

MORE ON OMICRON
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As Omicron surges around the globe, the average number of new cases in the USA has peaked at about 1 million daily and now appears to be slowly dropping. New cases are dropping in 19 states while they are rising in the midwest. Since the beginning of 2020 at least 1 in 5 people living in the USA have been infected with Covid-19 while at least 1 in 390 people have died. I find it interesting that some cities, some states in the USA and some countries are having their new case numbers, their hospitalization numbers as well as their death rates increasing like a tidal wave while other cities, states and countries are on the downslope. Hospitals everywhere are bursting with too many patients and too few staff, while the staff that they have is overworked, overwhelmed and constantly in crisis. Nurses are so overburdened that, in fact, they need assistants. Children are being hospitalized with Omicron at record levels. People who have “followed all the rules” are getting sick, usually mild but this is causing shame, depression, anxiety and exasperation.

New information about Omicron is being reported daily as original studies have ended. Here are some of the new facts being reported. People on kidney dialysis are an easy target for this variant. Omicron is present in almost all the countries in the world. 99% of new cases in USA are from this variant. This mutation is 70 times faster at infecting people than Delta. It even has a shorter incubation time than previous versions of Covid-19. Of the 50 mutations that Omicron has, about 20 are outside of the spike protein (all of these explain why this variant is so different). Breakthrough cases are more common with Omicron than with Delta or the original virus. These cases are less severe because this variant has difficulty binding to lung cells causing less damage to the lungs but peaks its viral load in the nose and upper respiratory tract. People who have been fully vaccinated and boosted will usually get a mild case (not involving hospitalization or death) while the unvaccinated have been and are likely to continue suffering the brunt of this infection. Hospital stay risk for Omicron is 40% to 45% lower than for Delta. The safest way

to avoid Omicron is with the booster, which has proven to be effective.

Testing has become a serious issue. In Germany, people buy a rapid home Covid test for about \$1. In Britain, any household may get a pack of 7 tests for free. In Singapore, you can get the test for free from a vending machine. In Israel, children home test daily before school to determine whether to go or stay home. Worldwide, people want to quickly find out if they are infectious or not and lines for public testing at governmental sites or pharmacies are incredibly long and time consuming, so the need for rapid home testing has become great. We have had bipartisan support for free at-home tests. The White House has begun a program of giving any household 4 free test kits. The federal government has purchased 1 billion kits. These rapid tests are designed to pick up a portion of the protein of the Covid virus, known as an **antigen**. Although these tests give you a quick sense of security, they are not as sensitive as the 1-3 day PCR test (PCR means Polymerase Chain Reaction which tests for detailed DNA). Several variants, including Omicron, have learned to trick the rapid test. In the USA, we have 12 different tests available with Emergency Use Approval by CDC and NIH. A nonprofit testing firm rated these tests and found that Intrivo's On/Go test rated highest and BD's Veritor test rated poorly because it did not come with instructions but referred the buyer to a website.

There are quality **problems with the at-home rapid tests**. Using these tests in the first 2 days after infection oftentimes results in false negative test results. Also if the viral load is too low, the result may be a false negative. More importantly is the false-positive problem. Two million of the 3.5 million tests, by Ellume, were recalled because of a technical problem causing the false-positive results. Batches of tests made by any manufacturer may be, and several have been, associated with this technical problem. In spite of the low risk of these false test results, at-home rapid testing is an additional tool in our armamentarium to fight this virus. There is insufficient data to say whether or not a test may be used after its expiration date, so (my advice) is not to use them after that date. There is a joke going around

about home testing: Open a bottle of beer, smell it and then taste it. If you can do both, you have tested negative. I suggest that you do not do this test too often and certainly not before driving or using heavy machinery.

New information from multiple sources indicates that we should no longer be wearing cloth **masks** for protection against Omicron. Yes, they are pretty and they may advertise your favorite organization but they do not do the job because they are too porous. Back in April of 2020, CDC authorized cloth masks as a suitable substitute for surgical (multiple layer non-cloth) masks because these were in short supply. Cloth masks are more effective than being maskless but not as good as the old standard surgical mask or the N95 (made in USA) or KN95 (made in China). (You cannot enter an operating room with a cloth mask or a bandana.) When in use, the surgical or 95 mask should have the nasal clip fitted tightly so that your glasses do not fog). These masks have small pores and stop 95% of droplets 1 micron unit (1millionth of a meter or 1 tenth of a millimeter) from passing through. (This is how they were named). A recent study showed that surgical masks were more than twice as effective as cloth masks. Because there still is a shortage of surgical masks, CDC suggests that if you use a cloth mask, it should have at least 2 layers of washable, breathable fabric. CDC announced that about 50% of the N95 and the KN95 masks are counterfeit. CDC also has recently recommended that, because of the increasing numbers and the easy transmissibility of Omicron, we double up with surgical and 95 masks. Although surgical and 95 masks were originally made for one-time use, CDC recommends that the surgical or 95 masks may be used more than once but should not be worn more than 5 times. (I know of no scientific data that confirms this recommendation.) The take-home message is to wear 2 masks of the surgical or 95 kind tightly fitted around the bridge of the nose and the face

In the past, when a series of vaccine shots were given, it was always given using the same vaccine. With the Covid-19 vaccines, **mix-and-match** has been introduced. The first dose of the vaccine causes the body's immune system's **B cells** (a lymphocyte-a white

blood cell that makes antibodies) to make antibodies against the pathogen (the virus here). It also causes **T cells** (a lymphocyte—a white blood cell that makes killer cells to kill the virus, that activate other immune cells, that produce cytokines [these are small proteins that control the growth and activity of other cells in the immune system. they regulate inflammation; they limit the spread of infection.] and regulate the entire immune response) to do their 4 part job. The T cells actually go out to hunt and kill the virus. The second shot goes up this response. The B cells and the T cells increase markedly, reactivate and develop stronger attackers against the virus. The T cells do still recognize the Omicron variant. A British study found that **T cells from common colds** protect against Covid.

The Russians began using a mix-and-match technique with their Sputnik V vaccine. Earlier studies with H.I.V. suggested that mixing vaccines would create a more inclusive and a stronger response than using the same vaccine twice. It gives the best of both worlds. Different types of stimuli produce different effects. This pandemic gave the researchers the opportunity to test their theory. Remember that the Astra-Zeneca vax was associated in young people with blood clots. Although this was a small but real risk, European researchers took this opportunity to give the second shot with an mRNA vax. The 2 vaccines are totally different. The researchers found that the result was more antibodies than 2 shots of the A-Z vaccine. Next came a larger study in Britain with the same result. The researchers found that mix-and-match did give a more powerful and broader immune response. This is very important globally where any vaccine may in short supply or where people may have side effects after the first or the second shot. Then, in a study in Maryland, researchers showed using any combination of **mix-and match boosters** resulted in more powerful antibodies. T cell studies are still in progress. (This is great news.)

- The main cause of death among **US POLICE** in 2021 was Covid-19. (The answer to this is vaccination, which saves lives!)

- Israel has found the **fourth covid booster shot** to be ineffective against Omicron.
- Covid-19 disease may produce an **increased risk of diabetes** in children under 18 years old.
- One in every 100 **seniors** in the USA has **died of Covid**. That is 1% of senior people.
- USA has administered over **550 million doses** of Covid vaccine.
- As of 1/5/22, only **25%** of children 5 to 11 year olds while 63% of 12 to 117 year olds had received 1 shot. (Lots of hesitancy here.) Newfoundland, Canada has amazing results with children's vaccinations using a public health message "to protect the grandparents".
- Dr Fauci has stated that the definition of "**fully vaccinated**" should include the booster, while the White House has stated that there is no change yet.[—[but
- The **Fauci effect** refers to an increase in US college students interest in becoming medical doctors.
- **Families are feuding** over Covid, over the vaccines, over masking, over taking "unnecessary" chances (including my own). Couples are also feuding causing a rise in divorce rate.
- **50 billion dollars** is the estimated cost to vaccinate the world.
- Repeated studies show that our **vaccines are effective** against Omicron and they are most effective for people over 50. Their job is to prevent serious disease like hospitalization and death. Omicron is causing a large amount of "breakthroughs".
- Babies born during this pandemic are showing a **negative** effect on cognitive and physical **development**. (This is not necessarily cause and effect. It is merely an association of 2 facts easily picked up by a computer.)
- CDC has shortened the **isolation time** for asymptomatic positive testers down to 5 days for non-scientific reasons.
- Over 150,000 **American pregnant women** had Covid disease by the end of 2021; 25,000 were hospitalized; 249 died.
- **Vaccinated women transfer Covid antibodies** to their **breastfed** infants. Pregnant women are still reluctant to get vaccinated even though the data is strong that the benefits by far outweigh the risks.

- Quebec Canada is placing a **financial penalty** for people who refused the vaccine.
- **Boys could face a higher risk from** Covid even before birth. Male fetuses are generally more vulnerable than females. Boys have more premature births, higher disabilities and higher death rates normally. Covid presents many special dangers to boys.
- Although Omicron is surging in **nursing homes** again, boosted residents are 10 times less likely to get Covid.
- **Long Covid is less likely with vaccination.** Long Covid symptoms persisted after 1 year in 50% of patients at a N.J.medical center.
- Dr Peter Hotez says the “**far right anti vaccine aggression**” has killed 200,000 Americans.
- **Sewage testing** has become a popular test for communities to determine the extent of the virus in their area. The remnant of the virus in fecal samples in the waste-water is not infectious.
- Nearly **1 million new cases in kids** were reported in USA in 1 week in mid January. At-home Covid tests are considered accurate for kids and teens (in a study by Johns Hopkins School of Medicine). The researchers did not examine the results in adults.
- Covid may have **killed nearly 3 million people** in India.
- A new **nasal vaccine** may fight against new viral variants. Many **new variants** are showing up but are not yet **of concern**. Using our new technology, a nasal vaccine **against Alzheimer’s disease** is being tested at Boston Hospital. Also a **universal anti-tic vaccine has been developed.**
- ‘**Flurona**’ = **flu plus coronavirus** in patients at the same time has been detected in California and Texas although the incidence of flu is down. (Obviously this can happen.)
- **Merck is selling its Covid pill** to the US government for 40 times what it costs to make (although the research was funded by the federal government). An Indian pharmaceutical company will market this pill soon **for about 50 cents each.**
- **Covid statistics** are problematic because when people are admitted to hospital they are tested. If positive they may be admitted as “**with Covid**” or “**for Covid**”. However hospital statistics do not reflect a difference at present.

- There were 4700 **prescriptions for Ivermectin** paid for by private insurers for a total of almost \$275,000 and about 900 prescriptions paid for by Medicare Advantage for almost \$50,000.

Although Omicron causes milder disease, it is so transmissible and infectious that as more people get infected, usually with mild disease, when the elderly, the residents of nursing homes, the people with chronic kidney disease who are on dialysis, the other peoples with multiple risk factors and the non-vaccinated become infected, the hospitalization numbers are so high that our hospitals are being hit by a tidal wave. Models which are produced by University academics are predicting a **future wave of Omicron deaths** in the next few months.

If the number of people who refuse to vaccinate remains high in our country and the number of people who are not vaccinated in the rest of the world (**vaccine inequity**), many more Covid-19 variants will emerge. Pope Francis said that anti-vaccine sentiment is “baseless” in his annual state-of-the-world speech. We must find a way to increase our vaccination rate. In the USA, only 63% of our population is vaccinated although almost 90% of seniors are vaccinated. Each 1 of us must do what we can to get our family members, our friends and our associates vaccinated. **VACCINES SAVE LIVES!**

Be well and stay safe.