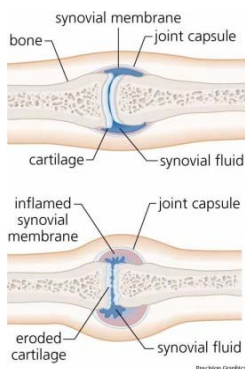


Rheumatoid Arthritis and Nutrition



What is Rheumatoid Arthritis?

‘Arthritis’ is a name for a group of conditions that affect the joints of the body. Rheumatoid arthritis is an autoimmune disease. In rheumatoid arthritis, the immune system attacks the lining of the joints which become inflamed and thickened. This causes the body to produce larger than normal amounts of fluid in the joints which leads to swelling, pain and stiffness. If this inflammation persists, the cartilage that covers the ends of the bones and the muscles and ligaments can become damaged. The affected joint can become unstable and deformed. It often affects smaller joints such as those in the hands and feet but larger joints can be affected.

Importance of maintaining a healthy weight

Underweight

People with rheumatoid arthritis often lose weight unintentionally. This may be caused by a loss of appetite due to the disease itself or the side effects of the medication used for treatment. It may also occur due to difficulties with preparing meals. In unplanned weight loss, there is a loss of both muscle and fat tissue. The loss of muscle tissue can make performing everyday activities more difficult and can increase your chance of becoming sick and frail. Therefore, it is important to maintain your weight. Some tips to help you maintain a healthy weight include:

- Eat small meals frequently i.e. have 6 small meals throughout the day instead of trying to eat 3 large meals.
- Consume food that are energy and nutrient dense e.g. meat, fish, cheese, eggs, full-fat dairy products.
- Drink nutritious fluids e.g. milk and milk-based drinks, juice and soft drink.
- Eat meals and snacks that are easy to prepare eg baked beans on toast.
- Enrich ordinary food with extra energy e.g. add cream to soups.

Overweight

Having excess body fat can increase the amount of inflammation in your body. This can make your rheumatoid arthritis worse. Achieving a healthier weight can reduce markers of inflammation such as C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR). Excess body weight also puts extra strain on your weight-bearing joints. If you are overweight, losing weight will not only help your rheumatoid arthritis but it will reduce your risk of heart disease and diabetes. A modest loss of weight (5-10%) can have beneficial health effects. To lose weight you will need to reduce your energy intake to less than your energy expenditure. This will involve modification of the types and amounts of foods you eat but it is still important to ensure that you are consuming all the vitamins and minerals necessary to maintain your health. Some ways to achieve weight lose include:

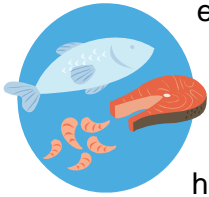
- Reducing your portion sizes e.g. try using smaller plates and bowls
- Eating high fat foods less often e.g. limit cake to once a week
- Eating smaller amounts of high fat foods e.g. use only a small scrapping of margarine
- Substituting high-fat foods with lower-fat versions e.g. use skim milk instead of full cream milk
- Choosing lean cuts of meat and trim off any visible fat before cooking
- Using low-fat cooking methods such as baking and grilling
- Eating plenty of fruit and vegetables to fill you up

The role of fatty acids

The types of fat in your diet can affect the inflammation in your joints. The fat that we consume in our diet is broken down into 4 different types of fatty acids – saturated, trans, monounsaturated and polyunsaturated. In terms of general health, saturated and trans fatty acids are considered ‘bad’ while polyunsaturated and monounsaturated fatty acids are considered ‘good’. Recent research in arthritis has focused on the polyunsaturated fatty acids and how they affect inflammation in the body. Polyunsaturated fatty acids are divided into two main groups which are discussed below.

Omega-3

Omega-3 fatty acids are found in high amounts in oily fish such as tuna, salmon, herring, sardines, anchovies and mackerel. Other sources of omega-3 fats include linseed (flaxseed) and canola oil, walnuts, and foods fortified with omega-3 such as margarine and eggs. Omega-3 fatty acids reduce the production of inflammatory messengers and thus diminish the inflammatory response. This may help to relieve joint pain and stiffness in rheumatoid arthritis. They work in a similar manner to non-steroidal anti-inflammatory drugs (NSAIDs). In addition, omega-3 fatty acids also have anti-thrombotic effects which can help to reduce the risk of heart disease. Some ways that you could increase your intake of omega-3 fatty acids include eating oily fish at least twice a week, adding flaxseeds or walnuts to your cereal or yoghurt, and using canola oil for cooking. You may also want to take a fish oil supplement to increase your intake of omega-3 fatty acids (see section on Fish Oils).



Omega-6

Omega-6 fatty acids are found in nuts, seeds and plant oils such as sunflower, safflower, corn, sesame and soy. Omega-6 fatty acids are not thought to be beneficial in rheumatoid arthritis. In fact, excessive intake of omega-6 fatty acids can actually increase inflammation. Therefore, it is best to have a moderate intake of omega-6 fatty acids.

The role of antioxidants

As part of the inflammatory process in rheumatoid arthritis, there is the production of free radicals. Free radicals are harmful substances that can cause damage to the cells of the body. Antioxidants protect against free radical damage. Antioxidant nutrients include vitamin C, vitamin E and β -carotene. Antioxidants can be found in high amounts in fruit and vegetables. Rich sources of antioxidants include blueberries, cherries, apples, oranges, spinach, tomatoes and broccoli. Aim to eat at least 2 servings and 5 servings of vegetables each day. Try to have a wide variety of fruits and vegetables and choose brightly coloured varieties.



Specific vitamins & minerals

Calcium

Calcium is an essential nutrient which is important for the maintenance of healthy bones.

People with rheumatoid arthritis are at a higher risk of developing osteoporosis, which is a condition where the bones become fragile and brittle and tend to fracture more easily. This is particularly true for people with rheumatoid arthritis who take corticosteroids. Therefore, it is important to ensure that your dietary intake of calcium is adequate. The best source of calcium in the diet is from dairy foods such as milk, cheese and yoghurt. It is recommended that older adults have at least 3 servings of dairy



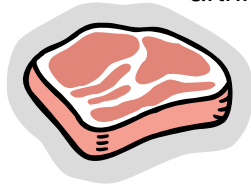
foods each day. If you are trying to lose weight pick skim or reduced fat varieties. Other foods that contain calcium include canned fish with bones eg salmon, sardines, pilchards; green leafy vegetables and foods enriched or fortified with calcium such as tofu, fruit juice and breakfast cereals.

Vitamin D

There is some evidence that rheumatoid arthritis develops faster in people who have low levels of vitamin D. Vitamin D is also important for helping the body to absorb calcium. Vitamin D is only found in a small number of foods in the diet such as margarine, eggs, oily fish such as salmon, and fortified foods. It is difficult to get enough vitamin D in the diet but vitamin D can be produced in the body when skin is exposed to sunlight. It is recommended that you expose your face, hands, arms and/or legs to sunlight for about 10 minutes each day to allow adequate production of vitamin D. If your levels are very low or you are at high risk of deficiency you may require a vitamin D supplement.

Iron

Anaemia (a deficiency in the number of red blood cells or their haemoglobin content) is common in people with rheumatoid arthritis. NSAIDs (non-steroidal anti-inflammatory drugs) are a group of drugs used to relieve pain and stiffness in people with rheumatoid arthritis. Examples of NSAIDs include aspirin, ibuprofen and diclofenac.



NSAIDs may cause bleeding and stomach ulcers in some people which can lead to anaemia. Anaemia can also develop as a result of inflammation. If you have anaemia, increasing your iron intake may help. Iron can be found in the diet in two forms – haeme and non-haeme. Haeme iron comes from animal sources such as red meat, fish

and poultry. Non-haeme iron comes from plant sources such as green leafy vegetables, legumes and seeds. Haeme sources of iron are better absorbed than non-haeme iron. The absorption of non-haeme iron can be enhanced by having vitamin C at the same time eg fruit juice with your meal.

Folate

Folate is an important nutrient in patients who are taking a drug known as methotrexate. Folate is involved in the production of new cells in your body but methotrexate blocks this action. People with rheumatoid arthritis who take methotrexate tend to have decreased stores of folate and are at risk of folate deficiency. Folate deficiency can cause megaloblastic anaemia. If you are taking methotrexate, your doctor will probably also prescribe a folate supplement. It is also a good idea to make sure that your diet contains adequate amounts of folate. Foods that are high in folate include green leafy vegetables, pulses, fortified cereals and some fruits such as oranges.

Supplements

Fish oils

Fish oils contain omega-3 fatty acids. There are two forms of omega-3 fatty acids found in fish oils - eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Studies have shown that fish oil supplementation in people with rheumatoid arthritis can reduce tenderness in joints, reduce the duration of morning stiffness, reduce levels of inflammatory markers and decrease long-term requirements for non-steroidal anti-inflammatory drugs (NSAIDs). There are many different fish oil products on the market so it is important to read the labels. The optimal dose of omega-3 fatty acids and combination of EPA and DHA is unclear but it is thought that



at least 2.7g of omega-3 fatty acid (EPA plus DHA) is needed to reduce inflammation. To achieve this dose, each day you will need:

- 9-14 standard 1000mg fish oil capsules, or
- 5-7 capsules of a fish oil concentrate, or
- 15ml of bottled oil, or
- 5-7ml of concentrated bottled fish oil

It will take about 2 months of taking fish oils at this dose to notice any effects on your arthritis. If you have not noticed any improvement after 3 months it is unlikely that fish oils will help you. There are few side effects of taking fish oils but they can cause an upset stomach.

Note: It is important not to confuse fish oils with fish **liver** oils. Fish liver oils also contain vitamin A which can have serious side effects if taken in large amounts.

Glucosamine and Chondroitin

Glucosamine and chondroitin supplements are not helpful in people with rheumatoid arthritis. Glucosamine and chondroitin are involved in the repair and maintenance of cartilage and thus may possibly be helpful in osteoarthritis where there has been damage to the joint cartilage but are not beneficial in people with inflammatory types of arthritis.

Other supplements

There are many supplements available that claim to help rheumatoid arthritis. At present there is no substantial evidence that evening primrose oil, borage oil, aloe vera drinks, bromelain, cetyl myristoleate (CMO), devil's claw or methyl sulfonyl methane (MSM) will have beneficial effects on rheumatoid arthritis.

Common myths

There are a number of myths in regard to diet and rheumatoid arthritis.

- **Fasting.** Some research has shown that fasting for a week can relieve the symptoms of rheumatoid arthritis but when a normal diet is recommenced the symptoms return. Fasting means that your nutrient intake is compromised and may put you at risk of vitamin and mineral deficiency. Therefore, fasting is not recommended in rheumatoid arthritis.
- **Vegetarian and vegan diets.** Red meat has been linked to rheumatoid arthritis. Vegetarian and vegan diets have been reported to reduce symptoms but it is unclear whether this is due to the avoidance of meat or as a result of reduced energy intake, increased intake of antioxidant nutrients or a change in the polyunsaturated fatty acids in the diet. Meat is a good source of protein, iron, vitamin B12, potassium and magnesium so if you decide to cut it out, you will need to ensure that you are getting enough of these nutrients from other sources.
- **Food allergies.** A food allergy is a rapid response by the immune system to certain foods and can result in swelling of the lips, mouth and tongue and a rash over the body. There is no evidence to suggest that rheumatoid arthritis is caused by a food allergy.
- **Food intolerance.** A food intolerance is a reaction to food which is not mediated by the immune system. Symptoms of food intolerance include nausea, bloating, diarrhoea, vomiting and skin rashes. Food intolerances have been demonstrated in some people with rheumatoid arthritis but there is no evidence to suggest people with rheumatoid arthritis have a greater risk. Exclusion or elimination diets may be used to treat food intolerances but should only be undertaken after consultation with a health professional due to the risk of nutrient deficiency.
- **'Acidic' foods.** Foods such as citrus fruits, tomatoes and pickles are often avoided by people with rheumatoid arthritis due to their acid content. There is no evidence

that these foods have an effect on rheumatoid arthritis and they are good sources of vitamins.

Overcoming food preparation difficulties

Preparing food can be difficult if you have rheumatoid arthritis, particularly if the joints of the hands are affected. Healthy eating is important so careful planning may help make things easier. Some tips that may assist you in healthy eating include:

- Plan meals in advance
- Ask relatives or friends to help with shopping and meal preparation
- Use services such as Meals on Wheels or Tender Loving Cuisine
- Make use of times when you are feeling good and make extra portions that you can freeze and use when needed
- Organise your kitchen and pantry so that the things you use most are easy to reach and minimise the need for lifting
- Use lightweight pans, mugs and kettles to ease the strain on your joints
- Use large handled and sharp knives
- Use equipment that has been modified for ease of use eg special peelers

