

Some speculation about the possible roles of zinc in this COVID-19 pandemic.

Zinc deficiency is quite common and may be a contributing factor in the severity of COVID-19 cases, perhaps particularly with people who are malnourished in developing countries, and older men in developing countries as well.

In Dr. Roger Seheult's Medcram videos (updates 32 and 34) he discusses how intracellular zinc inhibits the ability of this virus to replicate itself. He explains that for zinc ions to enter the cells an ionophore such as hydroxychloroquine is needed, and goes on to suggest that our dietary intake of zinc may not result in much of an increase in intracellular zinc, we should nonetheless avoid being deficient in zinc. In update 36 he also mentions quercetin as a possible ionophore, which can be ingested by eating certain plants, e.g. onions, kale, blueberries etc., or as a tablet supplement (or perhaps both). For people who may react adversely to hydroxychloroquine, quercetin could be a safer alternative.

In the video "Bad science or worse?" Dr. Chris Martenson of Peak Prosperity, points out that some of the clinical trials of hydroxychloroquine are badly designed because they don't include zinc, and hydroxychloroquine may be administered too late to do any good, or both. Zinc appears to play a critical role and is not something that can be left out. It seems obvious to me that the moment a patient shows symptoms of COVID-19, they should receive zinc supplementation and where appropriate, hydroxychloroquine, or an alternative ionophore, as soon as possible. Zinc supplementation could be stopped later if tests show a patient has sufficient zinc.

Zinc deficiency and age

There is a clear trend where older people tend to be affected more severely by this disease. People tend to eat less as they age and so they take in less zinc. In addition, the ability to digest and absorb nutrients from food decreases with age. The two combined can easily result in zinc deficiency, which could possibly be a contributing factor to disease severity.

In Western countries we have been told for decades that we should follow the food pyramid, which promotes eating lots of grains and grain products such as pasta, and eat much less meat, but red meat is high in zinc and grains are low, so this is a problem in terms of getting the RDI of zinc. Grains often contain phytates which bind with zinc so that the already limited amount of zinc in grains cannot be absorbed. This may have implications in China, with the high consumption of rice, and in India, where people are commonly vegetarian, and eat rice in the South and wheat in the North, and Italy with little meat and lots of pasta. In Africa, poverty results in not enough food, and disproportionately high consumption of maize and sorghum, but less of the more expensive meat.

Food may also be lower in zinc than it used to be. Applying phosphate and lime to soils can reduce the availability and uptake by plants. Increasing salinity is also a problem, and also wet soils (rice in Asia). In general, agricultural production tends to aim for high yields and profits achieved with NPK fertilizers, rather than high nutritional status across all the micro nutrients, including zinc. Repeated cropping also tends to deplete soils of nutrients over time.

Zinc deficiency and men

Men lose approximately 5mg of zinc every time they ejaculate, and their RDI is 11-14mg (integratedmenshealth.com.au). Therefore sexually active men on certain diets are both getting less zinc from their food, as well as losing zinc that they can ill-afford to lose. Modern societies around the world are also highly sexualised, and so men may be losing more zinc than they did in former times. Some cultures also esteem machismo/virility (China? Italy? France? Spain?), so that men may feel pressured to be more sexually active than they would actually like to be, and some older men may want to prove to themselves or others that they are still as virile as when they were younger.

The combination of some or all of these factors may result in significant zinc deficiencies, especially in older men, and hence perhaps a higher severity and fatality rate for older men with COVID-19.

Possible practical solutions

Taking zinc supplements and/or eating foods higher in zinc, as well as reducing the consumption of grains, bread, and pasta, could reduce the severity of COVID-19 for many people.

Patients who are admitted to hospital who have optimal or perhaps even elevated levels of zinc in their bodies would be primed for treatment with hydroxychloroquine, possibly resulting in a shorter hospital stay and a milder case of COVID-19, taking pressure of the health care system. If most of the world's population could increase their intake of zinc, perhaps along with quercetin, this could possibly result in fewer and milder infections, and fewer deaths.

If there is any validity to any of this, then it should be cost-effective to mass produce such tablets containing both zinc and quercetin for use around the world, perhaps freely available in the developing world, and subsidised to high risk demographics in the developed world.

Prevention is better than cure. And cheaper.