

# Boosting the Immune System

Infections are one of the most common reasons people visit their GPs. Children, especially, are regular attenders with infections. Recurrent infections are all too common. Most of these illnesses can be avoided by taking some key supplements.

## Preventing Infections

I think the two most important supplements for prevention of infections are Vitamin D and Zinc. Vitamin D is critically important.

## Vitamin D 2-5000 iu daily

Infections are far more common in the winter months. There is a reason for this. In winter we don't get enough sunshine and our vitamin D levels drop down too low.

This is a problem because vitamin D is essential for an effective immune system.

To prevent infections, you need to have your vitamin D level near the top of the normal range (which is 75 to 150nmol), ideally above 125 nmol/l.

This was confirmed dramatically during the Covid epidemic. A large study by Kaufman of 190,000 people admitted to hospitals in the USA with Covid found that the lower the vitamin D level the greater the risk of serious disease. This was nothing new, as many other studies had found the same, but what was surprising was the amount of vitamin D needed to stay safe. **He found those with levels of 125nmol/l had half the risk of those with levels of 75 nmol/l.** (PLOS One doi.org/10.1371/journal.pone.0239252).

Those with dark skin typically have much lower levels of vitamin D as do those who spend most of their time indoors (such as care home residents). These groups did particularly badly during the Covid pandemic.

You might wonder what your level of vitamin D is. **The average in the UK is 65nmol/L. This means the immune system is working sub optimally in most people. That means you are likely to have a low level.**

However, Vitamin D doesn't just help prevent colds and Covid, it reduces the risk of every infection.

A meta-analysis of 43 studies by Joliffe in 48,000 people found that those who took vitamin D had less infections. The improvement was modest but the amount of vitamin D being taken was miserly (400 to 1000 iu). Research by Heaney found that 400iu of Vitamin D will only increase blood levels by 7 nmol/l - not

enough to get most people in the UK into the normal range, never mind to an optimal level)

Another study looked at children under one year of age hospitalised with RSV infection. They found 17.5% (of 125 children) developed life-threatening disease (LFD). This means they needed ITU and ventilatory support.

You might wonder which kids developed life-threatening disease? Was it those with the highest viral load? No, this made no difference. **However, those who developed life-threatening disease had significantly lower serum Vitamin D** (average 45nmol/l) whereas those who didn't have LFD had a much higher Vitamin D (average of 79nmol/l). In fact, 59% of infants with LFD had a Vitamin D level below 50nmol/l.

The authors say this provides additional evidence for the development of preventative strategies. *J Infect Dis, 2022 Feb 1;jiac033. doi: 10.1093/infdis/jiac033*. In other words, Vitamin D is an essential preventative strategy.

What dose should you take? I take 4000iu daily. For adults taking 5000 iu daily for 2 weeks and then 2000iu daily may be enough, but not always. Ideally check your vitamin D blood levels to make sure they are near the top of the normal range (near 150 nmol/l). For children use 2000 iu daily (1000iu for children under one). In summer you may not need Vitamin D supplements. But if you are indoors a lot (and most people are) take 1000 iu daily in the evening (so you don't lose the benefit of the sunshine).

It is no good taking Vitamin D just when you develop an infection, because it can take one to two weeks before it is converted to the active form, so you need to take it regularly.

Doses of up to 10,000 iu are safe (exposure to sunlight in a swimming costume on a hot day for ½ hour can produce 10-20,000 iu of Vitamin D)

Apart from vitamin D, sunlight itself stimulates the thymus gland, which is crucial for immunity. Sunlight also increases white cells, particularly lymphocytes.

## **Zinc**

**Zinc is crucial to both the humoral and cell-mediated immunity and has specific anti-viral effects.** The immune hormone thymosin contains zinc.

In one study by Prasad in 2007, a group of people aged 55-87 were given either zinc 45mg daily or placebo for one year. Those given the placebo had three times as many infections and needed six times as many antibiotics.

Use zinc 30-50mg daily; it is best taken in the evening. After 1 -2 months reduce to 15mg daily (use this dose for children).

## **Copper**

Copper and zinc work together and are both needed for a sound immune system. We know that 70-80% of the population are low in copper. Unfortunately, it is difficult to measure copper and difficult to supplement.

To give some idea of the importance of zinc and copper, a study of children with septicaemia looked at nutrient deficiencies (zinc, iron, magnesium and copper). Hospital infections were higher in children who were deficient in zinc and copper. Mortality increased as nutrient deficiency increased. Those with zinc deficiency had longer hospital stays. Children who had complete recoveries has less nutrient deficiency.

<https://www.ijpediatrics.com/index.php/ijcp/article/view/640>. See the leaflet on copper for more information.

## **Other Nutrients**

If possible add:

EPA Fish oil 1000-2000mg daily

Vitamin C 2-4 grams daily (not at same time as zinc)

A multivitamin/Multimineral complex

Although the above nutrients will help resolve many problems, there are other crucial nutrients for immunity. **Selenium stops viral replication** so a deficiency could cause problems. It is important in chronic viral infection and boosts neutrophil numbers and natural killer cells.

Essential fats, (see Fats: the Good and the Bad leaflet) are important in infections and critical in post-viral illnesses (which seem to be getting more common).

**Remember the body has staggering abilities to combat infection, providing it has the right building blocks. It can produce 200,000 immune cells in a single minute.**

## **Immunity and the Gut**

(85% of our immunity comes from our gut).

Take these 2 studies: one study found taking a daily probiotic (bifidobacterium) in children aged between 3 and 6 reduced coughs and colds and the other infections; the other study, a meta-analysis of 8 studies, showed a daily probiotic (with lactobacillus and/or

bifidobacterium) reduced respiratory infections in adults and children.

However, I think if you take a probiotic and don't feed the bugs you are likely to be wasting your money. You need to feed the good bugs (with vegetables, low-sugar fruits, nuts, seeds) and stop the sugar and processed foods (and antibiotics) which either damage the good bugs or feed the harmful bugs.

**Whereas vitamin D and zinc are critical for the prevention of infections, if you should develop one, you need vitamin C and at a high enough dose.**

### **Dealing with Infections**

**High dose vitamin C is the most important remedy.**

**Take Vitamin C 1-2 grams every 2-4 hrs (up to 80-90% of bowel tolerance where the stools become slightly loose and then reduce slightly. Usually this happens at 10-15 grams vitamin C but more in a severe infection). See Vitamin C leaflet for more details.**

After this, use 2 to 4 grams daily

The best way to take high dose Vitamin C is to use **Vitamin C powder**. However, it has a strong taste. Chewable tablets (500mg or 1 gram) are an option though these supplements are a poorer quality. They are a good option for children.

**Dr Robert Cathcart said he has not seen any flu that has not been cured or markedly ameliorated by massive doses of Vitamin C. The Vitamin C leaflet gives evidence that it is highly effective in sepsis.**

**Beta-glucans**, which are derived from the cell wall of fungi, yeast, and grains, can help during infections and to protect against infections. Use from 70 -150mg daily.

Taking **Echinacea** can help or the more expensive but probably more potent **Olive leaf extract**.

**THE BEST PLACE TO GET THESE SUPPLEMENTS IS A HEALTH FOOD SHOP. CHEMISTS ALMOST NEVER STOCK THEM.**

### **Dietary Considerations**

**Sugar can double the number of bacteria in 20 minutes.** It also reduces the body's ability to engulf bacteria and viruses by

about 50% and this effect can last 5 hours. It also competes with vitamin C. Anyone with an infection or recurrent infections needs to be on a diet which is very low in sugar and refined carbohydrates (bread, cereal, white rice, pasta) until they have fully recovered. Children's food is particularly high in sugar (cereals, soft drinks, fruit juice, yoghurts and confectionary) and reducing these makes a real difference.

### **Increase fruit, vegetables, nuts & seeds**

*(one group of pre-school children who ate one kiwi fruit a day reduced the number of infections by nearly half)*

**Increase daylight/sunlight exposure** – known to boost immunity.

**Increase Exercise** (but not during infection). Exercise makes the lymphatic system more efficient.

### **Another Tip**

Here's a study that's been buried in the medical journals since 1944. 112 patients with cold were given cod-liver oil (containing 150,000 units Vitamin A and 15,000 units Vitamin D) on the first day and a third of this on the second day. If symptoms remained two-thirds of the original dose was given on the third day. After 24 hrs 30% were symptom free and 52% almost free – that's 82% virtually cured in 24 hours. No adverse effects were seen. I understand this regime has been used successfully in nutritional clinics since then.

Most cod-liver oil these days has much lower levels of Vitamin A or D so usually extra supplements of these would be needed to reach these levels today.

NOTE: this amount of vitamin A is not suitable for pregnant women.

### **Thymus Tapping**

The key organ controlling immunity is the thymus gland which lies under the sternum (breastbone). Thymus tapping involves tapping in the middle of the sternum which stimulates the gland. Tap with four fingers, enough to cause a gentle vibration. Try 10 taps daily as a preventative, going up to 60 three times daily during infections.

No studies exist on this, but it costs nothing and is worth trying.

