**Understanding Inflammation: Management, Causes, Treatments… and Goldilocks.**

Pain, swelling and redness. These are the most common signs of inflammation. But once you have any or all of these symptoms, your body is already trying to battle the enemy cause of inflammation. So there is already damage, infection or perhaps even, disease.

There are two types of inflammation; acute and chronic. Acute inflammation usually occurs as a result of a direct injury like a cut, sprain, bone or muscle injury. Or it might be the result of an infection from a virus, bacteria or a parasite. Chronic inflammation occurs as a result of damage to tissues, blood vessels and joints. It’s commonly associated with arthritis, but it can also be a result of other degenerative conditions and disease. And as we age, the likelihood of experiencing chronic inflammation escalates.

Understanding inflammation is key to staying healthy. So rather than seeing inflammation as something to stop or beat, it should be considered as something you monitor, so that you can get appropriate treatment at the right time.

**Managing inflammation**

When inflammation disrupts your life, all you want is a way to get rid of it. Find the cause, treat it and get back to your ‘normal self’. But over time, repeated episodes of inflammation may cause a range of diseases, including arthritis, heart problems and even dementia. So treatments need to be customised for the kind of inflammation being experienced. And it’s not as simple as taking a tablet before bed each night. Indeed this kind of inflammation masking may do as much harm as good.

Across-the-counter NSAID medications like ibuprofen were heralded in the 1990s as a miracle cure for inflammatory problems. But while they are still useful at masking pain from particularly acute inflammatory conditions, recent research has indicated that [long term use may actually lead to chronic pain](https://www.science.org/doi/10.1126/scitranslmed.abj9954).

Daily turmeric lattes won’t help either. Curcumin (the active compound in turmeric) does have powerful antioxidant and anti-inflammatory properties, but because it is quickly absorbed and passed through the body, you’d need to consume a serving with each meal for it to have real, long lasting effects. And even then, there may be other issues with long term and high volume consumption.

So rather than seeking out generic anti-inflammatory medication, management of inflammation needs to focus on the specific cause. Blood tests that search for inflammation biomarkers can provide some clues as to the nature of any inflammation, and guide towards more effective treatments.

**Early warning signs**

The advantage of monitoring inflammation through blood tests is that you can pick up early warning signs of disease, long before the usual symptoms of inflammation or the disease itself are noticeable.

Connor O’Meara, PhD, and Principal Scientist at Drop Bio Health, says that these warnings help to provide guidance on lifestyle changes that could help manage inflammation.

"Inflammation is the body’s early warning system, not just for infection but also for preventable diseases attributed to poorer lifestyle,” he said. “A systemic and chronic elevation of inflammatory markers have consistently been detected in those with sedentary lifestyles and suboptimal nutrition, which predate the development of heart disease.”

Tracking of inflammation markers among people who are in the process of altering their lifestyle can be useful in reinforcing lifestyle changes, as well as developing a personalised inflammation management routine.

And this kind of marker tracking also helps prevent the onset or progression of serious diseases.

“Similar trends in inflammatory markers have been observed in people afflicted by alcohol, sleep and stress-related conditions,” said Dr O’Meara. “Consequently, consistent and long-term measurement of inflammatory markers can be a valuable tool in monitoring one's lifestyle and adherence to a preventative rather than reactionary health philosophy," he said.

Several autoimmune illnesses can cause inflammation, and some inflammatory conditions are associated with the growth and spread of some cancerous tumours.

Dr Darren Saunders, biomedical scientist and Drop Bio scientific advisor, says that is a key part of cancer replication. "Chronic inflammation (that is, inflammation that persists for an extended period of time) has been associated with increased risk of several cancer types,” he said. “Chronic inflammation can cause accumulation of DNA damage, which is an important part of the underlying processes that cause normal tissue to transform into a tumour."

[Recent research](https://n.neurology.org/content/94/3/e254) has also connected inflammation markers with the onset of dementia. Early identification of dementia onset provides the opportunity for interventions that could slow or even halt the progression of diseases like Alzheimer’s, Parkinson’s and Huntington’s disease.

Biomarkers collected from blood samples are a good indicator for inflammation levels in the body. It’s important to note, however, that inflammation biomarkers can deviate from the expected range simply in response to a virus or localised infection. And not enough inflammation in these markers can be just as concerning as too much inflammation.

**Why Goldilocks Got It Right**

You remember the children’s story. Goldilocks went to the home of the three bears and tested the food and the beds. When it came to the food, one serving was too hot, another too cold, but the third was just right. The beds were too hard, too soft, and then again, just right. Whatever is considered ‘just right’ could be said to be in ‘The Goldilocks Zone’.

There is a Goldilocks Zone for inflammation, too. The immune system needs inflammation to fight off infections, and for the body to function normally. So while you might want to get rid of inflammation in the body, it’s important to understand the role it also plays in keeping you healthy.

Balance is key to ensuring that the rate of inflammation is kept at an optimum, Goldilocks Zone level. But because it can be difficult to know when inflammation is getting out of balance, monitoring of inflammation markers can be useful. If inflammation is rising in your body, you can seek further testing to understand the type, source and treatment for that inflammation. And you may even be able to intervene in the development of diseases before they cause significant damage.

Professor Saunders has noted that inflammation testing is just one of the markers that can help identify the onset of disease.

“Various molecules (e.g. proteins, hormones, etc) carried in the blood give us an insight into the function of the immune system, of which inflammation is just one important part,” he said. “By measuring the levels of these chemical messengers we can monitor inflammation and track changes over time."

He added, "Inflammation is part of our body’s normal physiological response to injury or infection. Like most parts of our immune system, there’s an optimal level of inflammatory response and either too much or too little inflammation can cause serious health problems. Deficiencies in certain cell types can hamper our ability to mount an appropriate inflammatory response, making us more susceptible to infection and delayed healing of injury”. .

Many of these inflammation biomarkers don’t require a substantial amount of blood to identify any imbalance. A simple finger prick blood test, conducted at home, is all that’s needed to get started on discovering the cause of inflammation, or to identify risk factors of disease.

**‘Just right’**

We all live with inflammation as part of a functioning and healthy immune system. But the key is to find the Goldilocks Zone of enough inflammation to stay healthy, while keeping inflammation levels in check, and monitoring for any potential threats to wellbeing down the track. Understanding where the inflammation Goldilocks Zone is for you, will put you and your clinicians in a better position to treat both acute and chronic inflammation, and get you back to your normal, ‘just right’ self.

**Wondering what are the inflammation levels in your body at the moment?**

Take the [WellBeing](https://www.dropbiohealth.com/service) test to track and manage inflammation over time. With a few drops of finger prick blood you can easily collect at home, you receive reports with insights, recommendations and next steps on Inflammation, Sleep, Stress, Nutrition, Energy and Alcohol Consumption.