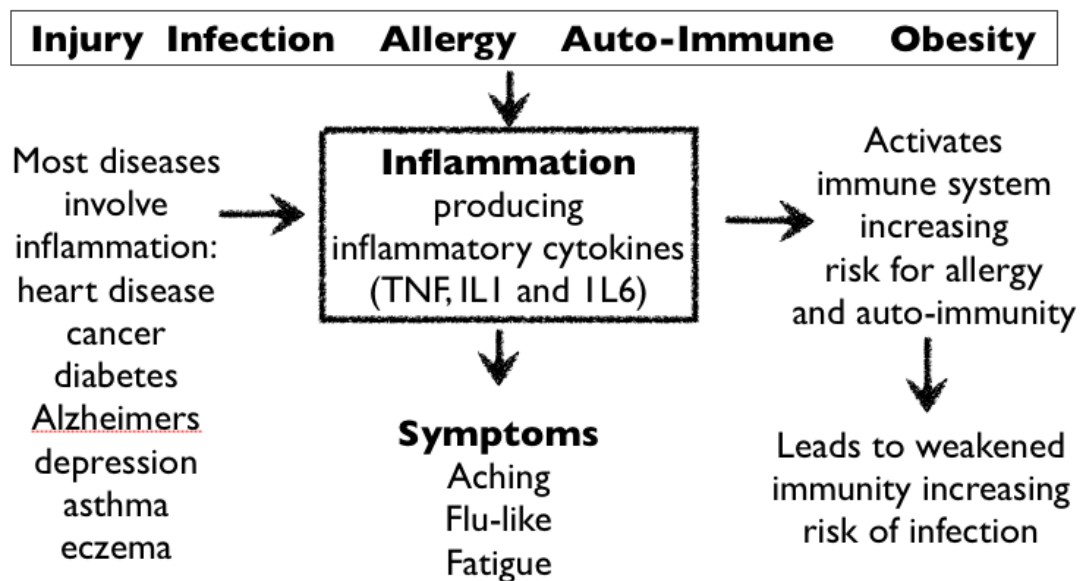


Are you inflamm-aging?

Inflammation lies behind just about every disease process and is a hallmark of what I call 'internal global warming'. It is the main driver of pain, redness and swelling although you can be in a state of inflammation without obviously knowing it. If you use pain-killers for anything then you are experiencing inflammation. The word also has a psychological connotation of stress, anxiety and anger and, indeed, too many stress hormones have an effect on inflammatory markers. For example, a study showed that being stressed raised inflammatory markers more than being depressed, but the worst of all was being cynical.<sup>1</sup> Cynicism illustrates a mental inflexibility and gradual loss of physical flexibility, for example in arthritis, is also a consequence of inflammation. Inflammation levels tend to increase with age and can certainly be argued to be one of the drivers of ageing. Also, so many diseases associated with inflammation – eczema, asthma and auto-immune diseases – are very much in the increase.

But what causes inflammation and how can you have less of it? As you can see in the diagram below inflammation is part of the body's immune system response to circumstances that don't suit it. This could be your spine being out of alignment, an injury, an infection, eating a food you're allergic to or overloading fat cells.



### **Q. How to turn off inflammation, allergy & auto-immunity?**

The body then produces a variety of inflammatory chemicals with strange sounding names like 'tumour necrosis factor' (TNF) and 'interleukin 6' (IL6). Scientists often measure these to find out if something causes inflammation. Coffee drinking, for example, increases these. These inflammation chemicals then cause the symptoms we associate with pain – aching, fatigue and flu-like symptoms. For example, many of

the symptoms of a cold are actually produced by your immune system going into a state of inflammation, not by the virus itself. One of the best indicators of inflammation is an increase in something called C-reactive protein, or CRP for short, which goes up in response to the body being in a state of inflammation.

The higher your CRP level the worse off you are likely to be. For example, it is a strong predictor of severity of coronary artery disease.<sup>ii</sup> In a study of people who had suffered a stroke, CRP proved to be the best indicator of the likelihood of survival, so it is important to reduce your level if it is raised.<sup>iii</sup> The ideal level is as low as possible, and certainly below 1mg/dl, although if you do all the right things your level may well be below 0.8mg/dl which is optimal. A level above 2.5mg/dl means roughly double the risk of cardiovascular disease. Switched on cardiologists often measure this.

Reversing inflammation is a two-step process

According to Hippocrates *“Illnesses do not come upon us out of the blue. They are developed from small daily sins against Nature. When enough sins have accumulated illnesses will suddenly appear.”* What a switched on dude he was because that’s exactly what today’s medical science is showing.

I pay a lot of attention to factors in our diet and lifestyle that trigger an inflammatory response. These include blood sugar spikes, high insulin, coffee but not tea to anything like the same extent, alcohol, being in a state of stress and eating foods you’re allergic to. There’s a bit of chicken of egg here because once your body is in a state of inflammation it starts to react against things the immune system becomes over-reactive, like a belligerent police force, sometimes arresting the wrong villains. Your risk of food allergies go up, substances you could previously tolerate, such as air pollution, tip you into asthma, and the risk for auto-immune diseases that can affect the thyroid, the joints and the nerves, escalates. In Issue 52 [\[link\]](#) I explained how to reverse auto-immune diseases.

Once your body is reacting you get more antibodies (straight jackets designed to latch onto your allergens) floating around in the bloodstream and lymph. These antibodies, known as ‘immunoglobulins’ come in different families such as IgE, IgG and IgA.

- IgE antibodies are like machine guns. These instantly attack, causing immediate and severe reactions to, for example, peanuts or shellfish if these are your triggers. I have an IgE to dairy products. Within minutes I can feel a pulsing in my nose, leading to sinus inflammation and often a migraine.

- IgA antibodies in the gut attack invaders, such as the yeast candida. If you don’t have enough you can end up with endemic candidiasis, an overgrowth of yeast.

- IgG antibody reactions account for most food intolerances. They are like rifles compared to the machine gun of IgE and it often takes several hours, or even a day or two, to start getting symptoms. So these kind of allergies are harder to detect by observation. Hence, my recommended first step to reducing inflammation is to remove things your immune system currently reacts against and, in the case of food or drink, the best way to find out is to have an IgG food and/or drink intolerance test. This is done using a home test kit, sending your blood sample to the lab who then find

out what you are reacting against. The lab I use is [www.yorktest.com](http://www.yorktest.com) because they have validated their testing process in clinical trials. Once you know what your immune system is reacting against you need to avoid these foods as much as possible for 3 to 4 months. IgG antibodies don't live longer than this so, theoretically, this may mean your immune system no longer reacts against that food. Bear in mind that the major reason we become allergic in the first place is that the gut, that wafer thin membrane that separates our digesting food from our bloodstream, becomes damaged allowing incompletely digested proteins through. So, healing the gut while you avoid your current food triggers, which is best done with a combination of **digestive enzymes, probiotics** and **glutamine**, is key to reversing food intolerances.

But you may also need to avoid, or minimise other substances or circumstances that trigger an immune response. By eating a low GL diet, staying away from sugar, caffeine, alcohol as much as possible, you can ease the load on your immune system, and hence reduce inflammation. My 9 Day Detox Diet [link] does just this, also eliminating wheat and dairy products, as well as fried food. So many people tell me it transformed their health rapidly. But that's only one side of the story.

Increase anti-inflammatory foods

The other vital step is to increase anti-inflammatory nutrients. If you do both you have the maximum chance of coming out of inflammation. My favourite anti-inflammatory foods and nutrients are:

**Oily fish** rich in omega 3. It's **EPA**, a type of omega 3, that has the most anti-inflammatory effect.

**Red onions**, rich in **quercetin**. It works with vitamins C and E to protect against free-radical damage. It also has an anti-inflammatory effect by inhibiting the enzymes that produce pro-inflammatory prostaglandins. A trial in which people with rheumatoid arthritis were treated with a vegan diet high in antioxidants including quercetin found they had decreased joint stiffness and pain as well as an improvement in self-reported health.<sup>iv</sup> Quercetin also inhibits the release of histamine, which is involved in inflammatory reactions. Take 500mg per day, between meals.

**Olives** contain an extract called **hydroxytyrosol** which has powerful anti-inflammatory effects. The active ingredient is a polyphenol, which has an antioxidant content over ten times greater than vitamin C. Olives also contain a compound called **oleocanthal** which is chemically related to ibuprofen, although again has none of the negative side effects. In 2005 researchers at the Monell Chemical Senses Center and University of the Sciences in the US found that oleocanthal was a potent anti-inflammatory painkiller.<sup>v</sup>

**Turmeric** - The bright yellow pigment of the turmeric spice contains the active compound **curcumin**, which has a variety of powerful anti-inflammatory actions. Trials in which it was given to arthritic patients have shown it to be similarly effective to anti-inflammatory drugs, without the side-effects. On top of this, it's a potent antioxidant. A review of turmeric in the Journal of Clinical Immunology states that curcumin at low doses can also enhance antibody responses.<sup>vi</sup> This suggests that curcumin's reported beneficial effects in many diseases is likely to be due to its

ability to modulate the immune system and reduce inflammation. You need about 500mg, one to three times a day (the equivalent of one heaped teaspoon or one capsule three times a day).

**Hops** contain something called extract **isooxygene** is one of the most potent natural COX2 inhibitors. A recent study compared the effects of isooxygene to Ibuprofen: two tablets of Ibuprofen inhibited COX2 by 62 per cent, while isooxygene achieved a 56 per cent inhibition.<sup>vii</sup> Not only is it almost as effective, it doesn't have the associated gut problems or other side-effects of anti-inflammatory drugs. You need about 500mg to 1500mg a day.

**Bromelain** is a collection of enzymes found in pineapples. Since it was first used in 1957, it has been shown to have a wide variety of medicinal properties – including the reduction of inflammation in rheumatoid arthritis. There are several mechanisms by which bromelain is believed to help. Firstly, it inhibits pro-inflammatory compounds and blocks the production of kinins, compounds which increase swelling and cause pain. Secondly, it helps reduce swelling by breaking down fibrin – a mesh that forms around an inflamed area, blocking off the blood supply and impairing tissue drainage. Bromelain can be taken in supplement form – 250-750mg a day in between meals.

**Ginger** is another effective anti-inflammatory favoured by Ayurvedic medicine. Twentieth century technology has demonstrated that ginger inhibits the synthesis of pro-inflammatory prostaglandins and thromboxanes, another type of inflammatory mediator. It also has antioxidant properties and contains an enzyme that may have a similar action to bromelain. Supplementing ginger in one study reduced the pain and swelling of three quarters of the participants with rheumatoid and osteoarthritis, while all patients with muscular discomfort experienced relief from pain.<sup>viii</sup> Taking a supplement of 500-2000mg of ginger a day is ideal. Otherwise, incorporate a half inch slice of fresh ginger into your daily diet.

**Glucosamine** is one of the best known non-drug treatments for joint pain is glucosamine. It's rich in the shells of prawns, if you fancy eating them. Glucosamine is an essential part of the building material for joints and the cellular 'glue' that holds the entire body together, although joint cartilage contains the highest concentration. The main mechanism by which glucosamine appears to stop or reverse joint degeneration is by providing the body with the materials needed to build and repair cartilage. However, it is also an anti-inflammatory.<sup>ix</sup> A study of individuals with osteoarthritis of the knee found that participants taking 1500mg of glucosamine sulphate daily had a similar reduction in symptoms to those taking 1200mg of ibuprofen daily. However, the glucosamine group tolerated their medicine much better.<sup>5</sup> Glucosamine hydrochloride appears better tolerated than the sulphate form – aim for 1000 to 2000mg a day. It works especially well when combined with MSM (see below).

**MSM**, which stands for methylsulfonylmethane, is a source of the essential mineral sulphur. Sulphur is involved in a multitude of key body functions including pain control, detoxification and tissue building. Extraordinary results have been reported for pain relief in those with arthritis who took MSM.<sup>x</sup> One study at UCLA School of Medicine in California found that on 2250mg of MSM a day, patients with arthritis had an 80 per cent improvement in pain within six weeks, compared with 20 per cent

in those who had taken dummy pills.<sup>xi</sup>The therapeutic dose appears to be 1500-3000mg a day.

By making many of these foods a staple in your diet you reduce inflammation. For example, my kedgeree recipe in the Ten Secrets Cookbook [link], made with mackerel and red onions, uses turmeric and olive oil gives a load of natural anti-inflammatories. You can add more olives. That, and a ginger tea, is a recipe for reducing pain.

Good anti-inflammatory supplements use highly concentrated combinations of these natural anti-inflammatories at doses beyond that which you can eat. For example, you can supplement 500mg of quercetin, which a red onion provides only 20mg. These kind of levels are great for switching your immune system out of inflammation, but are not necessary, although not harmful, on a daily basis if you are otherwise healthy. Together with a low GL diet, high in antioxidants which also help switch off inflammation, a positive attitude, reducing your stress levels and exercising to keep your muscles strong and your joints supple, is the way to put an end to inflammaging.

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<sup>ii</sup> A. Masood, et al., ‘Serum high sensitivity C-reactive protein levels and the severity of coronary atherosclerosis assessed by angiographic gensini score’, *Journal of the Pakistan Medicinal Association*, 2011 Apr;61(4):325–7

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<sup>iv</sup> Hänninen O et al, ‘Antioxidants in vegan diet and rheumatic disorders’, *Toxicology* (2000), vol 155 (1-3), pp 45-53.

<sup>v</sup> Beauchamp G et al, ‘Ibuprofen-like activity in extra-virgin olive oil’, *Nature* (2005), vol 437, pp 45-46.

<sup>vi</sup> Jagetia G C & Aggarwal B B, ‘Spicing up of the immune system by curcumin’, *Journal of Clinical Immunology* (2007), vol 27 (1), pp 19-35.

<sup>vii</sup> Lemay M et al, ‘In vitro and Ex vivo cyclooxygenase inhibition by a hops extract’, *Asia Pacific Journal of Clinical Nutrition* (2004), vol 13 (suppl), pp S110.

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<sup>ix</sup> Results presented at the American College of Rheumatology Annual Scientific Meeting (2005). Available at

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<sup>x</sup> ‘Methylsulfonylmethane (MSM) monograph’, *Alternative Medicine Review* (2003), vol 8 (4), pp 1514-22.

<sup>xi</sup> Jacob S W & Appleton J, *MSM: The Definitive Guide. A comprehensive review of the science and therapeutics of methylsulfonylmethane* (2003), Freedom Press, pp 107-21.