Everyday ways to combat COVID-19

written by Dr. Ronald Hoffman | April 29, 2020

It appears that, for better or worse, we're emerging from lockdown. We've "flattened the curve" and hospital admissions and deaths are declining. Americans are champing at the bit to normalize their routines and undertake damage control over a badly wounded economy.

In the absence of a vaccine or definitive Pharma therapy, we're going to need to accept higher levels of personal risk. I've talked a lot about natural mitigation strategies—you can find a compendium of my articles about COVID-19 here. Staying metabolically fit is clearly your main bulwark against coronavirus complications.

Here are some intriguing potential fixes that I'd like to add to my previous communications—many of which may already be in your pantry or medicine cabinet:

Nicotine: From the earliest days of the pandemic in China, it was anticipated that smoking would prove a risk factor for COVID-19; After all, mortality was skewed toward men, and cigarettes are still prevalent in China—especially among males. It was even speculated that the surprising incidence of COVID-19 among young U.S. Millenials was a reflection of the prevalence of vaping.

But that theory went up in a puff of smoke: retrospective analysis of serious illness and death showed smoking didn't up risk. Which is so counterintuitive—after all, doesn't smoking damage the lungs and impair defenses?

The solution to this paradox may lie in the unique pharmacological properties of nicotine. According to French researchers, *"the nicotinic acetylcholine receptor (nAChR) plays a key role in the pathophysiology of COVID-19 infection and might represent a target for the prevention and control of COVID-19 infection."*

They've even initiated a trial of the nicotine patch as preventive against the coronavirus. This in no way exonerates cigarette smoking as a cause of heart attacks, strokes, cancer and pulmonary disease. But, while addictive, nicotine delivered via a patch, gum or lozenge has shown potential for slowing cognitive decline, without the deleterious effects of all the toxic

chemicals in cigarette smoke.

Celery: Based on the nuanced analysis of a trusted source, Dr. Leo Galland, the *furin* pathway is a likely target for inhibiting the coronavirus. Luteolin is a natural product that has been demonstrated to downregulate furin, with a proven antiviral effect. Luteolin has previously been touted as a natural histamine-blocker, by curbing overexuberant mast cell activation.

Luteolin is found in thyme, green peppers, and chamomile tea, but especially in celery. It's also available in supplements, like the popular histamine-blocker *Lutimax*.

Celery juice is healthful and refreshing, and is an ingredient in a vintage fizzy drink, *Dr. Brown's Cel-Ray Soda* a nearly-forgotten mainstay of Jewish delicatessens.

Air purifiers: Prior to the coronavirus pandemic, we New Yorkers didn't think twice about cramming into crowded subways, commuter trains, buses and elevators, attending concerts, theaters and sports events, or visiting museums and art galleries. We stood in line at Trader Joe's and Whole Foods with no thought of social distancing. We worked in large offices with open floor plans, usually without windows to maximize energy efficiency.

No more. We're now rightly concerned about the air we breathe, which may harbor a miasma of suspended viral particles, viable and transmissible for hours. Even when the restrictions are lifted, I'll be wary of jumping into a crowded subway car, going into a department store, flying in a plane or attending an event.

But there's a fix, and it's going to require a massive retrofitting of our public spaces with virus mitigation technology. It turns out that the old adage "Sunlight is the best disinfectant" is true. Some form of UV light disinfection may be incorporated in HVAC systems—it's already a feature of some high-end central air systems for homes.

Other new technologies may be invoked, like "bipolar ionization". I think there's going to be Manhattan Project-style race to validate some of these measures in the coming months and years, with a huge potential for growth in this sector. I bet private equity investors are already queuing up to harness the upside of these start-ups.

Black Tea: Green tea gets all the buzz these days, but it's black tea—the ordinary kind—that's the richest source of theaflavins, which have documented antiviral properties. A recent analysis said of this ingredient of black tea: *"Our results suggest that theaflavin could be used as a lead compound for developing a SARS-CoV-2 inhibitor."*

Chocolate: OK, I must confess a bias here—I love to justify my weakness for a few squares of dark chocolate daily with the latest scientific substantiation. Cocoa is one of the richest natural sources of PEA (phenylethanolamine). PEA turns out to possess substantial activity against respiratory viruses. The authors of a recent review conclude: *"Given the*

results of 6 clinical trials in flu and the common cold . . . PEA should be reconsidered by clinicians as a new treatment modality for the flu and respiratory infections due to its documented efficacy and more importantly its very benign side effect profile."

Nitric oxide: Known for their circulatory benefits, dietary nitrates are potent generators of nitric oxide (NO). Beets, arugula and spinach are rich dietary sources of NO precursors; concentrated supplements like Berkeley Life are a convenient way of supporting NO levels. A review of NO's role in immunity shows that it *"regulates the functional activity, growth and death of many immune and inflammatory cell types including macrophages, T lymphocytes, antigen-presenting cells, mast cells, neutrophils and natural killer cells."*

Nicotinamide Adenine Dinucleotide (NAD+): Since the advent of Covid-19, I've speculated about the possible role that NAD+ might play in helping to defend against the coronavirus. After all, NAD+ is required to activate PARPs and sirtuins which are important to our first line immune response. A recently published article affirms there is a marked decline in NAD+ when viral infection occurs: *"Our data indicate that viral infection significantly depresses the NAD metabolome, which is likely to invoke significant stress on cells . . . and that interferon-mediated collateral tissue damages may be prevented by nutritional or therapeutic support."* This steep decline occurs just as the demand for NAD+ to support reparative mechanisms increases.

With the information on COVID-19 ever-evolving, I wouldn't be surprised if we continue to make hopeful discoveries. Stay tuned to this space for the latest, and don't forget—you can find all of the *Intelligent Medicine* coverage on our COVID-19 hub page.