

Do you want to eat turkey or be the turkey: Reflect on this before you host a large gathering for Thanksgiving

My blog posts around Thanksgiving are predictably dull: [Turkey Genetics 101](#), [The Peaceable Genomes of Pumpkins](#).

But 2020 is like no other year. Humanity is at war with the novel coronavirus SARS-CoV-2.

Images of overwhelmed hospitals and mobile morgues that dominated reporting from New York City in March are now coming from everywhere.

A [mutation](#) that's entered the US a few times from Europe doubled transmission rate without affecting severity, which is one reason why the percentage of fatal cases has fallen. Still, it's a huge absolute number, because of the fact that nearly 12 million Americans (as of today) have been infected. More than a quarter of a million [have died](#).

And yet, some people still deny reality. Nurses tell of patients on their deathbeds still insisting that the pandemic is a hoax, that they're suffering from something else.

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90-year-old man wearing full PPE to say goodbye to his wife. Credit Scott Hooper/TMX

A Dangerous Meme

Another way to deny reality is to go ahead with traditional Thanksgiving plans that include a large indoor gathering. Physicists have shown us depictions of how virus-laden clouds hover over a table with people crammed in, laughing, shouting, sharing utensils and dishes.

That's why a meme circulating on Facebook right now that minimizes the threat of large holiday celebrations stunned me:

"Before you cancel Thanksgiving and Christmas with your loved ones, remember that this may be the last holiday you have. We are not guaranteed a single minute on this earth. Stop living in fear and embrace life to its fullest."

The meme is deliberately vague, big on emotion and lacking verifiable facts, as memes tend to be. That's why I never post them. But this meme makes an important point: social isolation carries great risks too. For a more refined analysis of the dueling risks, see "[Demanding Thanksgiving Abstinence is not Public Health – The Problem, and solution, are more nuanced](#)" by Vinay Prasad, MD, MPH.

By now we know, or should know if we're paying attention, the consequences of ignoring public health recommendations, if that is indeed what "stop living in fear and embrace life to its fullest" means. That final phrase can mean anything.

If many groups larger than the limited pods we've all been stuck in for months gather to celebrate next Thursday, we'll soon see the predictable consequences: the now-familiar undulations of spikes in the following days, unfolding according to a well-defined schedule – positive tests, sickness, hospital admissions, deaths. Wave after wave. Christmas will be worse, because people of one religion will put others at risk.

The grossly oversimplified meme, and the fact that people are defending it and re-posting it, compels me to use this platform to support the many infectious disease and public health experts coming forward to urge the cancelling of Thanksgiving indoor, shared feasts. Even restricting celebrations to a few people in one's "pod" who believe they've had no contact with a person who has tested positive is not risk-free.

Dr. Fauci's and Joe Biden's Views

The experts are trying to set examples, as they have all along. When politics intervened, too many people stopped listening, if they ever had.

Anthony Fauci, MD, director of the National Institute of Allergy and Infectious Disease, is thankful that his three daughters will not be coming home for Thanksgiving. They're staying away to protect their parents. He said in a October 28 JAMA webinar:

"I don't want to be the Grinch, but I think a family group or individual has to look at the risk for the particular situation. If you have people in the family group that otherwise would have been there for Thanksgiving – the elderly, individuals who are compromised because of underlying conditions – you might want to take a couple of steps back and ask, is it worth it for this year to bring those people together when we don't know the status of everyone in the pod? I'm concerned about not doing that, because if we look around the country now, many infections are in small groups.

Last night I called people in the trenches, all over, and asked 'what are you seeing in the community?' They're seeing innocent family and friend gatherings, of 6, 8, 10, in someone's home. They get one person who is asymptomatic and soon 4 or 5 people are infected. If in a situation there are people who are vulnerable and you want to be safe, don't bring them together in a big gathering where there is possibly high risk of infection."

President-Elect Joe Biden echoed Dr. Fauci's words on November 16.

"I strongly urge if we have Thanksgiving with anyone that we minimize to 5 to 10 socially-distancing people wearing masks, and people who have quarantined, narrowing down family

members who have been tested within 24 hours. For the sake of your children, mothers and fathers, sisters and brothers, there should be no group with more than 10 people in one room in a home. Let's save lives! I want to be sure that we'll be together next Thanksgiving."

Here's further expert guidance on small gatherings from the [WHO](#) and the [CDC](#). Medical journals are posting similar warnings.

I'm not in favor of police knocking on the doors of homes with too many cars in the driveway next Thursday and hauling granny out the door. Instead, we must rely on each other, on what we know about how the virus is transmitted and what it does. Willful ignorance, as the meme urges, can kill people. So ditch the emo memes and read some facts.

Invading the Body and Propelling Its Self-Destruction

You lean over the mashed potatoes a few seconds too long, maybe deciding on gravy, when someone nearby wearing a loose mask, or none at all because he's in your "pod," suddenly laughs. Or belches. You breathe in the expelled air, only for a moment. But it could be enough.

If you haven't whiffed in too many SARS-CoV-2 particles, the virus might stay in your nose and throat for a little while, causing maybe a dry cough, fever, minor aches, and perhaps alteration of taste and smell in the days to come. Or it may travel downward, binding with its triplets of spike proteins to ACE2 receptors on cells in various body parts.

Wherever it ends up, the virus at its worst causes "a ferocious rampage through the body, from brain to toes," according to an article in [Science](#) and a nice infographic from [The New York Times](#), "In the Fight to Treat Coronavirus, Your Lungs Are a Battlefield." These cases are rare, but violent. We've all seen the images by now.

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Or the virus may take another initial route. If swallowed virus survives stomach acid, it may bind enter cells lining the intestines. The viruses rapidly replicate, causing loss of appetite, diarrhea, vomiting, and abdominal pain, perhaps permanently damaging the stomach and the intestines.

In the lungs, viruses exert a double whammy on the respiratory tissue as well as on the blood supply. They enter cells that line the interiors of blood vessels and that form the entirety of the tiny capillaries that snake everywhere. A cascade of immune responses ensues that can be deadly, culminating in the dreaded "cytokine storm" and helter-skelter blood clotting.

Some cells die outright. As they contract, the blood vessels that they form leak. In response to the unleashed biochemical signals, immune system proteins called complement flood the disturbed area, ushering in an initial tide of inflammation.

Meanwhile, intact blood vessel lining cells attract white blood cells that emit an unstable form of oxygen (free radicals) that harm DNA.

Yet other immune defenses, the cytokines, pour forth, hiking inflammation further. It's a positive feedback situation, worsening rapidly.

When the larger blood vessels break down further, exposing their basement membranes like the grout underneath bathroom tiles, uneven areas rip the passing platelets in the bloodstream. They quickly glom into clots. Everywhere.

Runaway clots cause heart attacks and arrhythmias, strokes and pulmonary emboli, even blue COVID toes. At the same time, constricting blood vessels ramp up blood pressure, especially serious in older people and those with diabetes.

Feedback loops pour out even more cytokines. This is the storm. And the onrush of inflammatory cells blocks remaining blood vessels.

Meanwhile, the lungs clog, and the collagen-rich gluey stuff around the cells overgrows. The alveoli, the tiny air sacs where vital exchange of gases occurs, oxygen in, carbon dioxide out, become trash heaps.

Oxygen saturation plummets, but because the virus gets into the brain too, the person might not realize it. Patients standing in emergency departments and chatting have suddenly collapsed as their oxygen sats drop precipitously without their awareness. Even in young and healthy people, death can come without warning. For many people in New York City in the spring, that happened at home, with hospitals too packed to take in all but the most obviously sick. This is what will very soon echo across the country.

With viral assaults from several sites and the immune response in overdrive, organs shut down, and death comes swiftly.

People who have died contribute to the picture of what the virus can do.

Rossana Bussani, from the University of Trieste in Italy and colleagues, report on 41 consecutive autopsies of COVID patients in a recent article in [EBioMedicine, The Lancet](#). They call COVID-19 "a deadly pulmonary disease with peculiar characteristics."

The alveoli of all 41 deceased patients were shot to hell. In 36 the air sacs had coalesced, diminishing the surface area for the gas exchange necessary to keep being alive. As fluids poured in to the compromised tiny bubbles, the patients had essentially drowned. And the enemy watched, the remaining air sac lining cells stuffed with viral RNA.

Of the 41 dead people, 29 had clots clogging blood vessels of all sizes. Although virus didn't appear in other organs, the disintegrating lungs and filling of the circulatory system with clots was damage enough to end life.

Yet even officially "mild" cases of COVID-19 can be disabling, especially when symptoms persist for months, maybe forever since we do not yet have data for even one year. Jeffrey N. Siegelman, MD, from the Department of Emergency Medicine, Emory University School of Medicine, published "Reflections of a COVID-19 Long Hauler" in [JAMA Network Open](#) on November 11, after three-plus months confined to his couch with overwhelming exhaustion.

Dr. Siegelman is in none of the high-risk groups. "I have had a rotating constellation of symptoms, different each day and worse each evening: fever, headache, dizziness, palpitations, tachycardia, and others," he wrote. Yet his viral load must have been so low, perhaps infected by a patient he cared for, that he never tested positive, one of the "peculiar characteristics" of the disease. A clinical diagnosis is sufficient for a patient with such obvious symptoms.

The Meme Revisited

Still think it's time to "stop living in fear and embrace life to its fullest?"

The meme, just another Facebook mantra, is an instrument of denial, a continuation of brainwashing that the pandemic will magically just go away. It hasn't.

Fortunately, a new meme copyedits the original one:

"WHEN you cancel Thanksgiving and Christmas with your loved ones, remember that YOU ARE DOING IT BECAUSE YOU LOVE THEM AND VALUE THEIR HEALTH. We are not guaranteed a single minute on this earth. Stop ACTING LIKE WE ARE NOT IN A PANDEMIC and embrace SOCIAL DISTANCING, MASKING, AND STAYING HOME."

Be well all.

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