



# Inflammation: Friend or Foe?

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炎症：  
是敌是友？

What does the word inflammation bring to your mind? Ask anyone and most of the time they will say that inflammation is bad thing, and that we should minimize inflammation in our bodies as much as possible.

What if our impression of inflammation has been wrong all this while? What if inflammation or certain types of inflammation is in fact really beneficial for our body?

## What is inflammation?

Let's get back to basics to find out what exactly inflammation is.

Inflammation is an important part of the body's defence mechanism against foreign invaders such as viruses and bacteria; and to repair damaged tissue. It is the white blood cells that release chemicals into the blood or affected tissues to protect your body from foreign substances. This increases the blood flow to the area of injury or infection, resulting in redness, warmth and in some cases swelling. It is also needed by the body to heal itself after an injury.

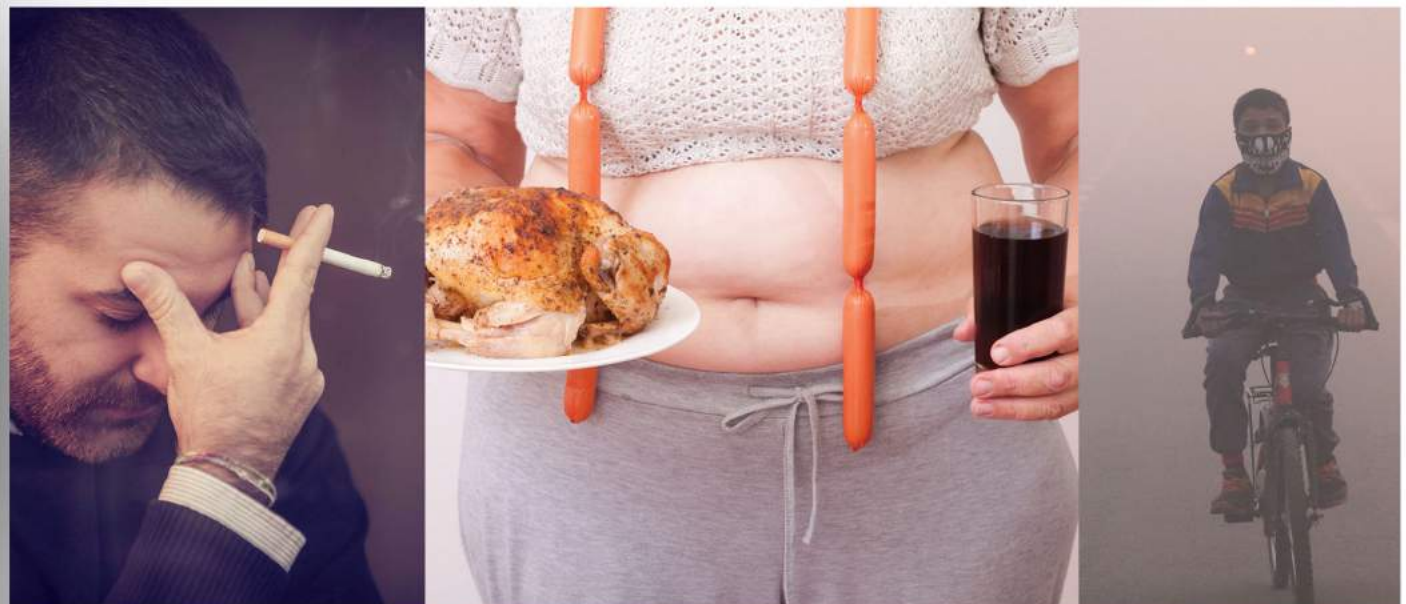
Without inflammation, cuts will become septic and infections could become fatal. Inflammation is often identified by swelling, redness, pain and immobility.

## Two types of inflammation

There are two types of inflammation: acute and chronic low-grade inflammation. Acute inflammation arises after a cut in the skin, or an infection that attacks a specific part of the body (i.e. throat, lungs, tonsils, etc.). It is often short term and the effects subside after a few days.

Chronic low-grade inflammation, on the other hand, is long term and occurs in a more systemic manner. This type of inflammation would normally affect a larger part of the body (i.e. skeletal system, digestive system, arteries, etc.). Habitual or environmental factors, such as excess weight, poor diet, lack of exercise, stress, smoking, pollution, poor oral health and excessive alcohol consumption can also lead to systemic/chronic low-grade inflammation.

Often, acute inflammation is thought as "good" because it is the body's attempt to heal itself after an injury and systemic/chronic low-grade inflammation as "bad". However, this is not a very good distinction between the two. Regardless of the type, inflammation is the body's natural response to a problem and it is the body's own way of telling us that something is wrong.



您对炎症一词了解多少？大多数的人都会说发炎是不好的，因此都希望尽可能减低或避免炎症的发生。

但是，如果以上对炎症的观点与见解其实是错误的？又或者炎症或其他某些炎症的类型其实对我们身体是有益的？

## 什么是炎症？

那就要回到基本原则来了解炎症的真正情况吧！

炎症是人体抵御外来入侵者如病毒和细菌以及修复受损组织的重要防御机制。这就是白血球将会释放化学物质进入血液或受影响的组织以保护身体免受外来物质侵害。这情况会增加血液流量至受伤或感染的部位，导致受影响区域会出现红肿、温热，甚至肿胀的现象。身体需要靠此发炎反应以在受伤后发挥自然痊愈的功能。

如果没有发炎反应，伤口就会开始化脓，或受感染可以致命。炎症通常会出现肿胀、发红、疼痛和行动不便等症状。

## 两种类型的炎症

炎症具有两种类型：急性和慢性低度炎症。当皮肤被割伤时，或者身体局部受感染（如喉咙、肺部、扁桃腺等），急性炎症就可能出现。这症状通常是属于短期性，几天后就会消退。

相反的，慢性低度炎症则属于长期性，通常涉及全身。这类型的炎症通常会影响到身体更大的部分（如骨骼系统、消化系统、动脉等）。生活习惯或环境因素，如超重、饮食不当、缺乏运动、压力、吸烟、污染、口腔健康不良和过量饮酒也会导致系统性/慢性低度炎症。

一般上，急性炎症被认为是“正面”的，这是因为身体在受伤后尝试进行自体疗愈，而系统性/慢性低度炎症则被认为是“负面”的。然而，这并不能明显地区别它们。无论哪种类型，炎症是一种身体对问题所产生的自然反应，向我们发出警告：身体出现问题了。

Systemic/chronic low-grade inflammation can also cause auto immune diseases, this happens when the body sends an inflammatory response to an internal threat that isn't really there. This causes the immune system to begin attacking organs, cells, and tissues.

Researchers are still working to understand all the effects of systemic/chronic low-grade inflammation on the human body, but it is clear that it affects the body in many ways. For example:

#### ▪ Heart Disease

Systemic/chronic low-grade inflammation has been linked to cardiovascular diseases. Inflamed blood vessels and growing fatty plaque can cause blockages and clot, which can cause heart attacks.

#### ▪ Diabetes

Increased insulin resistance and elevated blood sugar are usually caused by systemic/chronic low-grade inflammation. In addition to increasing the risk for diabetes, insulin resistance can increase weight gain in most people.

#### ▪ Lung problems

Systemic/chronic low-grade inflammation in the lungs can cause problems like asthma. When the lungs are inflamed, it can cause fluid to accumulate, the narrowing of the airway and breathing difficulties.

#### ▪ Bone Health

Bone loss and lack of bone growth can be caused by systemic/chronic low-grade inflammation. On top of that, inflammation in the digestive system can prevent the absorption of nutrients like calcium and vitamin D which are important for bone health.



#### ▪ Depression

A 2015 study found that people who are depressed had more inflammation in the brain as compared to those who were not depressed. Furthermore, inflammation has been linked to symptoms of depression, including loss of appetite and sleep problems.

#### ▪ Cancer

According to the Mayo Clinic, scientists are investigating if systemic/chronic low-grade inflammation is a contributing factor in cancer development. However, some systemic/chronic low-grade inflammatory diseases (i.e. pancreatitis and Crohn's disease) can increase a person's risk of cancer. And cancers caused by infectious agents are characterized by one thing: systemic/chronic low-grade inflammation.

#### ▪ Anger and aggression

One study found that people with anger and aggression tend to have higher levels of C-reactive proteins (CRP) which is an inflammatory marker. Researchers are still not sure how these two factors are linked.

系统性/慢性低度炎症也会引起自身免疫性疾病—即身体向一个根本不存有威胁性的地方发出炎症反应。这时候免疫系统就会开始攻击身体器官或其他组织和细胞。

研究人员仍在努力研究系统性/慢性低度炎症对人体所造成的具体冲击，但很明显的，它会多方面影响身体的健康。例如：

#### ▪ 心脏疾病

系统性/慢性低度炎症与心血管疾病有关。血管发炎和脂肪斑块的增加会导致血管堵塞和血栓，从而导致心脏病发作。

#### ▪ 糖尿病

系统性/慢性低度炎症通常会引起胰岛素抵抗和血糖升高的现象。对大多数人来说，胰岛素抵抗除了会增加糖尿病的风险，也会导致体重上升。



#### ▪ 肺部问题

肺部系统性/慢性低度炎症会导致哮喘等问题。当肺部发炎时，它会导致液体累积，造成呼吸道变得狭窄和呼吸困难。

#### ▪ 骨骼健康

系统性/慢性低度炎症可造成骨质流失和延缓骨骼生长。此外，消化系统发炎会抑制营养的吸收，例如对促进骨骼健康的重要营养素钙和维生素D。

#### ▪ 忧郁症

2015年的一项研究显示，相较于没患有忧郁症的人士，那些忧郁患者大多都有大脑发炎的现象。此外，炎症与忧郁症的症状有关，包括食欲不振和睡眠问题。

#### ▪ 癌症

根据梅奥诊所的研究，科学家正在研究系统性/慢性低度炎症是否是癌症发展的其中一个因素。然而，一些系统性/慢性低度炎症性疾病（如胰腺癌和克隆氏症）确实会增加患者的患癌风险。由传染性病原体引起的癌症都有一个共同点：系统性/慢性低度炎症。

#### ▪ 愤怒和侵略性格

一项研究显示，带有愤怒和攻击性的人都倾向于拥有高水平的C反应蛋白（CRP），即是一种发炎指标。研究人员仍未找出这两种因素的关联性。



## Anti-inflammatory drugs

Whenever someone is afflicted by inflammation, their most common reaction would be to seek medical help. Most doctors would prescribe anti-inflammatory drugs. Aspirin, naproxen, and ibuprofen are the most common non-steroidal anti-inflammatory drugs (NSAIDs). They are used to treat fever, pain and swelling. Doctors may also prescribe these to treat more chronic conditions such as arthritis and back pain.



Corticosteroids which are often found in inhalers for people with asthma are another group of anti-inflammatory drugs. These drugs reduce inflammation by reducing the production of chemicals involved in inflammation. However, they also reduce the activity of white blood cells, which would alter the immune system in a negative way.

Although taking these drugs may be the convenient “solution”, it only covers the symptoms while leaving the real problems unsolved. On top of that, side effects tend to occur when they are used for a longer period (months or years).

All prescriptions of NSAIDs have a warning that they may increase the chance of having a heart attack, stroke, and stomach bleeding. If you are currently taking NSAIDs or corticosteroids, it is important that you go through the following list of common side effects:

- Stomach pain and heartburn
- Stomach ulcers
- A tendency to bleed easily, especially when taking aspirin
- Headaches and dizziness
- Ringing in the ears
- Allergic reactions such as rashes, wheezing, and throat swelling
- High blood pressure
- Leg swelling
- Oral thrush
- Rapid heartbeat
- Nausea
- Insomnia
- Fluid retention
- Mood changes, such as feeling irritable or anxious
- Osteoporosis
- Diabetes
- Weight gain
- Lowered immunity
- Cataracts and glaucoma
- Thinning of the skin
- Muscle weakness
- Liver or kidney problems. (If you have any kidney problems, please check with your doctor before taking NSAIDs or corticosteroids.)

People concerned with systemic inflammation should incorporate diet and lifestyle changes that reduce inflammation rather than depending on drugs (Please see page 8 for more information on the anti-inflammatory diet that we recommend).

## 抗发炎药物

很多人在开始患上炎症时，最常见的反应就是寻求医疗。大多数的医生都会开抗炎药给病人。阿司匹林、萘普生和布洛芬是当中最常见的非类固醇抗炎药（NSAIDs）。它们都是用于治疗发烧、疼痛和肿胀等症状。医生也会配这些药物来治疗其他的慢性疾病，如关节炎和背部疼痛。

皮质类固醇是另一类常见的抗炎药，可在哮喘患者使用的吸入器中找到。这些药物通过减低引发炎症的化学物质的生产来减少发炎反应。然而，它们也会同时降低白血球的活性，进而损害免疫系统的正常功能。

虽然服用这些药物很方便，但它们都是只能治标不治本。除此之外，长期服用这些药物长达数月或数年，会开始倾向产生副作用。

所有含非类固醇抗炎药的处方都会有警告，提醒使用者药物可能会增加患上心脏病、中风和胃出血的机率。如果您目前正在服用非类固醇抗炎药或皮质类固醇，您必须留意以下几个常见的副作用：

- 胃疼痛和心灼热
- 胃溃疡
- 容易出血，特别是当服用阿司匹林
- 头痛和晕眩
- 耳鸣
- 过敏反应，如皮疹、气喘及喉咙肿痛
- 高血压
- 脚肿胀
- 鹅口疮
- 心跳加速
- 恶心
- 失眠
- 液体滞留
- 情绪起伏，如烦躁或焦虑不安
- 骨质疏松症
- 糖尿病
- 体重增加
- 免疫力降低
- 白内障和青光眼
- 皮肤变薄
- 肌肉无力
- 肝脏或肾脏疾病。(如果患有任何肾脏问题，在服用非类固醇抗炎药或皮质类固醇前必须先咨询医生。)

那些患有系统性炎症的人士，与其依赖药物，不如从饮食和生活型态上作出改变以减轻炎症的症状。(请阅读第8页以获知更多有关抗炎饮食的建议)。