ANITA BEAN
Registered Nutritionist, Health Writer & Author

Coronavirus: How to support your health and training during Covid-19

I hope you are as well as possible during these difficult and unsettling times. Understandably, everyone is worried and wants to do everything possible to protect themselves and others from about catching Covid-19. Unfortunately, this fear around the coronavirus pandemic has given rise to all kinds of nutritional quackery, supplements and snake oil products claiming to 'boost' your immune system. Keto diets, vitamin C shots and herbal remedies are just some of the misconceptions I've seen touted.

I want to get one thing straight: there is no single food, nutrient or supplement that will 'boost' immunity or prevent you from catching Covid-19. There is no evidence that any particular diet is better than another for protecting you against the Coronavirus.

Please avoid any product using the terms 'immunity boosting' or 'COVID-19 protective' in its advertising. These are red flags for scientific quackery.

Can you 'boost' your immunity?

Enticing as it may sound, you don't want to be 'boosting' your immune system. An immune system which is 'boosted' or over-active can lead to problems such as allergies or autoimmune disease, and some of the more serious complications associated with Covid-10. Anyone peddling such advice does not understand how the immune system works.

The immune system isn't one thing but rather a sophisticated system comprising a complex network of cells (white blood cells), organs (e.g. lymph nodes), molecules (cytokines). It doesn't switch 'on' or 'off', rather it requires constant balancing.

A healthy and active immune system is critical to fighting off the Coronavirus. But instead of talking about 'boosting' immunity, we should be talking about 'maintaining' or 'supporting' immunity to avoid infection.

So, what can you do to protect yourself?

We should all be following the advice on the Government website and the World Health Organisation.

The best means of avoiding infection and spreading the virus are by washing your hands, avoiding touching the eyes, nose and mouth, and social distancing.

You can also build up your defences by strengthening your immune system. Some of the steps you can take include eating a healthy diet, taking regular physical activity and getting enough sleep.

If you are an athlete or regular exerciser, here are a few adjustments you can make now to your diet and training to support the healthy functioning of your immune system immunity during the lockdown.

Feed your immune system well

Deficiencies of certain nutrients can weaken your immune system. Ensure you're consuming plenty of foods rich in vitamins A, C and E, vitamin B6, zinc, iron and magnesium – nutrients that are vital to the functioning of the immune system. Focus on fresh fruit, vegetables, whole grains, lean proteins, beans, lentils, nuts and seeds, while limiting highly-processed foods.

But the greatest impact nutrition has is through its indirect link with immunity through the gut. That's because the gut is host to trillions of microbes that produce chemicals (such as short chain fatty acids) that play a key role in the body's immune response to infection and maintaining health. In fact, 80% of immune cells reside in the gut.

The best way to increase the beneficial microbes in your gut is by eating a wide range of plant-based foods, which are rich in fibre, and limiting ultra-processed foods. Eating a Mediterranean-style diet with plenty of fruit, vegetables, pulses, nuts, seeds and whole grains has been shown to improve the diversity of gut microbes and reduce inflammation. If you can't get fresh fruit and vegetables while self-isolating, then buy frozen, which are just as nutritious as fresh.

Prebiotics , found in onions, garlic, lentils, beans, asparagus and leeks, also provide 'food' for beneficial gut microbes so they can grow. Including fermented foods containing probiotics, such as live yogurt, sauerkraut and kefir will also help. For more tips on how to improve your gut health click here.

Focus on Flavonoids

Blue, purple, red and orange fruit and colourful vegetables are rich in flavonoids, which have antioxidant properties that help support immunity. A 2016 study showed that flavonoids play an essential role in the respiratory tract's immune defence system.

Fewer long hard sessions

While regular moderate exercise lowers your risk of infection, more is not necessarily better. Many studies show that long, hard, continuous sessions (over 90 minutes) can temporarily lower your resistance to infection. However, these results have been thrown into question as they are based on self-reporting and collected at mass participation events where post-race infection risk was high. Researchers suggest that immune cell numbers do not fall, as once thought, rather they are re-distributed in body. I don't think you need to avoid long, hard sessions completely but, given the current circumstances, it would be wise to do fewer.

Train smarter, not harder

According to Dr David Nieman, a pioneer in the research area of exercise immunology, running at greater than 60% of your $VO_{2\ max}$ for longer than 60 minutes lowers immunity. He suggests following this handy rule of thumb: run less than 60 miles a week, mostly at low intensity (60% of max VO_2 corresponds to 75% of max heart rate), for less than 60 minutes at a time.

Carbohydrate before, during and after long sessions

If you're doing workouts > 60 min aim to take in 30–60 g carbohydrate per hour. Carbohydrate can reduce stress hormone levels and the associated drop in immunity following exercise. Training with low glycogen stores is associated with bigger increases in stress hormone levels and greater suppression of your immune cells.

Include some form of resistance exercise

If you're training at home, you don't need weights. Simple bodyweight exercises such as squats, press ups and lunges give similar benefits and will also increase/ preserve your muscle mass and strength. Exercise bands, simple circuits, ashtanga yoga, pilates count too. One session every other day has been shown to be an effective countermeasure against muscle loss.

Aim for 7 to 9 hours sleep each night

Lack of sleep depresses the immune system, making you more susceptible to illnesses and infection. During sleep your body produces anti-bodies and cytokines, proteins that co-ordinate your body's response to infection and inflammation. One study found that getting fewer than 6 hours sleep a night can quadruple your risk of catching a cold.

Here are 10 evidence-based recommendations from a research paper by Professor Neil Walsh to avoid infection and maintain immune health

1. **Try to avoid sick people, particularly in the autumn-winter**
2. **Ensure good hand hygiene and appropriate vaccination**
3. **Avoid self-inoculation by touching the eyes, nose and mouth**
4. **Do not train or compete with 'below-the-neck' symptoms**
5. **Monitor and manage all forms of stress including physical and psychosocial**
6. **Carefully manage increments in training stress**
7. **Replace overly long training sessions with more frequent spike sessions**
8. **Plan recovery or adaptation week every second or third week**
9. **Aim for at least 7 h sleep each night**
10. **Eat a well-balanced diet and avoid chronic low energy availability**