Causes of inflammation:

1-Physical:

- Burns
- Frostbite
- Physical injury,
- Foreign bodies, like splinters,
- Trauma
- Ionizing radiation

2-Biological:

- Infection by pathogens
- Immune reactions due to hypersensitivity
- Stress

3-Chemical:

- Chemical irritants
- Toxins
- Alcohol

4-Psychological:

- Embarrassment
- Excitement

Inflammation can be classified as either ***acute*** **or** ***chronic***

a-*Acute inflammation* : is the initial response of the body to harmful stimuli and is achieved by the increased movement of plasma and leukocytes (especially granulocytes) from the blood into the injured tissues.

. Signs and symptoms are only present for a few days, but in some cases may persist for a few weeks.

Examples of diseases, conditions, and situations which can result in acute inflammation include: acute bronchitis, infected ingrown toenail, sore throat from a cold or flu, a scratch/cut on the skin, exercise

(especially intense training), acute appendicitis, acute dermatitis, acute tonsillitis, acute infective meningitis, acute sinusitis, or a blow.

b-, **Chronic inflammation -**When inflammation doesn't go away, it is known as chronic or systemic inflammation,

and it is no longer a pro-healing response this means long-term inflammation, which can last for several months and even years.

It can result from:
Failure to eliminate whatever was causing an acute inflammation
An autoimmune response **to a self antigen -** the immune system attacks healthy tissues, mistaking them for harmful pathogens.
A chronic irritant of low intensity that persists
Examples of diseases and conditions with chronic inflammation include: asthma, chronic peptic ulcer, tuberculosis, rheumatoid arthritis, chronic periodontitis, ulcerative colitis and chronic active hepatitis

Singes of inflammation:

1-Rubor (redness)

2-Calor (heat) ; Redness and heat are due to increased blood flow

3-Tumor (swelling) swelling is caused by accumulation of fluid;

4- Dolor (pain) –- pain is due to the release of chemicals such as(**bradykinin and histamine** that stimulate nerve endings.

5-Functio laesa (loss of function) - has multiple causes