

# Inflammatory Diseases

## Part 2

Research has shown that Inflammation causes or contributes or is suspected to be contributing to the diseases listed above. WOW! That is an important finding.

So: Let's take a look at Inflammation and see if we can get a better understanding of it and its affect on the body.

To understand inflammation you need to understand where it comes from.

We have all heard of the essential fatty acids know as the Omega 3's, 6's and 9's.

The omega 3's come from the fish oils and plant source oils like borage oil and flax seed oils.

The omega 6's come from the plant oils we all use to fry and deep fry foods. We also use these type oils in our salads.

The omega 9's come from the meat sources we eat. They are the animal sources of essential fatty acids from fish, beef, chicken, turkey, and pork.

Dr. Chilton says, "Diet is the major factor behind the inflammation epidemic".

But Dr Jerry: "I eat a healthy diet with allot of vegetables, fish several times a week and I watch how much fat I eat."

"Why does my arthritis flare up so often?"

Why do I get so many headaches or sore muscles and my allergies seem to be going crazy all the time?"

Even with the healthy eating habits we have all heard about the problems caused by inflammation still exist for many.

OK: Here we go!

### Inflammation 101:

#### **Immunity:**

Our body has many levels of security to stop a host of intruders before the immune system gets involved.

Skin provides a barrier that keeps out a host of intruders. It also secretes various antibacterial agents that neutralize many bacteria on contact.

Other entry sites like your eyes, ears, nose and mouth are lined with mucous membranes that catch intruders and destroy them before they can get into your bloodstream.

If an invader does manage to get beyond one of these security levels and enter the bloodstream the internal immune systems is activated. Cells that trigger the alarm also send out messengers to activate white blood cells.

Each group of these white blood cells has a special function. One kind called B-Lymphocytes act as an advanced guard making antibodies to attack the intruding bacteria, virus or toxic proteins (undigested foods).

Another type of white blood cell is the Neutrophils—these have a very short life span and react with a virosity to kill unwelcome invaders.

Macrophages are a third type of white blood cell that specializes in gobbling up invaders and releasing antibacterial enzymes that function like a cleanup squad. Vitamin D regulates these so they don't over react and cause more damage than the original assault.

Last, but not least, is the T-lymphocyte or T-Cell. These track down and locate invaders that have escaped the blood stream and kill them or summon more help from other specialized white blood cells.

The white blood cells and other tissue cells produce signals that aid in the destroying of the invaders.

One weapon used is the arsenal of chemical messengers made up of complex fatty acids. These include molecules called Leukotrienes and prostaglandins, which are made from a fatty acid called arachidonic acid or AA.

### **Prostaglandins:**

If you cut your hand or get a scrape the area of the injury will redden and swell up. It becomes sensitive to the touch because it hurts.

Prostaglandins are to blame for this reaction to the injury.

Remember that these prostaglandins are messengers—they send signals to the brain to inform and initiate a response when something happens.

The signal was sent to the brain and the reaction was to cause the blood vessels to dilate around the area of the cut causing the appearance of the reddening and sensation of soreness. So far—so good.

Now that there is more blood flow to the area it is easier for white blood cells to concentrate in the area to fight off infections and other invaders entering through the cut.

Pain signals are also sent to the brain in an effort to get you to stop whatever you are doing and attend to the cut.

Without the pain signal you may not notice that you have been injured thus raising the risk of further injury.

These pain signals can be blocked by medications like viox or celebrex and even the over the counter medications like aspirin or ibuprofen, Tylenol and others.

## **Leukotrienes:**

This is another inflammatory messenger:

They help direct the white blood cell army. They send signals that can bring more white cells to fight infection with. The hope here is that the body's defense system responds with enough white blood cells to do the job. The amount of leukotrienes present at the injury site influences the scale of the defense used to fight.

Leukotrienes add life to the white blood cells while they are in the infected tissues. This allows them to provide a longer response to the invaders.

There are many types of inflammatory messengers used in the immune system but the prostaglandins and leukotrienes are central players in the system.

This battle against invaders and as a means of repairing damaged tissues in the body, after an injury, is paramount to our survival. Most of the time all goes well and life continues on without to many complications.

The problem starts when the healing process doesn't stop when the job is done.

Why would that happen? You ask.

Simply put: **Inflammation and the diseases it causes are too much of a good thing.**

All inflammation operates in the same way whether your body is fighting infection or just repairing a tear in a muscle or ligament.

Inflammation isn't a malfunction in the way the system works. The system, in fact, is perfectly OK. It's just firing too much.

In other words the mechanism that sets the system in motion is stuck in "Red Alert" mode all the time, it over reacts to everything that happens.

Earlier I mentioned that the excessive number of messengers, come from the fatty acids, AA, in our diet.

When the defense system is in "Red Alert" mode the body is primed for a major attack. The body believes it is defending against a major assault when in reality there is only a small tear in the joints. What a big miscalculation—we just sent in 50,000 troops to do the job that a few good men could have handled easily.

There are too many messengers standing around getting nervous, ready to pounce on the next guy that looks at them wrong

## **So where do all these messengers come from?**

Well your body makes some of them and others come from the food you eat.