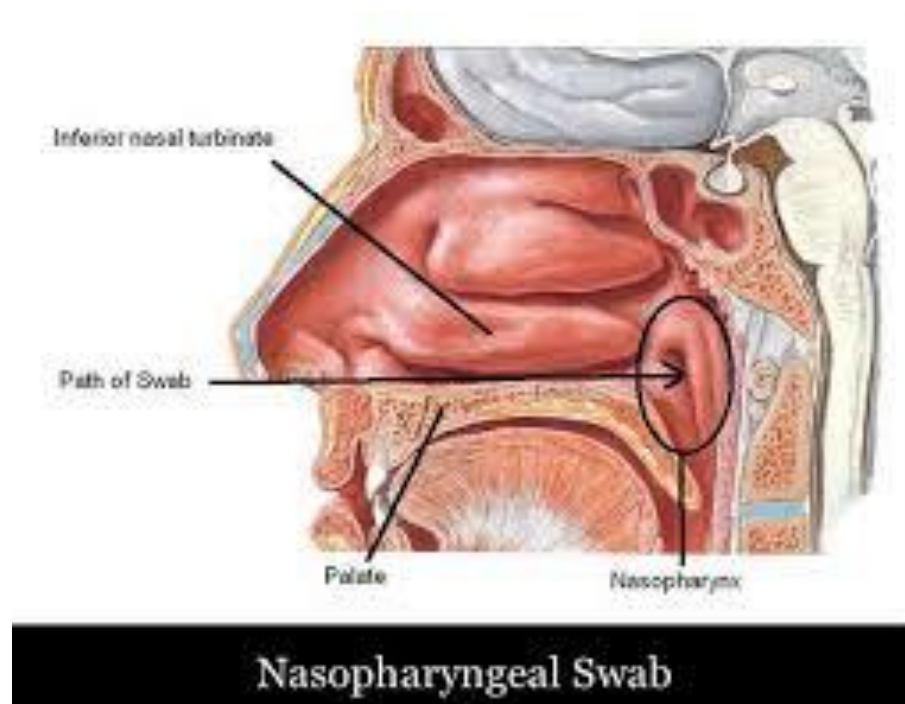


To my valued patients

A new quick test

There is a new saliva test for COVID-19 that was given emergency use authorization. This should be a big help and let me tell you why. The usual test requires a healthcare professional to insert a swab in the nostril to the nasopharynx at the very back of the nasal cavity – a far and uncomfortable reach. You have probably seen pictures of fully garbed healthcare workers with fresh gloves, and other personal protective equipment (PPE) doing this test. There is another swab test that is done lower in the nose or in the throat. It is not as accurate as the swabs from the nasopharynx.



With the new test, all you do is spit several times in a tube. This is much less invasive and requires almost no special equipment. When you spit into the cup, no healthcare personnel need be in close contact with you and therefore they are not at risk. To date, there is just one saliva test with this approval. The test was developed by Rutgers with help from other organizations. When the saliva test becomes available and you plan to use it, please make sure that the test is the test developed by Rutgers until additional saliva tests from other sources are approved.

Quick thoughts about possible re-openings

Have you noticed people are already arguing about “post COVID-19” re-openings? I think this is great. No, not the arguing, but the fact that we are contemplating re-opening. It means that more and more people are seeing a potential end in sight. Happy Days!

I cannot predict the future, but do not expect a light switch to be thrown and everything to return to normal. Schools may have children starting at different times through the day. Temperature checks may become a regular feature at offices and schools.



Handshakes may not return for quite a while. Restaurants may have limited seating. At first facemasks might become a necessity when social distancing becomes less possible. Even so, should another outbreak occur, there may another call for local lockdowns.

Public gatherings, at first, may still be limited to say 50 people, so no big sporting events, conventions, and theme parks at first. Alas, the upcoming season of my Trojan football team, has been tentatively cancelled. Some people are advocating for very far-reaching surveillance systems, but I believe most Americans will rebel against too invasive surveillance.



Americans have already quickly adapted to the shutdown. We can expect more people to continue to work from home and work via conference calling when necessary. But many jobs simply cannot be performed via video or phone.

From a healthcare point of view, I believe it will take a while for the most exposed healthcare workers to heal. The front-line healthcare workers have been slammed and, though many may not realize it, it will take its physical and psychological toll for months, and possibly years, to come.

One thing we will need to see before reopening is a much better supply of easy to do test kits and quality antibody testing. It is estimated that repeatedly testing the US population will require 22 million tests a day.

Another important thing for the future will be a vaccine. A vaccine will truly allow America to return to the America we had before the start of this pandemic.

How can we get a vaccine fast?

Controlling future outbreaks of coronavirus will put us on a sustained path to recovery. There are no current coronavirus vaccines to model a new vaccine after since this is a novel/new virus. There are at least 79 coronavirus vaccines in the early stages of testing, with three at the point of human testing. The speed with which vaccines are being developed for testing is utterly remarkable.

It has been just 63 days between the time doctors sequenced the vaccine to the time doctors injected the experimental vaccine into a real person. The first test of these trials is to determine whether the vaccine is safe and if it can elicit an immune response. After that, researchers will then need to evaluate whether the vaccine can prevent a SARS-CoV-2 infection and assess whether the vaccine has any severe side effects. Furthermore, researchers need to determine the right dose and whether the vaccine can be administered in one shot or a sequence of shots.



Once an effective vaccine is developed, it will then need to be manufactured on a massive scale. So, if you are looking for a vaccine tomorrow, do not. To help in this tremendous undertaking, two of the world's largest vaccine manufacturers, Sanofi and GlaxoSmithKline (GSK) are collaborating to accelerate the development of one of the vaccines. The vaccine manufacturers will utilize Sanofi's technology used to make the flu vaccine Flu Blok, along with GSK's adjuvant which is an additive that will increase the effectiveness and ability to mass produce the vaccine. I have heard estimates of 12-18 months but with such a massive effort, we may very well see a vaccine before that time. Mind you, in normal times a vaccine takes 5-15 years to perfect. As with many other areas of research and manufacturing, we are on the ultra-fast track.

What is it about New York and the coronavirus?

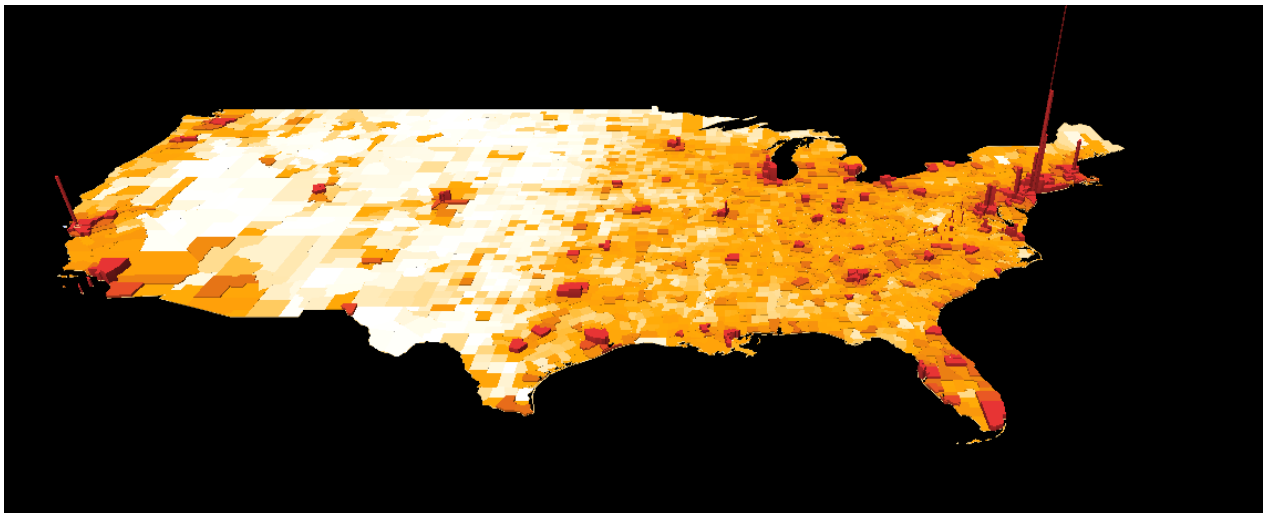
As of earlier this week, New York's death rate was 513 per million people and California's was 17 per million. 70% of New York's death were in New York City. What is going on and what can explain some of this?

Evidently, some of this difference is pure math. According to the study of the virus's genetic material, California had about 8 initial introductions, mostly from Asia and New York up to 100 initial introductions into the state, mainly from Europe. Each of these "introductions" starts its own chain of transmissions going from a single person to multiple persons.

It also appears one individual in New Rochelle, north of New York City, is what is defined as a super spreader. We do not know why some people spread the disease more than others, but they can. It is thought that this single super spreader sent the virus to more than 100 others. Side note: Trivia Time - New Rochelle, New York was the fictitious home of Rob and Laura Petrie in the Dick Van Dyke Show.

The original number of introductions in New York along with the super spreader led to an initial large number of people infected in New York City. Obviously, the more cases you have, the more deaths you can expect. Also, as hospitals get overwhelmed mortality goes up.

NYC is also the densest metropolitan area in the US among populations over 100,000 (3D population density map below, NYC is tall red on east coast and, actually, San Francisco is tall red on the west coast). Therefore, the virus can spread much quicker with this dense urban population than in a rural setting. Remember, the disease was already infecting New York about 4 weeks before lockdown. Therefore, everyone riding subways in close cramped quarters and working on top of each other and riding up and down elevators and even walking on the crowded streets allowed more and more individuals to be infected.



Another reason there may be a difference between the number of cases in NY versus Los Angeles may be attributed to who is getting tested. When you have such high numbers of extremely sick people, the testing only occurs in that select population. California, with far fewer cases may be testing milder disease.

In any event, those in California, consider yourselves lucky. Many of us have friends and family in New York and we hope the recent reports of leveling off continue to show that we are seeing the light at the end of the tunnel. The number of total hospitalizations in NYC has been ticking down in recent days, falling below 18,000 for the first time in more than a week.

Medicine and art (which also includes music)

Now to something I am a little more familiar with than famous painted art.

Felix Mendelssohn was one of the greatest composers of his time. He died remarkably young on November 4, 1847 at age 38. It is believed that he died of a subarachnoid hemorrhage or a sudden bleed into the brain. There may have been a genetic predisposition to this as his sister

Fanny had a similar death. You may think that you are not familiar with his work, but I assure you most of you have heard his music many times.



If you read music, here is your first clue



If not, here is your next clue

<https://www.youtube.com/watch?v=4tDYMayp6Dk>

Yes, if you have ever been to a wedding you have probably heard this.

Here is Mendelssohn's A Midsummer Night's Dream. The opening, famous overture for the Shakespearean play was written when he was in his late teens. Think of the genius of a teenager writing the music linked below. 17 years later he wrote incidental music to accompany the play and added 13 more movements.

<https://www.youtube.com/watch?v=yijwRZ6eqe0>

As usual thanks for reading, I hope you can appreciate the amazing progress we are seeing, it is truly breathtaking and historical.

Reed