How your diet can help flatten the curve

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*(CNN)*The Covid-19 coronavirus is disrupting almost every aspect of our lives in the US and across the world. As we face this daunting new challenge, it's important to assess and bring to bear every tool we have in our arsenal to reduce infections, deaths and suffering from this outbreak.

Social distancing, hand washing, and quarantine can "flatten the curve." But what role can food and nutrition play? We believe there are at least three important ways diet can help alleviate the public health crisis.

First, higher intakes of specific nutrients appear to boost the immune system, while low intakes lead to less effective immune responses and higher susceptibility to infection.

Stronger immune systems can help people fight the virus, and may help keep some patients out of the hospital, leaving room for those in most dire need. Nutrients that may help the immune response include micronutrients like zinc, selenium, iron, and vitamins A, C, D, E, B-6,

and folate; with additional potentially promising effects of whole foods like goji berry, broccoli, green tea, and turmeric.

Some of these nutrients may help to reduce excess inflammation and tissue damage caused by the virus that can lead to severe lung injury and failure and even death.

It is too early to know what cocktail of nutrients is the best to counter Covid-19. But we do know that several of these nutrients have shown promising effects for common colds, influenza and other respiratory infections. With many restaurants closed, take this opportunity to eat healthy foods at home like: citrus fruits, berries, broccoli, spinach, mushrooms, red bell peppers, sweet potatoes, shellfish, beans, almonds, hazelnuts, peanut butter, turmeric and tea. These foods may be especially important in older adults, who often eat less of these nutrients and are more at risk of dying of Covid-19.

Even a small decrease in risk from healthier eating could make a difference on a national scale.

Second, experience from other infectious disease outbreaks makes clear that malnourished individuals have a higher risk of becoming ill, a longer duration of illness, and greater risk of death. In the current crisis, feeding people who are at risk is even more important. Due to insufficient household income, nearly 30 million US kids currently receive free or reduced-price lunch and nearly 15 million kids participate in the country's School Breakfast Program. For many children, this accounts for nearly 50% of their daily calories.

With schools appropriately shutting down over the coronavirus pandemic, this critical lifeline of food is gone. At the time of writing, 124,000 US schools are closed or scheduled to close, affecting nearly 55.1 million American kids in public and private schools. Local school districts and charities are scrambling to find alternatives to get meals to kids, but the logistics are daunting. Food insecurity will be worsened by the tremendous loss of wages and jobs from shuttered businesses. We must find a way to keep those vulnerable to hunger fed for the duration of what could be a lengthy battle against this virus.

Finally, beyond older age, risk of severe Covid-19 illness and death are highest among people who have other conditions, such as cardiovascular disease and diabetes. These conditions weaken the heart's ability to handle stress, while diabetes also weakens the immune system. Both cardiovascular disease and diabetes are linked to chronic, low-grade inflammation throughout the body -- which could predispose Covid-19 patients to the severe excess inflammation that contributes to lung failure and death. This intersection of risk is deeply concerning. A 2019 report by the American Heart Association estimates that 121.5 million adults -- more than half of the US adult population -- had some form of cardiovascular disease. And 114.4 million adults -- nearly half of the US adult population -- have diabetes or prediabetes.

Beyond the measures we are taking to fight the virus in the short term, we must also reduce the long-term impacts. Preventing and lessening the severity of existing cardiovascular disease and diabetes should be a key tactic. Among different risks and preventive approaches for these diseases, nutrition tops the list: A recent multi-investigator study estimated that about 45% of all cardiovascular disease and diabetes deaths are directly attributable to poor diet. Even without Covid-19, another recent study estimated that poor diet kills about 530,000 Americans annually

-- or nearly 1,500 deaths a day. Increasing consumption of healthy foods is among the priorities for reducing cardiovascular disease and diabetes in the US. Creating a healthier food system through government, business, healthcare and consumer actions must be a top priority for our nation's health now and in the future.

The coronavirus outbreak is a humbling reminder of the fragile state of the human condition in our world. No one solution will be enough. We will need to combine general public health strategies like hand washing, social distancing, staying home if ill or debilitated, and a national testing program available to anyone who needs it, together with effective medical care and drug treatments for those who fall ill.

But that won't be enough.

We cannot fully contain Covid-19 at this point, so we must face it head on and bring every tool we have to bear against it -- from support for the hungry, to better nutrition, to scientific endeavor seeking drug treatments and vaccines. And we must be prepared to do this for years to come. Food and nutrition are key elements that can't be neglected. Aiming to eat healthier to boost the immune system, addressing urgent new food insecurity with a comprehensive national plan, and building a robust national strategy to shift the food system to address cardiovascular disease and diabetes are complementary actions to help overcome this crisis.