



# A dietary approach for Chronic Pain

Know what foods to enjoy or avoid to help reduce pain

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# WHAT WE EAT CAN MAKE PAIN WORSE!



While this may surprise you, the research looking at the relationship between food and chronic pain isn't clear. There are many potential dietary factors contributing to pain that it can be hard to know what to eat.

However, recent studies have been looking at the dietary links to chronic pain differently. Instead of focusing on the disease or condition that initiated the chronic pain, the research looked at common dietary factors that sustaining all types of chronic pain. In particular, in recent studies the emphasis centred on **central nervous system sensitisation**.

## WHAT IS 'CENTRAL SENSITISATION'?

Importantly, it's not a diagnosis or condition, rather it is a process that frequently occurs in chronic pain. It involves immune driven inflammation within the brain and spinal cord that impacts the behaviour of neurons (nerves). Or to get technical for those of you that want to know (or if not skip to the heading below "What does diet have to do with it?") central sensitisation is defined as increased responsiveness of particular nerves called nociceptors. These are the nerves that transmit 'danger or threat' messages from the periphery (hands, body, feet, organs etc) to the central nervous system (spine and brain).



With central sensitisation, people experience hypersensitivity to noxious sensations (painful stimulus hurts more than it used to), to non-noxious touch (sensations that shouldn't hurt start to hurt e.g., clothing, movement, normal touch, light, sound) and the pain response spreads (it hurts all over). Central sensitisation involved changes in the central nervous system and not necessarily due to processes in the tissues. This process doesn't occur in isolation and the role of thoughts, feelings, emotions and context all contribute to central sensitisation and the experience of pain, as does what is occurring in the physical body however, the outcome is that central sensitisation amplifies input (noxious or otherwise) from the periphery, thus potentially leading to more severe pain responses.

# WHAT DOES DIET HAVE TO DO WITH IT?

What we eat and our dietary patterns can contribute to the initiating and sustaining central sensitisation, potentially increasing pain.

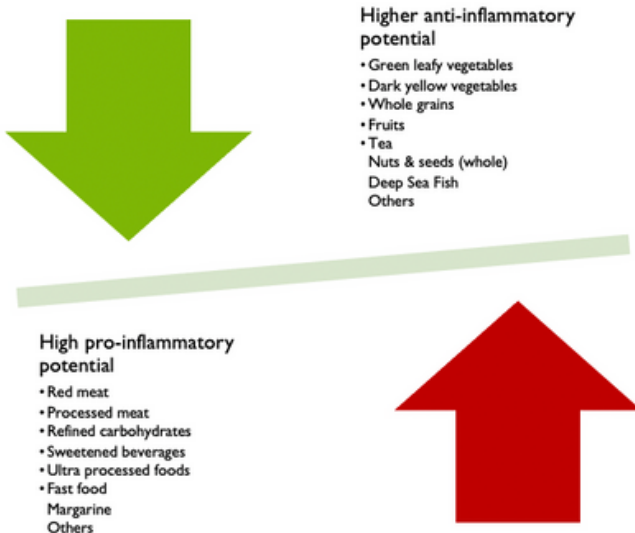
- The vagal nerve (an important receiver of sensory input from the body) informs the brain about many dietary factors including food intake, nutritional status and inflammatory responses to food, which can lead to inflammation of the neurons within the brain and spinal cord.
- Less saturated fat and low sugar diet can lead to decreases in inflammation and oxidative stress reducing vagal sensing of pro-inflammatory responses and thus 'danger' messaging to the central nervous system. In turn, this reduces the induction of central nervous system inflammation, a factor in central sensitisation.
- Studies show dietary interventions play a role in the inhibition of neuro-inflammation and as such a less central sensitisation.

**What we eat can contribute to more or less pain.**

# INFLAMMATION

Foods that contribute to systemic body inflammation have also been shown to contribute to pain. Diets high in pro-inflammatory foods are linked to greater movement and pressure related pain i.e., pain with everyday activities or from touch. The inflammatory potential of your diet can be worked out based on intake of foods with higher or lower inflammatory potential as per the guide below.

**The pattern of what we eat can contribute to more or less inflammation, which contributes to pain.**



# SUGARS & FATS

Other research has shown that a higher intake of added sugar, and lower intake of fibre can impact certain types of pain such as osteoarthritis, back, neck or hip pain. Diets high in added sugar and ultraprocessed carbohydrates with low fibre intake have the potential to contribute to oxidative stress, inflammation and poorer cartilage and joint repair.

Fat intake is also involved. It isn't necessarily the quantity of fat consumed, rather it is the type that matters. Diets that reduce saturated and processed omega 6 fatty acids have been associated with less pain, and olive oil has been shown to be protective as it reduces inflammation and oxidative stress.

**The type of food we eat can contribute to more or less pain.**



# SO, WHAT ARE THE TAKE HOMES



## EAT LESS SUGAR

The research about exactly how much is limited but one study showed benefit if participants ate less than **11 grams of added sugar per day (2.5 teaspoons)**. Added sugar is any sugar that is not naturally found in a food. By way of example there is about 35g of added sugar in 1 x can of soft drink or 24 grams in 1/2 cup of ice cream. Even if you don't reduce intake down to nothing, it is worthwhile reducing sources of added sugar in your diet.

Please note, this does not include fruit. It contains natural sugar and is protective against chronic spine pain.

## REDUCE PRO-INFLAMMATORY OILS

This doesn't mean cutting all fat out (it plays an important role in the health of our nerves and brain, as well as our overall health), rather the focus needs to be on reducing forms of saturated fats such as **fried foods, fatty meats and deli meats**, and **unhealthy oils like corn, soya, sunflower, safflower and canola**. As you will see, these oils can be replaced by those that help reduce inflammation such as Olive Oil.

- CANOLA OIL
- SOYBEAN OIL
- PEANUT OIL
- PROCESSED MEATS
- SUNFLOWER OIL
- COTTONSEED OIL
- MARGARINE
- HYDROGENATED OILS



## AVOID ULTRA-PROCESSED FOOD

As a rule, ultra-processed foods are those which contain few nutrients and low fibre. They are usually sourced from corn, soy, or wheat with added fat and sugar. Not all processed foods are ultra-processed; these products tend to have a long list of ingredients and are pumped full of fillers, preservatives, and additives designed to enhance their flavour, texture, shelf-life, and nutritional profile. Examples of ultra-processed foods include:

**Soft drinks, chips, chocolate, lollies, ice-cream, sweetened breakfast cereals, packaged soups, chicken nuggets, hotdogs, mass produced bread, vegan food substitutes, packaged meals, packaged chips and frozen fries.**



## WHAT FOODS HELP REDUCE PAIN?

- Consume more foods from the anti-inflammatory food list
- Replace saturated and processed fats with healthy fats including:
  - Quality Australian olive oil
  - Avocado
  - Un-roasted nuts
  - SMASH fish – salmon, mackerel, anchovies, sardines and herrings
  - Seeds such as chia seeds & flax.
- Increase vegetable intake to at least 5 serves (cups) per day.
- Aim for 2 serves of whole fruit (not fruit juice).
- Increase legumes and whole grain intake, which will provide fibre to support a healthy gut microbiome. Include:
  - All vegetables
  - Whole or rolled oats (not quick or microwave oats)
  - Wholemeal breads & flours
  - Legume or wholemeal pasta,
  - Quinoa, lentils, and beans.

# A FEW RECIPES...

## **Spinach & Sweet Potato Frittata**

1. Preheat the oven to 200°C.
2. Heat the oil in a cast-iron skillet (or another oven-safe pan) over medium heat. Add the sweet potato and cook, stirring occasionally, for about 10 minutes or until the potatoes are just tender. Add the spinach and stir until wilted.
3. Season the whisked eggs with salt and pepper then pour the eggs into the pan with the vegetables and let the eggs cook for about 30 seconds or until they just begin to set before gently stirring with a spatula to ensure the vegetables are well incorporated into the eggs. Transfer the skillet to the oven.
4. Bake for 10 to 12 minutes or until the eggs have set and are firm to the touch in the center of the pan. Let it sit for about five minutes before cutting into wedges. Serve and enjoy!





# A FEW RECIPES...

## **Baked Salmon with Broccoli & Quinoa**

1. Preheat the oven to 230°C and line a baking sheet with parchment paper.
2. Place the salmon fillets on the baking sheet and season with sea salt and black pepper.
3. Toss the broccoli florets in olive oil and season with sea salt and black pepper. Add them to the baking sheet, arranging them around the salmon fillets. Bake the salmon and broccoli in the oven for 15 minutes, or until the salmon flakes with a fork.
4. While the salmon cooks, combine the quinoa and water together in a saucepan. Bring to a boil over high heat, then reduce to a simmer. Cover and let simmer for 12 to 15 minutes, or until all water is absorbed. Remove lid and fluff with a fork. Set aside.
5. Remove the salmon and broccoli from the oven and divide onto plates. Serve with quinoa and a lemon wedge. Season with extra sea salt, black pepper and olive oil if you like. Enjoy!



# I'M NOT SURE...

If you are unsure about these recommendations, I get it, but to push the point a bit more, studies have shown that saturated fat and sugar intake were found to be positively associated with pain intensity and pain threshold (Elma, et al, 2020). That means that those that ate these foods had high pain levels than those who didn't.

**Still in doubt, try it for 3 weeks and see how you feel.**

The food groups listed above are those that are most likely to sustain pain and pain severity across all pain types – neuropathic, inflammatory, functional and chronic pain generally. Many conditions characterised by chronic pain may require more specific guidelines e.g., migraines, fibromyalgia, Rheumatoid arthritis, IBS and endometriosis. If you need a more personalised approach, book in with me. I will guide you to find the food, nutrition and dietary pattern that is specific to the type of pain you are experiencing, and that suits you.



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