

COVID-19 OMICRON BA-5

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So, **you are sick and tired** of talking and hearing about all this Covid disease stuff. Well so is everyone else. 32 months of coughing, mandates, lockdowns, vaccines, isolation, masks, conflicting guidance, professional burnouts, hospitalizations and deaths have taken their tolls on all of us. 67% of American of all ages and 92% of elderly Americans (over 65 year olds) have been fully vaccinated (2 doses) With Covid-19 cases falling for the fourth straight week (on 8/19), we **finally may be reaching a plateau** with this Omicron sub-variant **BA-5** as the predominant pathogen in the entire world. Only 3 previous variants have globally predominated: Alpha, Delta and Omicron. This is a big deal. Depending on future mutations, we may possibly be seeing this entire Covid pandemic transition to an **endemic phase**, which should make living easier.

The “**Ninja**” variant, **Covid-19 Omicron BA-5**, is the most worrisome variant yet. Starting in South Africa in February 2022, it spread to Europe and Israel in May and arrived in the US in late June. By the end of July, **BA-5** had already become predominant, taking over from BA.2.12.1 and making up 89% of our cases at the end of August. This sub-variant is more contagious than any previous form and because it has become better at dodging antibodies; BA-5 causes more breakthroughs and re-infections. It makes more people sick, but not very sick. Serious illness and death rates have not increased. **Current vaccines are still effective** in preventing severe disease but have a lessened effect on breakthroughs and re-infections. Past infection immunity does not appear to prevent recurrent disease. Boosters seem to be somewhat effective in preventing re-infection. (As of 7/15/22, only 1 in 3 Americans has had a booster.) The most common symptoms of BA-5 are those of the common cold, not usually causing severe chest problems or loss of smell or taste. It may, however, cause long-Covid symptoms. BA-5 has the ability to keep re-infecting us and re-infections will keep happening with BA-5 or the next virus until we learn how to get out in front of this situation.

BA-5 has major mutations which have changed the arm of the spike protein so it can hide from our immune systems. This is called **immune escape**. Its ability to infect cells is more similar to the Delta variant than other Omicron variants. Morphing and mutations have made BA-5 more **fit**, which refers to its ability to transmit, grow and evade the immune responses of our body. BA-5 has the ability to pick and chose, to morph its way into more cells, in more bodies, in more countries in the world. A strong, widespread wave gives the virus the time and space to mutate into more infectious, dangerous and smarter variants and sub-variants. Unfortunately, this **epidemic is not over** yet. The statistics that we receive concerning this wave are muddled and

uniformly an undercount because people are home-testing and not reporting their results to their health departments.

BA-2.75, nicknamed 'Centaurus', the latest Omicron sub-variant started in India in May and is actually more adept than BA-5 in escaping immune systems and spreading rapidly. It is unclear yet how BA-2.75 will compete with BA-5. Spreading rapidly throughout the world, BA-2.75 first appeared on our west coast in July. This one has more mutations than BA-5 and seems more transmissible. We shall follow this Omicron sub-variant closely but it looks like it may not prove to be a match for BA-5.

There have been a tremendous number of articles recently about **Long Covid**. Researchers at Yale finally may have **found a clue as to why it happens**. They found **low levels of cortisol**, the hormone which fights stress (very involved with inflammation, sleep, glucose, healing and much more). They also found an **abnormality in the T-cells**, which are the bodies antibody response, which are **"exhausted"** (this requires much future study). These studies are exciting, new, need to be confirmed and will continue. Other researchers have shown that with **each discrete Covid re-infection bout we get, we increase our risk of getting** Long Covid. **One in 8 people** who get the disease have been shown to develop Long Covid. **Hyperbaric Oxygen** has recently been shown as a treatment for some of the Long Covid symptoms, like improving sleep, energy and cognitive function, as well as decreasing pain and depression. **Researchers are making progress**.

More than 1 million doses of **Paxlovid** were prescribed in July, making a new record. Both President Biden and Dr Fauci took this medication and they both experienced a **rebound** of their Covid symptoms after completing the 5 day course. Oral Paxlovid reduces the risk for severe disease and death by 46% regardless of vaccine status. This medication has been authorized by the FDA to be prescribed by pharmacists in addition to physicians. It seems that during rebound, people may still transmit the disease. Although the reasons for this rebound effect are not known, the theories are either that this is part of the natural course of the disease, or that the medication is not enough in some patients who metabolize the drug extra quickly, or that there is some other unknown-as-now factor involved. Experts know that rebound is NOT caused by resistance to this drug. Only 1-2% of people taking Paxlovid report having rebound. (This seems to me to be an undercount.) People who experience rebound should retake another 5 day course of Paxlovid and isolate again. (They are infectious.) Some virologists are recommending increasing the course of Paxlovid from 5 days to 7-10 days. This rebound phenomenon should not stop people from using this treatment. Paxlovid is not to be given to pregnant women. A side effect of Paxlovid is 'Paxlovid mouth' which occurs in 6% of users and is described as leaving the taste of 'sour garbage' in the mouth.

The White House has requested **development of next generation** vaccines to handle the present viral escape and future Covid viral epidemics. These will include revving up present vaccines, finding and developing newer technologies, including

nasal vaccines. **We need to stop chasing the virus.** We need to get out front and be prepared with second generation vaccines for wherever the virus takes us. A large amount of the present vaccines are discarded because they expire while on the pharmacy shelves or they are not used once the vials are opened. They should be sent to poorer countries to be used quickly before they expire.

The US government has authorized the **Novavax Covid shot** (Nuvaxovid), which already has been used in 40 other countries, for use in adults (18 years and older) and just recently for teens (12-17). This is not an mRNA vaccine (like Pfizer and Moderna). It uses the old standard traditional vaccine technology. The FDA hopes to get the 27 million unvaccinated Americans to accept this fourth vaccine option. (The J&J vaccine is the third.) This vaccine can remain for 6 months without refrigeration without losing its strength. As of 8/6/22, over 7,300 doses have been administered in the US.

Moderna and Pfizer have **upgraded their Covid vaccines** to fight the BA-5 sub-variant. The UK has already approved this modification. These should be available in the US in September. Pfizer-BioNTech has begun testing a newer universal vaccine, which will be aimed at a wide variety of coronaviruses. In rethinking their strategy of the best way to fight future variants for a higher level of protection, or blocking infections altogether, experts decided that a nasal spray would be best. A Georgia biotech company, **CyanVac**, has modified a nasal dog vaccine against Kennel cough by adding the coronavirus spike protein which will copy itself (multiply) so that the nose identifies the Covid spike protein and the immune system destroys it. **Mount Sinai Hospital researchers** are working on a nasal vaccine with a chicken virus that typically causes sneezing, coughing and wing-drooping by adding a coronavirus spike protein. **Meissa Vaccines**, a California company, has weakened the Respiratory Syncytial Virus vaccine and added coronavirus spikes. **University of Oxford researchers** are modifying the AstraZeneca-Bharat Biotech (India) Covid vaccine for intra-nasal use. This modified nasal vaccine is hoped to be licensed in US in August. A **Yale researcher** named Iwasaki developed a **nasal-spray** made of spike proteins suspended in saline solution to be used as a booster. Researchers at Mount Sinai and the Scripps Institute in California are doing early work with a tiny substance in **Llama blood** which APPEARS to prevent and treat all coronaviruses. So, **new work is underway.**

According to academic experts, **vaccines**, in spite of being politicized, have **saved over 20 million lives** during the first year of their use in this pandemic. A study in the Journal of the American Medical Association said that vaccines reduced American deaths by 58% between December '20 and September '21. During that period vaccines prevented 22 million infections, 1.6 million hospitalizations, and 235,000 American deaths. **Vaccines remain the best protection** we have against Covid-19 disease.

- **Quick Facts:**
- **New information shows that pulse oximeter readings in dark skin individuals are less accurate than they are in light skin individuals.** This may be part of explanation as to why African-Americans have a higher incidence of medical problems, worst outcomes and higher death rates in the ICU than Whites. (This is the device attached to fingers in the ICU which read oxygen levels).
- **Director Walensky** is upset with the CDC's Covid pandemic response and is planning to restructure her agency.
- **Sense of smell and taste problems** may persist as part of Long-Covid in a considerable number of patients.
- **Hair loss** is a frequent noted side effect of Covid-19 disease.
- **Alterations in brain structures** have been found on MRI exams in 'significant' numbers of people having mild to moderate Covid disease.
- **Immunocompromised people** remain at high-risk as long as Covid-19 epidemic remains.
- **Attempts to stop smoking** have declined during Covid-19 pandemic.
- **US mammography rates** are reported to be stagnant during Covid pandemic.
- **Anti-vaccine voters**, Democrat or Republican, have become a political reality. They tout "medical freedom" and support any candidate who is against vaccines regardless of the candidates other positions. (This anti-science movement is becoming a threat to global health security and is killing thousands.)
- NYC **Mount Sinai Hospital has launched its own vaccine** manufacturing company for 'inevitable' future pandemics.
- **Unusual menstruation patterns** (breakthrough bleeding and heavier bleeding) have been reported **after Covid-19 vaccination.**
- Even women with **asymptomatic Covid-19 may increase pregnancy complication risks.**
- A Harvard study found preliminary evidence that Covid disease in pregnant women MAY be associated with **neurologic and developmental problems in offsprings.**
- The **risk of stillbirths doubled** during pregnancy when the mother developed Covid-19 infection. The virus infiltrates the placenta.
- Hospitality and retail workers had **higher Covid-19 mortality rates** than other workers.
- Death rate soared **for the elderly (65+)** during Omicron.
- **American Indian and native Alaskans** are at increased risk for serious Covid-19 infections.
- 7% of **kids** hospitalized with Covid disease have **neurologic complications.**
- FDA and CDC approved Moderna and Pfizer shots for **kids 6 months to 18 years.** The American Academy of Pediatrics has stated that these are both safe and effective. Parents are, in general, not getting their kids vaccinated. (The lower the age, the less vaccinated.)

- The CDC has NOT found a link between **heart inflammation** and the Covid-19 vaccines.
- A Harvard study shows potential **benefits of a mix-and-match** approach for Covid vaccine boosters (different manufacturers and different types of vaccines).
- Boston researchers have developed a **small portable device that tests for current or past** infection.
- In Thailand, several people, including a veterinarian, **got Covid from a cat** (first report of cat-to-human transmission). There have been 23 animal non-human species reported from 36 countries infected with the human form of the virus. This is important because these **animal reservoirs may spill-over** to humans at any time in the future.
- The **latest theory about the origin** of this pandemic is that it did NOT start in a laboratory, but escaped from the Wuhan wet market. (Time will tell.)

Many questions remain unanswered about the future of this pandemic. The **pandemic is NOT over**. As the CDC eased guidelines, it noted the **virus is here to stay**. Many states are acting like there is no longer a health emergency. (It is expected that CDC will continue the public health emergency status of Covid-19 for another 90 days.) Omicron appears to have the ability to mutate faster than our ability to prevent and/or treat its disease. At present, it appears that there will be community highs and lows in transmission and case trends. We must learn to live with these changing conditions. When Covid disease is active in a community we need to increase our mitigation steps. When the community disease is low, we can relax our vigilance. Since we know that **vaccination lowers the risk for Long Covid**, we need to keep encouraging vaccinations with new vaccines and boosters. We certainly should continue wearing tight fitting masks when exposing ourselves to any large indoor crowd (actually we should avoid crowds when possible). **Masks do work**. We should become aware of the **ventilation** wherever we are. We certainly should continue 20 second **hand washing** when returning home. (This is easy and cheap.) We should have **home tests** handy and use them when symptoms occur or exposure is known. (We should report positive test results to local Health Departments. Do not be complacent. **I like wearing my mask in public. Now I can talk to myself in peace.**