COVID-19 Know the Risks and Avoid Them

NEW VIRUS, NEW HABITS - Dr. Teryn Clarke

How COVID Spreads

- The SARS CoV2 virus is airborne, meaning that it spreads between people in close contact. This may be through talking, breathing heavy, or close personal contact. Coughing and sneezing also release droplets into the air.
- We can minimize travel of these droplets and aerosols between people by covering our cough or sneeze with a hand, an elbow, or a face covering. Droplets have weight and tend not to travel far (thus the 6' suggestion) while aerosols travel in the air farther distances.
- Dispersion of aerosols and droplets is important. Dispersion in a well-ventilated indoor space or outdoor space dramatically reduces the potential transmission.
- There are no documented cases of casual outdoor transmission which is why universal masking mandates have exempted their use while outdoors without prolonged close contact. This virus is airborne, not atmospheric.

What is an Exposure to COVID

- The CDC defines an exposure to COVID as spending 15 minutes or more within a 24-hour period with someone who has symptoms of COVID-19 or in the 2 days prior to onset of their symptoms.
- Whether or not the sick person or the exposed person was or was not wearing a mask specifically has not bearing on whether or not an exposure occurred.
- https://www.cdc.gov/coronavirus/2019-ncov/php/public-health-recommendations.html

High Risk Situations vs Low Risk Situations

- The most important factors to consider are ventilation and proximity.
- Indoors, close contact, extended timeframe, poor ventilation = increased risk of transmission if someone is sick.
- Indoors, 6 feet of distance with good ventilation = dramatically reduced chance of transmission
- Outdoors, extended close contact = it is possible to transmit in this scenario
- Outdoors, casual contact = exceedingly low risk of transmission. There are no documented cases of transmission in this scenario.
- https://www.cdc.gov/coronavirus/2019-ncov/community/workplaces-businesses/index.html

Decreasing Risk of Infection in the Workplace

- DO NOT COME TO WORK WHEN YOU ARE ILL OR HAVE ANY SYMPTOMS OF COLD OR FLU, NO MATTER HOW MILD.
- Wash hands frequently.
- Do not touch your face or mask. AT ALL.
- Optimize ventilation, consider air purifiers.

- Optimize distance between workers.
- When ventilation and distance cannot be optimized, wear a face covering to contain droplets. Understand the differences between different masks and their limitations.

Immunity and Viral Load

- Body's natural immune system and viral load. varies widely amongst individuals.
- What can you do to improve your natural immunity, make sure you are not deficient in vitamins such as Vitamin D, get plenty of exercise and adequate sleep.
- It is always better to eat plenty of vegetables and get your vitamins and minerals through food or Vitamin D through sunshine however, even a healthy immune system cannot overcome a high viral load.
- Zinc and Vitamin C deficiencies have been documented to prolong COVID recovery or increase severity. Supplementation after infection has not proven effective.
- In summary, eat right, get outside, and stay fit and you could reduce the severity of COVID and shorten the recovery period.

What Vaccines Do and Don't Do

- The vaccines have been shown to be effective in reducing the severity of illness and decreasing hospitalizations and death in people who are vaccinated. Although the vaccines were shown to decrease infection early in 2021 with original strain, this effect has not continued with the delta variant, to the point that in Israel, nearly 60% of patients hospitalized in mid-August were fully vaccinated. This is what doctors are seeing in the community in the US right now.
- We were expecting that people who were fully vaccinated would still catch SARS-CoV2. This does not mean the vaccine is a failure.
- We were also expecting that they would have milder disease than expected and that is what we are seeing.
- Both vaccinated and unvaccinated individuals transmit SARS-CoV-2, especially the more contagious delta variant.

What to Do if You Get COVID?

- Vaccinated or not we are all at risk of getting COVID. The goal is to stay out of the hospital and have a full and timely recovery.
- Contact your doctor or local urgent care to see if they offer outpatient treatment options. If they do not, there are telemedicine services that offer remote care.
- Stay home and do not expose others to illness. Contact people who you have been in close contact with in the 48 hours prior to your symptom onset.
- Take care of yourself as you usually do when you have a cold or flu: stay hydrated, get plenty of rest, use over the counter medications to reduce your fever as you have in the past.
- Clearance to end isolation and quarantine:
- https://www.cdc.gov/coronavirus/2019-ncov/your-health/quarantine-isolation.html

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What are the Early Treatment Options?

- Monoclonal antibodies are being used in our community after exposure to COVID and in early infection as an outpatient. These are given by IV infusion or by subcutaneous injection.
- A quarter of the countries in the world are using early outpatient treatment with low-risk generic medications as their governmental approach to helping people recover quickly at home and minimizing infections.
- Cambodia, Bulgaria, Dominican Republic, Egypt, El Salvador, Guatemala, Honduras, Nicaragua, and Panama have all embraced early outpatient therapy and have created home treatment packets containing combinations of the following medications: hydroxychloroquine, ivermectin, azithromycin, doxycycline, prednisone. Although our government has not embraced early outpatient therapy, many physicians and telemedicine doctors are treating both unvaccinated and vaccinated patients with COVID as outpatients to prevent severe disease and decrease hospitalizations.

Recovery From Infection and the Resulting Immunity

- Once a person has recovered from SARSCoV2 infection (whether they had been vaccinated for COVID-19 or not), they will have broad and durable immunity. COVID recovered have very little chance of becoming reinfected.
- Every study that has evaluated immunity after recovery has shown that healthy people develop strong immunity to SARSCoV2 and its variants, which is in contrast to vaccine-related immunity.
- Comparing SARS-CoV-2 natural immunity to vaccine-induced immunity: reinfections versus breakthrough infections
- Antibodies and T-Cells protect against SARS-CoV-2
- Mild COVID-19 induces lasting antibody protection
- A long-term perspective on immunity to COVID

Checking our Immunity

- Testing is available to help you understand your immunity from SARSCoV2. Antibodies can be measured within the first 6-10 months after infection. After this time, after this time, antibodies naturally wane, but this does not indicate a waning immunity.
- We maintain cells that can immediately be called into action to generate antibodies I we are again confronted with a variant of this virus, and these live in our bone marrow. We can also measure our T-Cell immunity. This test remains positive long after our bodies have stopped manufacturing high levels of antibodies for circulation.
- Antibody testing:
    - *SARS-CoV-2 Spike antigen, IgM (Blood – Labcorp 164034)* Vaccinated and COVID recovered generate these antibodies
    - *SARS-CoV-2 Spike antigen, IgG (Blood – Labcorp 164055)* Vaccinated and COVID recovered generate these antibodies
    - *SARS-CoV-2 Nucleocapsid, Ab IgG and IgM (Blood – Labcorp 164068)* Only COVID recovered generate these antibodies

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- www.t-detect.com for measurement of T-Cell immunity which is long lasting
- What are the roles of antibodies versus a durable, high quality T-cell response in protective immunity against SARS-CoV-2