

Eating for Injury

What we eat (or don't eat) can play a big role in how we recover from injury. When it comes to pain and recovery (especially from chronic conditions), the two most common food problems are:

1. Chronic Inflammation
2. Nutrient Deficiency

Chronic inflammation and Inflammatory foods

When people hear the term "inflammation" most people think of redness, swelling and heat like you would get after badly spraining an ankle. This is acute inflammation and is a normal (and essential) part of the healing process. However, 'chronic' or 'systemic' inflammation is a different.

Systemic inflammation is defined as "*a persistent and chronic inflammatory state which promotes ongoing tissue damage*". Which simply put means widespread inflammation that doesn't go away.

This chronic and widespread inflammation is linked with a host of chronic diseases including diabetes, cancer and cardiovascular disease but also muscle and joint problems such as **disc herniation, arthritis and tendonitis**.

Unfortunately, chronic inflammation is not uncommon. In fact, research shows that **25%** of adult Americans live in a highly inflamed state.

There are many known underlying causes of chronic inflammation, but one major factor is food. Some foods promote this inflammatory state (pro-inflammatory foods) whilst others reduce it (anti-inflammatory foods).

Nutrient deficiency

Nutrients are the building blocks of our food. There are two major types of nutrients that we need to supply our bodies with energy; macronutrients and micronutrients. Macronutrients are carbohydrates, protein, and fat. Micronutrients are vitamins and minerals such as magnesium or vitamin D.

Humans require about forty different micronutrients to function properly. Every single process that happens in the body—from your heart beating to your fingers moving—depends upon these micronutrients.

Not eating enough of the right foods can lead to deficiencies in key nutrients. In fact, studies in industrialised countries show that micronutrient deficiency may **exceed 30%** of the population! Nutrient deficiency has been shown to cause or promote muscle and joint problems such as tendonitis, disc pain and arthritis (along with other chronic diseases like heart disease or diabetes).

In next section we will go through some simple steps you can take to make sure you are getting the nutrients you need for recovery and promoting a healthy inflammatory response.

Foods to Eat

Colourful Fruits and Vegetables

Fruits and vegetables provide important micronutrients and have also been shown to lower levels of inflammation.



Green leafy vegetables such as spinach are high in **magnesium**, whilst citrus fruits, peppers, kiwis and broccoli are high in **vitamin C** (both of which are important micronutrients for repair). Eating a variety of coloured fruits and vegetables, in both raw and cooked forms, will provide a range of important micronutrients.

GOAL - Eat at least two fruits or vegetables with every meal or supplement with a [good quality multivitamin](#) and [magnesium](#).

Good Fats



Fatty fish are the primary source of healthy, “anti-inflammatory” omega-3 fats. These should be balanced with omega-6 fatty acid (found in processed food and vegetable oils intake) in approximately a 2:1 ratio. Most Western diets however are highly skewed in favour of omega-6 fatty acid over omega-3, sometimes in orders of 20:1! This imbalance is considered very “pro-inflammatory” and there is general agreement that people should consume more omega-3 and less omega-6 fatty acid to promote a healthy inflammatory response.

Omega-3 deficiency or imbalance can also manifest as physical signs in the body. These include painful and swollen hands and wrists, dry skin, eczema, diffuse redness of the skin, or cracking of the fingertips.

GOAL - Eat at least 2-3 servings of oily fish (e.g. salmon, mackerel, sardines or herring) per week or supplement with a good quality cod liver oil. We recommend '[Rosita Cod Liver Oil](#)' which is a great source of omega-3 fats as well as vitamins A and D.

Protein

Protein is one of the most important factors which affect healing.

Healing is heavily reliant on the production of collagen (the main protein in your muscles, ligaments and tendons). A deficiency in protein impairs both the growth of the cells that make collagen and the collagen remodelling.



Put simply, not getting enough protein will severely limit your body's ability to heal.

Around 1.5g per kilogram of body weight has been suggested as an adequate intake during recovery. This recommendation is in line with the recommendations of The American College of Sports Medicine, the Academy of Nutrition and Dietetics, and the International Society of Sports Nutrition

Practically, this equates to around 3-4 palm-sized servings of high-quality protein per day.

Top food sources of protein are meat, fish, eggs and dairy. You can get protein from other sources, but these tend to be less bioavailable (usable by the body). If you cannot meet the requirements through whole foods, consider adding a good quality protein shake with or between meals.

GOAL - Eat a palm-sized portion of good quality protein with most meals.

Foods to Avoid

Sugar

All refined carbohydrates (like cakes and cookies as well as refined grains like white bread), lead to a sharp upward spike in the blood sugar level after being eaten. This increase in blood sugar leads to a rapid uptake of sugar by the cells of the body which causes an immediate inflammatory response. This response is proportional to the blood sugar elevation i.e. the more sugar you eat the more your blood sugar spikes and the greater the inflammatory response!

According to the American Heart Association, the maximum amount of added sugars you should eat in a day are:

- Men: 150 calories per day (37.5 grams or 9 teaspoons).
- Women: 100 calories per day (25 grams or 6 teaspoons).

For a little perspective, **a single 330ml can of coke has 35 grams of sugar!** That's almost the entire daily male allowance and well over the daily the allowance for women!



GOAL - Cut out, or at least limit, sugar loaded food and drinks

Bad Fats

Omega-6 seed oils (such as corn, sunflower, peanut and safflower oils) are not, of themselves, unhealthy unless consumed to excess.

The problem is that they are so commonplace in the Western diet (in salad oils, cooking oils, shortening and margarine) that they constitute approximately **20% of all calories consumed**. This is highly pro-inflammatory.

Trans fats are another problem. They are found in margarine, fried foods, cooking oils and most baked goods. A high intake of trans fats is extremely pro-inflammatory and is linked with a host of chronic diseases including diabetes, cancer and cardiovascular disease.



GOAL- Cut out fried foods and swap out the pro-inflammatory omega-6 seed oils and replace them with anti-inflammatory alternatives such as coconut oil, olive oil or grass-fed butter

Supplements to consider

Magnesium

Magnesium is a key nutrient for healing & repair. Deficiency in magnesium leads to disturbed healing and can cause numbness, tingling as well as increased inflammation, potentially leading to headache, migraine and fibromyalgia.

The intake of magnesium in people eating a western-style diet is consistently shown to be lower than recommended. Deficiency is more likely in those with chronic disease as low magnesium state is associated with several chronic diseases including diabetes, hypertension, coronary heart disease, and osteoporosis. The use of some medications can also result in decreased levels of magnesium. These include antacids, antibiotics, anti-hypertensives (for high blood pressure), Digoxin (heart medication), oral contraceptives and HRT). The likelihood that you are deficient in magnesium increases if you suffer with more than one sign of deficiency (e.g. constipation, headache / migraine, muscle tension / cramping, numbness / tingling, or poor sleep.)

Magnesium is usually safe, but it may interfere with the absorption of some pharmaceuticals, notably bisphosphonates (used for osteoporosis), calcium channel blockers (for high blood pressure) and some antibiotics. If you take these medications, talk to your doctor before begin supplementing magnesium.

Supplementation

If...

- your intake of green leafy vegetables, nuts and seeds is limited, or
- you suffer with any of the signs of deficiency (i.e. headache / migraine, muscle tension / cramping, numbness / tingling, osteoporosis or high blood pressure, poor sleep), or
- you suffer with diabetes, high blood pressure, heart disease, osteoporosis, or
- you are taking antacids, anti-hypertensives (for high blood pressure), Digoxin (heart medication), oral contraceptives or HRT

Consider supplementing with 200-400mg magnesium. Because magnesium is 'bulky' most multivitamins only contain a small amount. It is therefore usually better to supplement magnesium separately. Chelated forms like magnesium malate or glycinate are better absorbed.

Vitamin D

Vitamin D is vital in the development and healing of bones. It is also important for lowering chronic inflammation which is important for conditions such as osteoarthritis, osteoporosis, and tendonitis.

Your body can make its own vitamin D from sunlight. You can also get vitamin D from food but only in very small amounts, so it's almost impossible to get all your body needs with just food alone. Therefore, people with dark skin and people with limited sun exposure are particularly at risk of vitamin D deficiency. Older adults and the obese are also more likely to be deficient.

The symptoms of vitamin D deficiency are sometimes vague and can include tiredness and general aches and pains. Some people may not have any symptoms at all.

Most people can take vitamin D supplements with no problems. However, some people should not take vitamin D, or only do so under the supervision of a doctor. For example, people certain medications (e.g. digoxin or thiazide diuretics such as hydrochlorothiazide or Bendroflumethiazide) or people with certain medical conditions (e.g. lymphoma, kidney or liver disease, hormonal disease, or high blood calcium levels).

Vitamin D levels can be checked with a simple blood test. If found to be low, we recommend supplementing with vitamin D in the D3 form.

Curcumin

Curcumin is a component of the spice turmeric. Supplementation of curcumin has been shown to reliably reduce markers of inflammation and increase the levels of antioxidants in the body. It can therefore be helpful in patients looking to manage chronic inflammation and those with chronic pain.

Unfortunately, standard curcumin preparations are very poorly absorbed into the body. Therefore, new formulations that increase absorption have been developed. Currently, the formulation with most supporting research is "Meriva".

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