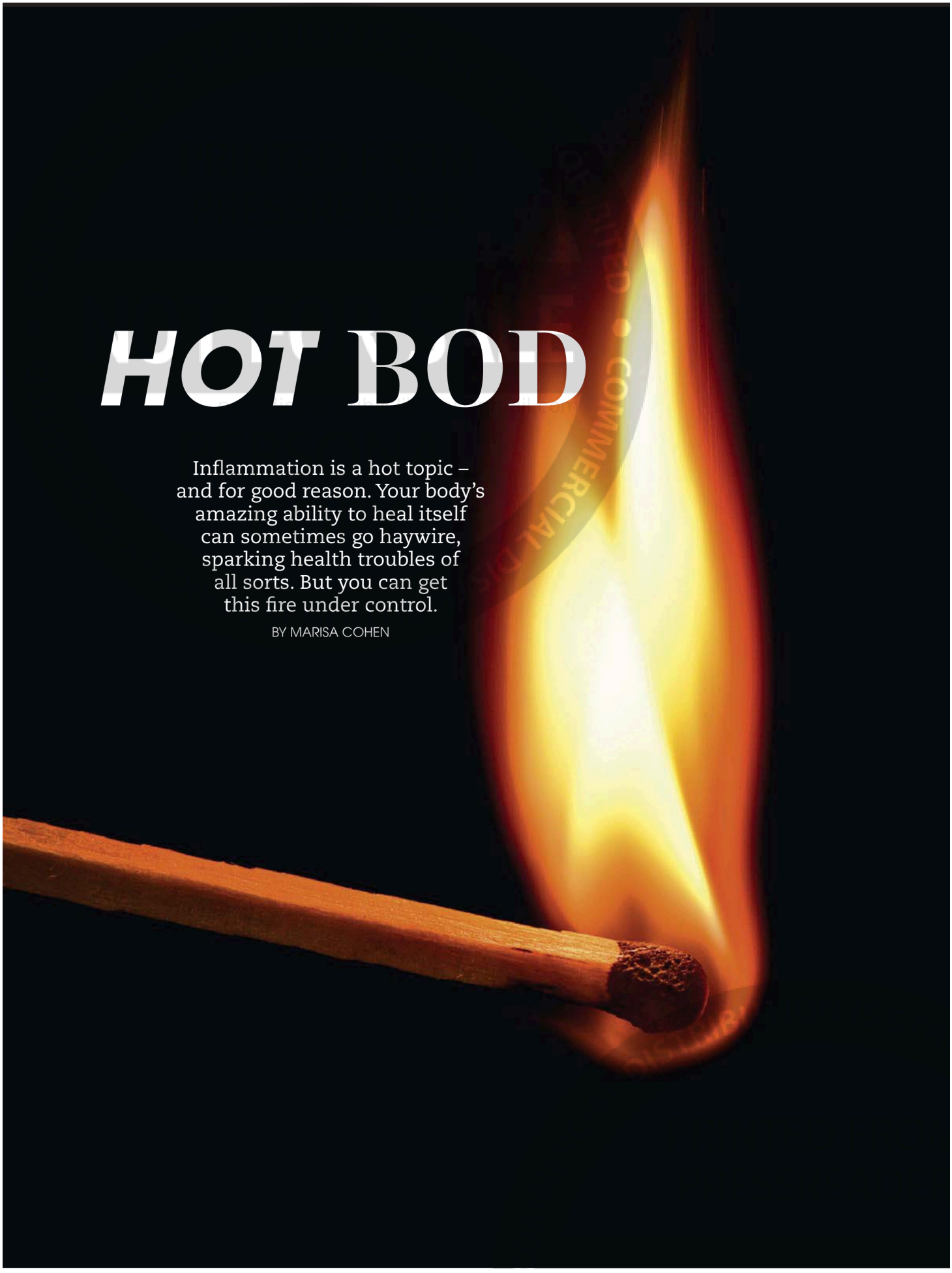
- Inflammation



HOT BOD

Inflammation is a hot topic – and for good reason. Your body's amazing ability to heal itself can sometimes go haywire, sparking health troubles of all sorts. But you can get this fire under control.

BY MARISA COHEN

COMMERCIAL USE

Inflammation is a word you hear everywhere – there are foods, gummies and supplements that claim to fight it, and you could fill an entire wall with books on the subject. But we'll admit that it can still be hard to figure out what the word actually means.

Inflammation is actually helpful and necessary – at least in its acute (or temporary) phase. Without this biological defence system, we wouldn't be able to heal from injuries or fight off infections, says Dr Erica Johnson, an associate professor of microbiology, biochemistry and immunology. "Most of the time this is good, and it helps the body recover," she explains.

Let's say, for example, that you accidentally cut your hand while slicing a sandwich. First, your body releases chemicals that act as a kind of red alert; white blood cells respond to this warning and flood the area of your body that needs help (think of a microscopic SWAT team rushing in to fight off the bad guys and protect the injured parts). This can cause pain, swelling, redness and warmth – all conditions you can see or feel and ones that help your body heal and return to homeostasis, or a state of balance.

When you're fighting off a bacterial infection or an allergen, this protective process happens inside cells, where you can't see it. "An inflammatory response activates your immune system to fight the infection, and that's how you get better," says Dr Sadiya Khan, a professor of cardiovascular epidemiology. After white blood cells neutralise the problem, acute inflammation starts to go away, usually within a couple of days. Soon enough your wound heals, your fever breaks and you feel a whole lot better.

But sometimes the body doesn't quite know when to stop, and that's when inflammation can go from helpful to harmful. ►

DID YOU KNOW?

More than 50 per cent of all deaths worldwide are attributed to chronic inflammatory diseases, including cancer and stroke.

SOURCE: NATURE

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When inflammation becomes chronic

Unlike acute inflammation, which ends when the immune system's job is done, chronic inflammation keeps the system on high alert even when there's no imminent danger. For example, in an autoimmune disorder like type 1 diabetes or rheumatoid arthritis, the body turns on its own tissues by mistake, seeing them as foreign invaders. The tissues are then constantly inflamed, which can cause pain, rash, tissue damage and other symptoms.

Another instance in which chronic inflammation turns potentially deadly: Inflammatory cells in your arteries can cause plaque to develop and build up, which could lead to a stroke. How? The body views the plaque as a foreign substance and initiates even more inflammation to 'fight' it – and this causes the plaque to thicken further.

Over time, chronic inflammation can damage healthy cells and lead to permanent DNA damage. In fact, many of the leading causes of death have been linked to chronic inflammation in one way or another, making inflammation a significant risk to holistic health in the long run. Issues that can be linked to chronic inflammation include Alzheimer's disease and other forms of dementia, various types of cancer, anxiety and depression, high blood pressure, heart disease, stroke, type 2 diabetes, allergies and asthma, acne, eczema, psoriasis and arthritis.



HOW CAN YOU FIGHT INFLAMMATION?

Thankfully, we're learning more and more each day about how to prevent and control chronic inflammation. It all starts with maintaining a healthy lifestyle (we share some tips on the following pages) and may also include medications targeted at treating chronic diseases. These things will help you get back to having inflammation as your body's superhero instead of its villain.

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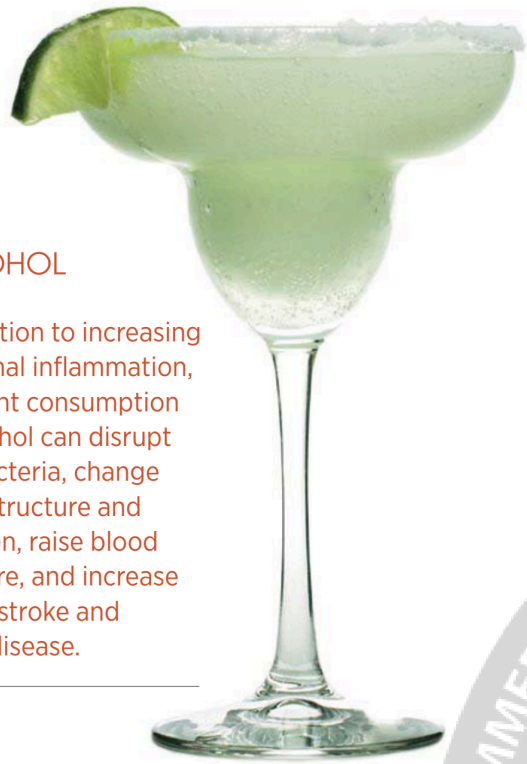
SIGNS OF INFLAMMATION

The symptoms of chronic inflammation overlap with those of many other conditions, so it can be a little tricky to pinpoint what's going on. Several blood tests can check for signs of inflammation, including one that detects a rise in levels of C-reactive protein (CRP) in the liver. The problem is, these tests can't distinguish between acute and chronic inflammation. "You're not trying to identify inflammation as much as look at why it's there," says Dr Khan. "Routine screenings, specifically your annual physical, are the way to do that." The signs of acute inflammation (swelling, redness, heat, pain or tenderness and loss of function) will go away as soon as the injury is healed or the infection is cleared. However, signs of chronic inflammation can linger for months or even years.

These signs include:

- **Fatigue**
- **Chest pain**
- **Achy muscles and joints**
- **Skin rash**
- **Gastrointestinal problems such as constipation and diarrhoea**
- **Headaches**
- **Weight gain**

Does THAT cause inflammation?



ALCOHOL
YES

In addition to increasing intestinal inflammation, frequent consumption of alcohol can disrupt gut bacteria, change brain structure and function, raise blood pressure, and increase risk of stroke and heart disease.

LONELINESS
YES

Research from the UK found that socially isolated people tended to have C-reactive protein, a marker of inflammation, in their blood. And previous studies have connected loneliness with higher pro-inflammatory gene expression. Cut your risk by staying in touch with people you care about – in person, not just on social media.

DAIRY
NO

"Dairy is not a cause of inflammation in the body, and most people don't have to cut it out of their diets to reduce inflammation," says gastoenterologist Dr Rudolph Bedford. In fact, some studies suggest that foods like milk, cheese and yoghurt may actually help reduce inflammation. One caveat: If you have an intolerance of or an allergy to dairy, it's possible that dairy could activate an inflammatory response ranging in severity from rashes or hives to anaphylaxis. ►

DID YOU KNOW?

Cooking methods can also affect inflammation, so try baking, steaming or fast stir-frying your meals instead of deep frying or grilling. And don't forget to watch out for inflammatory condiments.



TOMATOES

NO

Foods in the nightshade family get a bad rap because they contain alkaloids, potentially toxic compounds that are likely there to help the plant ward off pests. "Inflammation may occur with extremely high doses of alkaloids, but the amount consumed through eating ripe and well-prepared nightshade vegetables is safe for most individuals," says dietitian Emily Sullivan. Research has also shown that the lycopene in tomatoes may protect against inflammation. Some people with arthritis do report improvement in their symptoms when they avoid these foods, so if you're among them, perhaps talk to your doctor about food sensitivities.



COFFEE

IT'S TRICKY

Coffee contains antioxidants with anti-inflammatory properties. However, you can quash these benefits if you drink too much of the caffeinated kind or if you add sugar or syrups, says dietitian Jackie Newgent, author of *The Plant-Based Diabetes Cookbook.*

FRIED FOOD

YES

Fried foods are high in toxins connected to inflammation. A new study in *Environmental Sciences* suggests that consuming a lot of these types of foods may produce inflammation in the brain that could cause anxiety and depression.

SMOKING

YES

One study comparing smokers with non-smokers found that smoking was connected with increased blood levels of CRP, fibrinogen, IL-6 and carcinoembryonic antigen – all markers of inflammation. And not just cigarette smoke is troubling – recent research found that even for healthy people, inhaling bushfire smoke could lead to inflammation and a risk of lung disease.

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HOW TO LOWER INFLAMMATION



1 PAY CLOSE ATTENTION TO WHAT YOU EAT

Certain foods make inflammation worse, and one way to investigate which trigger inflammation for you is to try an elimination diet, says dietitian Brooke Scheller, author of *How to Eat to Change How You Drink*. A nutritionist can guide you: You'll eliminate problematic foods, such as red and processed meats, sugar and fried foods, and track your symptoms for three weeks before slowly reintroducing foods to see if symptoms return.



2 PRACTISE STRESS RELIEF

Research shows that stress induces or worsens depression, neurodegenerative diseases and cancer through inflammation. Find stress-relief methods that work for you. Try meditating, turning off phone notifications, taking a warm bath or playing with a furry friend.



3 GET MOVING

A US study showed that exercise helped decrease muscle damage from chronic inflammation. Choose an activity you enjoy – walking, dancing, strength training, cycling – and do it a few times a week. Aim for at least 150 total minutes of weekly exercise.



4 SPICE IT UP

Turmeric has anti-inflammatory properties believed to help treat inflammatory bowel disease and arthritis. Aim for 500mg to 1000mg of turmeric daily – you can add it to smoothies, curries or eggs and, when possible, combine it with black pepper. "Some evidence shows that turmeric is more readily available in the body when paired with black pepper," Brooke says. Another spicy tip: "Boil slices of peeled ginger in water for 20 minutes; enjoy as a tea for the most potent benefits," she adds.



5 TALK TO A GP ABOUT MEDS

In some cases, non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen and corticosteroids like prednisone, may help manage chronic inflammation. They lower inflammation caused by overactivity of the immune system prompted by conditions like rheumatoid arthritis and lupus. ►