



LONG COVID

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With the rise and fall of new Covid cases and deaths, as new variants of the Covid virus emerge, one constant is noted according to all the experts:

The persistent increase in the number of cases of “LONG COVID”.

This refers to a plethora of symptoms (in some cases over 200), which arise weeks or months after recovery from a Covid infection. The most common symptoms include fatigue, trouble breathing, brain fog, lack of concentration, arrhythmias with palpitations, lightheadedness, altered taste or smell, insomnia and stomach pains.

Symptoms can last three to six months and in some cases, a year or more.

Incidence

Long Covid is estimated to have affected as many as 23 Million Americans and this number is rising. After testing positive for Covid, about a month after recovery, a Covid test might be helpful, especially if atypical symptoms occur like delayed tiredness after physical activity, which may occur days later. Overwhelming exhaustion may be a sign of Long Covid.

It appears that the more severe the initial episode of Covid and the more prevalent the underlying health risks (namely obesity, coronary artery disease, high blood pressure, Congestive heart failure, renal disease, COPD and diabetes), the higher is the risk of developing Long Covid.

Covid is not going away, in spite of the societal ennui that exists! In the last few weeks, there has been a steep and significant increase in the number of hospitalizations for seniors with Covid according to the CDC.

In the past week alone hospitalizations have increased 25% for those 70 and older. Over 1500 seniors with Covid have been hospitalized every day during this time and more than 100,000 new Covid cases per day have been reported. This represents an 18% increase in the last week alone.

Of those 65 and older, only 43% have received a shot within the last six months and only 38% from ages 50 to 64. It is well known that the protection curve declines steeply as time goes on.

Etiology

Arni Bhatt, an oncologist and geneticist first noted in the early days of the Covid epidemic that many patients with Covid reported vomiting and diarrhea, even though Covid was thought to be a respiratory illness. She collected stool samples and noted in her lab at Stanford similar findings that were related by Timon Adolph at The Medical University of Innsbruck in Austria. Both teams found pieces of SARS-COV-2 lingering in the gut for months after the initial infection, so called "CoronaVirus Ghosts".

- They postulated this could contribute to the mysterious condition **LONG COVID**
- Long Covid can be defined as symptoms, more than 200, and counting, that linger in excess of 12 weeks after the acute phase of the disease.
- Theories as to its etiology include the aforementioned reservoirs of virus, or particles of virus in various areas of the body, harmful immune responses, microvascular clotting or any combination of the above.
- The 2021 published study of Saurabh Mehandru at Mt. Sinai Hospital in New York City confirmed, with biopsy of the lining of the gut, that the spike protein was present, enabling the virus to infect the gut. This was found in patients up to four months post infection. They also found memory B cells, critical to the immune system, producing antibodies up to six months after the initial infection. They felt this suggested an ongoing response to viral particles.
- Further studies revealed viral particles being shed in stool samples, as long as seven months after the initial infection. This occurred long after the respiratory symptoms have abated.
- More studies, utilizing biopsies of the gut, have had similar findings. Autopsy studies have revealed viral RNA in multiple sites in the body including the brain, heart, and eyes. These were found more than 7 months after the acute infection. All of these patients have suffered from severe Covid, but another study of two patients with "mild Covid" had biopsy evidence of viral RNA in the breast and appendix.
- All of these studies seem to declare that viral reservoirs contribute to the etiology of Long Covid.

Risks

- Unvaccinated people run a higher risk of developing Long Covid after being infected. How strong that protection is, is debatable.
- **One in three** unvaccinated patients exhibited symptoms of Long Covid.
- Multiple studies suggest that vaccinated people that do develop Long Covid symptoms, display less severe symptomatology.
- With the emergence of variants that cause milder symptoms of Covid, it is expected that there will be fewer cases of Long Covid and the symptoms may be less severe.
- Women are more prone to Long Covid than men. The reason for this is unknown.

Prevention

- Any decrease in the incidence of Covid infection is anticipated to result in a decrease in the incidence of Long Covid.
- An Omicron specific vaccine will shortly be available according to Albert Bourla, Pfizer's CEO.
 - Because of the heightened contagion of the Omicron variant, many experts believe this will not come soon enough.
- Moderna CEO, Stephane Bancel, noted that a fourth Covid shot may be needed in the Fall as the efficacy of boosters predictably will decline by then.
- Israel has given over a quarter of a million fourth doses since January 2022 to seniors over 60 years of age, to medical workers, and to the immune suppressed. They have noted a definite increase in antibody levels as a result.
- Many things are still not known about this virus and its variants, but we do know that two doses of the vaccine are **not enough protection against Omicron**.
- There is **good** evidence that a third shot provides much more protection against Omicron, and a fourth shot, even more.
- Sixty three percent of the U.S. population is fully vaccinated having received two doses of the vaccine.

- Only 36% of those 63% have received a third dose.
 - Therefore only 40% are properly protected!
- The data is still not completely definitive and studies vary in their conclusions. So far, it appears safe to say that:
- Vaccinated Covid sufferers are much less likely to develop Long Covid.
- Up to 30% of patients infected with Covid develop Long Covid.
- Studies have shown that vaccinated Covid patients had a 54 to 68 percent decrease in headache, fatigue or muscle pain.
- A U.K. study published in *Lancet Infectious Diseases* found vaccination halved the risk of Long Covid corroborating the findings of the Israeli study.
- Even with vaccination, there is still a real risk of developing Long Covid

After examining over 500,000 records, Israeli scientists found that a fourth dose of the vaccine reduced death rates from Covid in patients over 60 years of age by **78%** compared to those receiving only three shots.

Two doses of mRNA vaccine by Pfizer and Moderna are roughly 50% effective in preventing emergency care for Covid six months after receiving the second shot according to the CDC.

A third shot increases that protection to 77%.

Some of the news pundits wrongly ridicule the efficaciousness of the multiple doses of the vaccine by stating, "What are we going to have to do, get a shot every year forever?". My answer is, "If it saves my life, yes!".

Diabetes and Covid

There is a greater risk of developing diabetes after a Covid infection up to a year later, even after a mild case. A study published in *Lancet Diabetes and Endocrinology* involving 200,000 people found this to be the case and this has been corroborated in multiple studies since then.

Other Risks of Covid

A Veteran's Administration study from the St. Louis system compared 180,000 survivors of Covid 19 with four million patients who had not developed Covid. This showed an increased risk of kidney disease, heart failure and stroke in Covid patients.

- They found that patients with Covid were 40% more likely to develop diabetes up to a year later.
 - Almost all of these cases were Type 2 Diabetes Mellitus
 - The incidence of diabetes increased with an increase in severity of the disease.
 - ICU patients had triple the risk of the uninfected.
- Those with a high BMI had double the risk of diabetes post Covid.

With over 480 million known cases of Covid, even a small percentage increase in Diabetes Mellitus translates to a dramatic rise in its incidence worldwide. This raises the question, does Covid destroy pancreatic islet cells.

Long Covid and Children

- The majority of people of any age infected with Covid recover completely.
- Long Covid symptoms may last for months or years.
- Why this is so, nobody knows as yet.
- The symptoms noted are headache, insomnia, fatigue, muscle pain and palpitations. These can present in children, even though the initial infection is rarely severe.
- Almost 10% of children ages 2-11, and 13% ages 12-16 reported at least one persistent symptom five weeks after a positive diagnosis. This study was released last month by the UK office of National Statistics.
- For adults, 35-69 years of age, the same study revealed 25% had symptoms persisting after five weeks.

Treatment

There are currently no known comprehensive treatments for Long Covid. Common sense treatments involve:

- Avoiding for a while those activities associated with severe exhaustion.

- “Pacing” involves scheduling rest periods during the day to mitigate against severe crashes. Recovery may be enhanced if these severe downturns may be avoided.
- For those suffering from shortness of breath, Yoga exercises may be helpful for breathing. This can involve long, slow breaths through the nose to strengthen the muscles of respiration and retrain the nerves controlling these muscles.
- Paxlovid. There are anecdotal “miraculous cures” of long term disabling symptoms, only to see resumption of symptoms with cessation of therapy.
- To date there is no well designed study to investigate the potential for Paxlovid in the treatment of Long Covid either by our government or Pfizer, the manufacturer.
 - Some of the hesitancy may be because of multiple subsets of the etiology of this illness.
 - Even so, if Paxlovid in the short term, or in lower doses in the long term, is determined to help some patients, then the obvious benefit, and the subsets that do benefit, would be highlighted. But to date, no such study is underway.

Conclusions

- Long Covid may have multiple causes. These may be related to the immune system, clotting, or reservoirs of virus in various organs.
- Long Covid may affect 30% of unvaccinated Covid patients.
- Its incidence is more common in severe initial cases of Covid.
- Vaccinated patients who develop Long Covid have less severe symptoms.
- Women are more prone to Long Covid than men.
- Two doses of vaccinations are not enough to protect against the Omicron variant.
- A third dose of mRNA vaccine has been shown to be 50% more effective in preventing severe Covid.
- A fourth dose results in further protection, reducing death rates by 78% as compared to those receiving three doses of the vaccine.
- Vaccinated patients who develop Long Covid have a 54-68% decrease in headache, fatigue or muscle pain.
- Vaccination halved the risk of Long Covid.
- Type 2 Diabetes is a real risk after Covid infection and two times more likely if one has an elevated BMI.
- Children can also develop Long Covid.
- Treatment to date is symptomatic, including yoga, breathing exercises and “pacing”.
- The above research points to the necessity of encouraging all of our residents that have not received a booster shot in the last six months to receive one if they have not received their fourth shot.

