

# Nutrition and Arthritis

For years, the medical community rejected the possibility that diet had anything to do with arthritis. Indeed, many claims that the two were related were made by quacks making money off of individuals eager to relieve their suffering, and were dearly unsubstantiated by clinical evidence. Now, however, research is showing that diet can indeed affect the symptoms of arthritis and we are beginning to understand why.

The nutritional effects or benefits are different for different kinds of arthritis. Most of the research has been done with rheumatoid arthritis, although some of what we are learning has implications for osteoarthritis as well.

## **RHEUMATOID ARTHRITIS**

Because rheumatoid arthritis is an auto-immune disease, factors that affect the immune system have been studied. Those that are specific rheumatoid arthritis are listed below.

### 1. Food sensitivities

Several studies support the view that food allergies or sensitivities may trigger pain and swelling in people with rheumatoid arthritis. Estimates of the percentage of those who may respond to eliminating an offending food range between 5% to 60%. Finding out just what foods are problems is not an easy job though. It is time consuming and requires a great deal of patience and persistence.

Because food allergies or sensitivities are so individual, a systematic approach to figuring out which foods affect a person is important. Nutritionists prefer that diets be restricted only to the degree that is necessary.

The foods that are most commonly involved include cow's milk, wheat and other grains, corn, citrus and nuts. Almost any food has the ability to affect an individual.

### 2. Vegetarian diet

A recent Norwegian study followed 27 patients with rheumatoid arthritis for one year. They began with a 7-10 day modified fast using only tea and vegetable juice. After the fast, each subject was put on a gluten-free vegan diet (no animal products) for 3 1/2 months, then on to a lactovegetarian diet (includes dairy products) for the remainder of the year. The most significant part of the design was that the diet of each subject was individualized after the fast. Foods were added one at a time. Any foods that were associated with an increase in symptoms were discontinued. Significant Improvements occurred during the first month in both subjective and objective parameters and were maintained throughout the year.

There are several possible reasons why this dietary approach worked as well as it did. First, it minimized each person's allergic reactions to food through the fast. Secondly, a lower protein diet may help by changing the bacteria in the intestine which decreases allergic reactions to other foods.

### 3. Vitamins and minerals

Ironically, the nutritional factors that enhance immune function may not be best for people with rheumatoid arthritis. Iron is an example. Poor iron status is associated with decreased immune function. There is evidence, however, that mild iron deficiency may be protective against rheumatoid arthritis and also that excess iron may worsen inflammation by increasing free radical production.

Another example of this irony involves zinc. Supplemental zinc at moderate intakes has been shown to enhance immune function, but at high levels has been shown to inhibit immune function. One interesting study showed clinical improvement among people with rheumatoid arthritis when they received a fairly high dose of supplemental zinc, levels that would have inhibited immune function. Although no other studies to date have demonstrated this same effect, it provides food for thought.

Serum levels of pantothenic acid are also lower in patients with rheumatoid arthritis. 'With this vitamin, however, there is evidence that supplementation may have some real benefit. A very early study showed improvement in people who took 500 mg of pantothenic acid. In 1980, a study started patients with 500 mg a day and gradually increased to 2000 mg of pantothenic acid. The significant clinical improvements that were seen included decreased duration of morning stiffness, degree of disability and severity of pain.

## **RHEUMATOID AND OSTEOARTHRITIS**

The nutritional factors that affect the process of inflammation may be important for both types of arthritis.

### 1. Dietary fat

It has been demonstrated that the amount and type of fat in the typical American diet can cause an increase in joint inflammation in rheumatoid arthritis. Although research has not been done on osteoarthritis, when inflammation is involved, the effects should be the same.

This effect on inflammation, as well as pain, is the result of the production of prostaglandins from dietary fat. Prostaglandins are hormone-like substances produced in the body. The prostaglandins that are made from the fatty acids in vegetable oil and most animal fat increase inflammation. The prostaglandins that are produced from the fatty acids in fish oil and supplemental oils such as evening primrose oil and black currant oil decrease inflammation.

## 2. Antioxidant nutrients

The process of inflammation is thought to involve damage from oxidation of tissue. Although there has not been definitive research showing improvement of symptoms, supplementing with antioxidant nutrients (vitamins C, E and beta-carotene) is being recommended by some who feel that reducing oxidative stress in inflamed joints may ultimately reduce inflammation.

## **OSTEOARTHRITIS**

The only nutritional approach that has been discussed consistently over the years for osteoarthritis is weight loss. The recommendation to lose weight has been given to countless patients with osteoarthritis by their doctors over the years. A recent study suggests anew that, in a preventive sense, weight loss can reduce the risk of developing osteoarthritis in the knees. Unfortunately, this finding does not take into perspective the difficulty many people has losing weight and the lack of permanence of weight that is lost on a diet.

An alternative approach to controlling weight through dieting or restricting calories is to eat a lowfat diet (10-15% of calories from fat) and to engage in regular physical activity. This approach which is truly "lifestyle change" rather than a temporary chance will result in weight loss, however modest, that is relatively permanent.

## **PRACTICAL RECOMMENDATIONS**

1. Food sensitivities can be uncovered in a couple of ways. The simplest approach is to eliminate one food completely for one to two weeks and carefully record changes in symptoms. Because foods like milk, wheat or corn are found in many foods, care must be taken to carefully read ingredient labels and avoid even the smallest amounts. If improvements are seen, a "challenge" with the food can confirm that the food has a real effect. To do this, the food is included back in the diet for one to two days. If, after a few days symptoms return, a food sensitivity may well have been discovered.

A second approach which requires a bit more guidance is to use a traditional elimination diet used by allergists. This approach begins by eliminating all but the most hypoallergenic foods (foods least likely to cause an allergy). Gradually, different foods are reintroduced and a careful record is kept of changes in symptoms. Foods are stopped if they cause an increase in symptoms.

2. Vegetarian diets may be helpful for the reasons mentioned above. Reduce intake of animal foods such as meat, poultry, eggs and dairy products.
3. Dietary fats can make a significant difference. Eat a lowfat diet, avoiding especially all vegetable oils (including the heart healthy oils • olive and canola) and animal fats. Increase intake of fish oil by eating fish several times a week, emphasizing the fattier fish like salmon, mackerel, sardines, herring, white albacore tuna and trout. Consider

supplementing with evening primrose oil or black currant oil at a dose that provides 500 mg of gamma-linolenic acid a day.

4. Vitamins and minerals must be used carefully. A basic multivitamin and mineral supplement is probably not harmful although should be used prudently. (If possible, with rheumatoid arthritis, find one without iron or with relatively low doses of iron. Separate supplements of iron and zinc should probably be avoided.) If symptoms increase with the use of the supplement, discontinue its use.

Individuals with rheumatoid arthritis may consider supplementing with pantothenic acid as a dose of 500 mg a day.

For all types of arthritis, the antioxidant vitamins can be taken in the following doses:

vitamin C	250-500 mg
vitamin E	100-400 IU
beta-carotene	10,000-25,000 IU (6-15 mg)