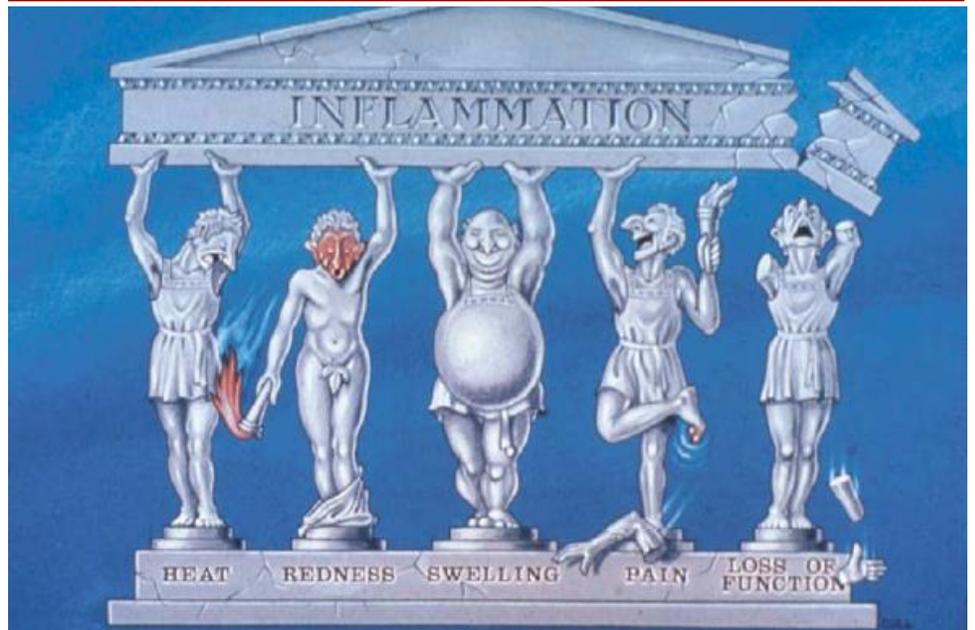


Remède Physique

Inflammation & Edema



Inflammation is the first process that occurs when we are injured or when a pathogen enters our bodies.

There are four principal signs and symptoms of inflammation: heat, redness, swelling (edema) and pain. If inflammation becomes chronic, it leads to loss of function.

Edema, or swelling, is an accumulation of excess fluid in the spaces around and between the cells. It can occur as a normal part of the inflammation process or it can result from a blockage in the circulatory system, as a result of liver dysfunction, dysbiosis or as an allergic response or even an autoimmune response.

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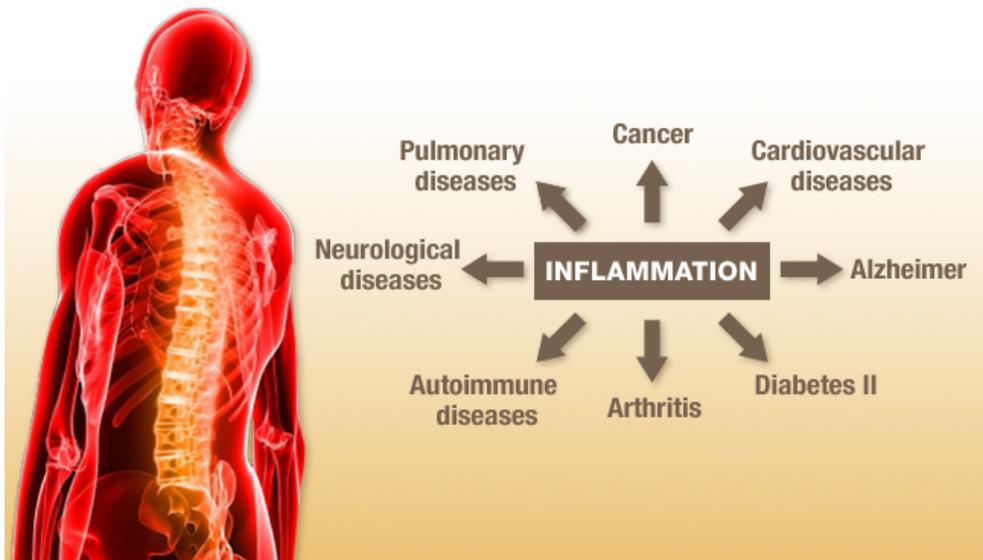
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Every condition ending in “-itis” is an inflammation: arthritis, appendicitis, bronchitis, etc

The cardiovascular, nervous and immune systems work together to create inflammation.

Inflammation is a normal response to injury and invasion, and it is evidence that the body is sending immune defenders to the area of injury and beginning the repair process.

In a healthy body, **Acute Inflammation** peaks and begins to recede in 6-8 hours with the entire acute stage lasting 24-48 hours.

Immediately after a trauma occurs, or a pathogen enters the body, inflammatory chemicals are released that cause pain, vasodilation (increased blood flow that results in heat and redness), and WBCs and plasma to flow

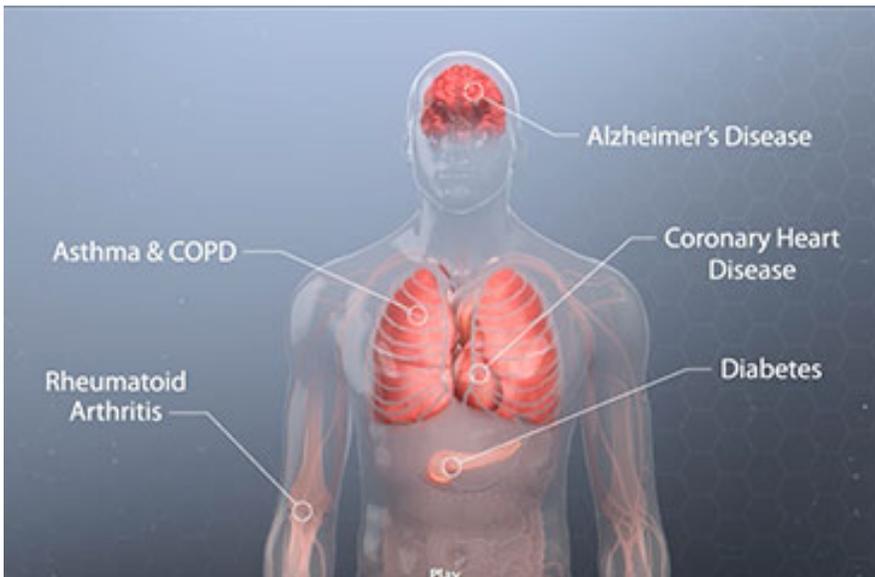
into the area causing swelling and scar tissue formation (fibrin traps any foreign particles that are present).

Then WBCs called macrophages (big eaters) begin to engulf and digest any injured cells or bacteria. The macrophages produce chemicals that further increase the inflammatory response.

Clotting chemicals like fibrinogen are activated by damaged blood vessels to stop any bleeding that is occurring.

Finally the immune system eliminates any pathogens and the repair process begins.

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Inflammation continued

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Chronic inflammatory conditions such as arthritis, asthma, chronic bronchitis, eczema, Alzheimer's, heart disease and diabetes are often referred to as *inflammatory diseases*.

Subacute inflammation lasts longer than 48 hours, and complications like infection or adhesions are more likely to develop. The continued presence of a foreign body (like a splinter) can be a cause. Or the person might have a weakened immune system and it just takes longer than usual for them to finish the repair process. The person might also be reinjuring the inflamed area; or injured tissue is simply continuing to leak fluid in the area. There might also be pathogens present, perpetuating the immune response. In this case there will be infection with pus that can be manually extruded or will gradually be cleared away during tissue repair.

Chronic Inflammation occurs when inflammation continues for more than a few weeks. The number of neutrophils decreases, and the number of WBCs increases. This makes the immune system work hard, and it cannot function at its peak efficiency. In addition, excessive amounts of collagen fibers tend to develop at the repair site, causing scars on the body surface or adhesions inside the body. (Adhesions are fibrous bands that hold parts together that are normally separated.)

Chronically inflamed tissue changes gradually from hot and swollen to cool and dense ... and it is more easily re-injured.

(continued)

Edema

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How do you know if you have edema?

There will be a decreased range of motion if the edema is near a joint.

There will be an observable increase in the diameter (2-3cm) of a limb, compared with the same limb on the other side.

Gently press an area for 10 seconds, if an observable, sustained indentation remains in the tissue then you have edema.

Your energy will be low, muscle strength will be decreased and you will feel puffy and stiff.

Edema is an accumulation of excess fluid (usually lymph and plasma) in the spaces around the cells of the body. Edema can be acute or chronic and it can occur anywhere in the body. Though the most common areas are the upper and lower extremities (hands, forearms, feet and ankles).

Edema occurs due to three primary mechanisms which can occur singly or in combination:

1. **Vasogenic edema** occurs when inflammation from injury, infection or ischemia (restriction of blood flow) causes blood vessels to become more permeable so that lymph and plasma leak through the capillary walls into the interstitial spaces or when the pressure inside the blood vessels increase for any reason (like liver congestion causing portal hypertension). Vasogenic edema also occurs when a person has a reduced level of protein in their blood which occurs from kidney or liver dysfunction, stress, malnutrition or burns.

2. **Secondary edema** occurs when plasma shifts into the intracellular space (moves into cells) like when there are imbalances between sodium

and water. This can happen due to liver or kidney dysfunction, surgery, trauma or cardiovascular disease.

3. **Lymphedema** occurs when normal lymph return is either reduced or blocked entirely from returning to the vascular circulation. This occurs distal to the blockage and is initially palpable, but gradually becomes visible too.

Lymphedema is caused by radiation therapy, surgical removal of one or more lymph nodes, fascial adhesions, tumors or enlarged organs that compress the lymph channels, congenital abnormalities, injury and infection.

Increased local pressure produced by edema can lead to decreased local nutrition and oxygen delivery that causes tissue fatigue, increased susceptibility to infection, weakness, pain, delayed healing, tissue damage and immobility. Immobility in turn leads to more edema.

Once lymphedema occurs, it remains as a life-long issue that requires consistent care and maintenance. With proper education and care, it can be kept under control.

Predisposing Factors:

- Chronic toxicity, especially heavy metals, industrial or environmental toxins
- Pharmaceutical drugs, including over the counter NSAIDs
- Recreational drug use
- Tobacco use
- Alcohol abuse
- History of past infection such as hepatitis, mononucleosis, chicken pox, etc which has not fully cleared
- Vaccinations
- Malnutrition
- Over-reliance on sugar and stimulants
- Over-reliance on artificial foods
- Protein deficiency
- Essential fatty acid deficiency or imbalance
- Dysbiosis, parasites, candida fungal overgrowth, mycotoxins
- Chronic emotional, psychological or physical stress



Clinical Considerations:

75-80% of the immune system is located in the intestines as Gut Associated Lymphatic Tissue.

Chronic digestive inflammation makes a person susceptible to all kinds of infection and especially to bacterial and fungal overgrowth in the intestines like *H. pylori* bacteria (that causes ulcers) and candida albicans (yeast). Digestive inflammation is also associated with cardiovascular disease and with triggering autoimmune disorders.

Recommendations:

- Implement a detoxification program
- Follow an anti-inflammatory diet
- Identify and eliminate all allergens from the diet
- Eliminate sugar, alcohol, and caffeine
- Eliminate grains, dairy and starchy carbohydrates
- Eliminate processed and artificial foods
- Eliminate NSAIDs and steroids
- Eliminate hydrogenated and partially hydrogenated oils
- Ensure sufficient intake of essential fatty acids
- Repair digestive function
- Eliminate parasites and dysbiosis
- Balance minerals
- Drink adequate water: body weight divided by 2 = the number of ounces of water you need to stay optimally hydrated
- Get sufficient rest
- Get regular moderate exercise
- Receive regular bodywork, like manual lymph drainage or complete decongestive physiotherapy



To Order Call Biotics MidAtlantic
800-524-5183

Biotics Research: Three ways to heal inflammation:

- 1) Reduce inflammation and quickly remove and convert broken cell contents for reuse
- 2) Lessen free radical damaging activity
- 3) Make building materials readily available

1) Proteolytic enzymes, (protein digesting enzymes) were used extensively and effectively in the 60's to digest away spilled protein for reuse. They have been documented in hundreds of medical literature reports to have effectiveness for: bruising, sprains, strains, fractures, back pain, dental surgery, digestive inflammation, arthritis and other inflammatory conditions. In the 70s painkillers like NSAIDs proved more lucrative to the caregiver (not the patient) and the use of proteolytic enzymes went out of fashion. NSAIDs inhibit various aspects of the healing process, they don't really address or resolve the issues causing inflammation. On the other hand, proteolytic enzymes are cost effective as well as healing effective, immediate and long term.

The body produces its own proteolytic enzymes. Unfortunately, if inflammation is severe enough, these naturally occurring enzymes are either inactivated or cannot get to their sites of action. **Biotics Intenzyme Forte** (4-6 tablets taken on an empty stomach) contains many types of proteolytic enzymes as well as trypsin and alpha Chymotrypsin. These enzymes are proven to get through the gut lining into the blood to the site of injury and greatly lessen inflammation. According to studies, athletes who expect heavy injuries (such as boxers, soccer players, etc) take it before and after competition and get, on the average, only half the normal swelling and soreness.

2) Where free radical activity is unleashed by WBCs against a possible invader, **Biotics (SOD) Superoxide Dismutase Granules** are very effective. Refined foods no longer contain sufficient natural antioxidants such as Vitamin C, Vitamin E, selenium, and zinc for immune system activation. **Biotics BioProtect** contains these and many other antioxidants to give a full array that easily and effectively protects the body from tearing itself up. **BioProtect** also contains **SOD** and **Catalase** that serve in many of the Biotics products as natural preservatives.

3) For the initial repair phase, **Biotics (PCS) Purified Chondroitin Sulfates** are extremely effective. The body will often inflame to free up existing chondroitin sulfates for the repair process, especially in areas of little or no circulation such as discs, ligaments, tendons or cartilage joints. Chondroitin sulfates must always be available first for the proper laying down of collagen. When there is not enough chondroitin sulfates available then scarring, adhesions, and poor healing takes place. With regular bodywork and **Biotics PCS** healing will accelerate by 40-50%, back strength and pain reduction are very common, and often dramatic.