

# Coronavirus – what are your options?

Patrick Holford    March, 2020

Coronavirus – what are your options? Obviously, not getting it is step one so all that hand cleaning advice is good. But what if you get it? Essentially, there are three potential options: anti-viral drugs, vaccines and high dose vitamin C plus other nutrients. Let's start with the vaccines and drugs just to put other approaches in context since this is what mainstream medicine is likely to recommend.

**Vaccines** – don't hold your breath. It has taken about five years to develop effective vaccines. An Ebola vaccine is only now going through safety trials, five years after the outbreak. Experts say, if this could be shortened to two years that would be a miracle. The trouble is safety trials take a while. Pandemrix, the 'swine flu' H1N1 vaccine, is a case in point. It was linked to a jump in cases of narcolepsy, a rare sleep disorder, in children and young people.

According to an article in the British Medical Journal "*Multiple academic and government led studies subsequently judged that the relation between Pandemrix and narcolepsy was likely to be causal*". This worry of litigation makes drug companies scared about jumping in too soon. British government have pledged £20 million to help develop a vaccine but, assuming it works and doesn't have dangerous side-effects, will it be too late? Almost certainly for this outbreak.

Vaccines work by teaching the immune system to make antibodies against a specific virus such that when exposed the immune system kicks in faster. Flu vaccines have variable effectiveness, sometimes as low as 10%. This can be due to the selection of strains. The lesson from this is that viruses can mutate so a vaccine developed against this strain of coronavirus may not work, or work so well, against another mutation.

**Drugs** – the most well known are amantadine, zanamivir and oseltamivir (Tamiflu). They work, apparently, and are being given to most infected with coronavirus, but they have some pretty bad side-effects that makes the risk/benefit equation to immune compromised patients questionable.

An investigation by the UK House of Commons Committee of Public Accounts in 2014 concluded "*There is a lack of consensus over how well Tamiflu works, in particular whether it reduces complications and mortality.*" The Department of Health spent £424 million on stockpiling it.

A 2007 Cochrane Review, in relation to children, concluded "*Neuraminidase inhibitors are effective in shortening illness duration in healthy children with influenza, but efficacy in 'at risk' children remains to be proven.*" Oseltamivir is also effective in reducing the incidence of secondary complications, and may be effective for influenza prophylaxis.' Zanamivir and oseltamivir are 'neuramidase' inhibitors. When viruses enter cells they use a protein called neuramidase to break out and infect other cells. Vitamin C is also a neuramidase inhibitor.

In a cell study, a multi nutrient mixture, high in vitamin C (*green tea extract, lysine, proline, N-acetyl cysteine, selenium*) outperformed this drug when tested on Asian bird flu (A/H5N1). Here's the conclusion of this study: "*NM(nutrient mixture) demonstrated high antiviral activity evident even at prolonged periods after infection. NM antiviral properties were comparable to those of conventional drugs (amantadine and oseltamivir); however, NM had the advantage of affecting viral replication at the late stages of the infection process.*"

**Vitamin C** – the good news about high dose and IV vitamin C is that it is already well established to be remarkably safe so, effectively, it has no downside. We won't know for sure how effective it is (*same applies to drugs currently given and non-existent vaccines*) until we have the results of trials specifically on the coronovirus, but three trials are underway – two

on IV vit C, one on 8 grams versus 4 grams of oral vitamin C daily in less severely infected people.

Vitamin C has many modes of action, including neuramidase inhibition and interferon production. It also enhances the maturation of t-cells needed for an immune response, and phagocytes which attack and neutralise viruses. There is no virus yet tested that isn't significantly compromised in a high vitamin C environment, hence the need to have high oral or intravenous doses during an acute infection.

Doctors in China are already being encouraged to give IV vitamin C (*24 grams a day*) for those with serious respiratory conditions similar to pneumonia on the basis that they have already seen some remarkable recoveries in those not expected to recover.

Why does UK government not encourage UK doctors to do the same thing? It's cheap and safe. If in doubt, why don't they put some money into this, as they have done for vaccines? After all, this highly effective nutrient is unpatentable, hence insufficiently profitable for big pharma to touch, so research funds are badly needed. Vitamin C, unlike vaccines, is available now to speed up recovery from the coronavirus and possibly stop it spreading as a preventative if enough people took 2 grams a day in divided doses.

Personally, I think it is unethical and immoral not to be giving those with potentially fatal virally induced pneumonia intravenous vitamin C, which has no significant downside and could potentially save lives, as it is doing in China.

I have always recommended 1 gram of vitamin C an hour at first signs of any viral infection. Anyone can do this with the greatest downside being loose bowels. It is also worth taking 2 grams of vitamin C every day, six hours apart, as this has been shown to shorten and reduce the severity of viral infections, but be sure to increase this amount if under viral attack, ideally also taking in zinc and black elderberry, which also have well established anti-viral effects

I've written about this in a previous blog (<https://www.patrickholford.com/blog/can-vitamin-c-combat-coronavirus>) so I won't repeat here. Black elderberry works by blocking *haemagglutinin*, which sticks out on viruses and allows them to enter cells. Zinc, like vitamin C, enhances immune system action so strengthens the immune system response.

Vitamin D is also important as it [modulates the immune system](#). The majority of immune cells have a vitamin D receptors and some viruses turn this down. This may be a major reason why viruses can take hold in the winter. So make sure your vitamin D level is above 50nmol/l, ideally higher. You'll need to be supplementing at least 15mcg (600iu) on a regular basis to achieve this but can top up levels for a month with 25mcg (1,000iu) a day, or seven times this amount, taken once a week as it stores. Expose yourself to sun whenever you can.

Most viruses thrive on a high glucose environment. If you go ketogenic (all cells can run on ketones generated from fat) and autophagic that's likely to be a big help. *Autophagy* is a cellular clean up programme that targets and gobbles up microbes such as viruses, that is triggered by fasting. In fasting you become ketogenic as your body switches to burning (body) fat. My 5 Day Diet (new book out in May) describes a five day diet, much easier than fasting, that switches on autophagy, is ketogenic, and is very high in immune supporting nutrients. It's another option to consider. I'm running a 5 Day Diet Retreat on May 15th in the Black Mountains of Wales, to teach people how to do this. I'll also be given a talk in London about this on May 28th. See [www.patrickholford.com/events](http://www.patrickholford.com/events) for more details on these.