**COVID COGNIZANCE CONTEST (3C)**

Prevention and Cure

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This study talks about a few findings about COVID-19 biology, symptoms and preventative measures. COVID-19 is an illness caused by severe acute respiratory syndrome coronavirus 2(SARS-CoV-2). Coronaviruses are envelope viruses containing single stranded ribonucleic acid (RNA).

The virus strain that causes COVID-19, has previously not been seen in humans. Symptoms of COVID-19 are quite similar to other viral infections, like fever, coughing, tiredness, etc. However, more severe symptoms like respiratory distress has been observed in several COVID-19 infected patients, which have been fatal. Although COVID-19 is a viral infection, people suffering from the illness may also get secondary bacterial infections which can further complicate treatment and survival.

There are many ways of diagnosing patients infected with COVID-19. One of the most common methods of testing is to detect for the RNA that the virus carries, using PCR (Polymerase chain reaction). PCR is used to amplify small amounts of viral RNA into sufficient amounts that can be detected on a gel.

What are some current guidelines for prevention? Per the Centers for Disease Control (CDC) and the World Health Organization (WHO) guidelines, it is advised for people to practice social distancing and wear a face mask/covering when in public. It is also advised to wash your hands as much as possible, and to disinfect everything with a virus killing agent. Finally, staying home as much as possible and maintaining healthy habits is recommended to prevent getting infected.

The human body’s immune system can fight and cure itself of threats such as COVID-19. The main job of the immune system is to fight harmful substances and germs that enter the body. The immune system makes antibodies and uses them to fight certain germs that the body has previously come into contact with. This ability of the body’s immune system to fight the virus can be used to prevent COVID-19 infections. This can be done by getting vaccinated against the COVID-19 SARS-Cov-2 virus.

A vaccine is a biological medicine that provides active acquired immunity to an infectious disease. They typically contain an agent (either an active or attenuated virus or parts of the virus) that resembles the disease-causing pathogen. A lot of pharmaceutical companies in various countries are developing a vaccine to COVID-19. Most of these vaccines for COVID-19 are set to launch during Oct-Dec of 2020.

Vaccines help your immune system fight infections faster and more effectively. Vaccines are safer than natural immunity, because natural immunity only happens after you become sick, but since vaccines are taken before you get sick, it will protect you from having serious symptoms.

In summary, COVID-19 is a highly infectious disease caused by SARS-CoV-2. We have learned about the symptoms of COVID-19, and how to diagnose the virus. We have also learned, through this study, that other than social distancing and wearing a mask, the best method of prevention is a vaccine. When everyone gets the vaccine, the world will eventually develop herd immunity. However, the vaccine’s effectiveness may last only 3-4 months, due to the fact that the virus mutates rapidly. A solution could be taking multiple shots of the vaccine, until the world develops herd immunity. Thus, a vaccine developed against one strain may not be sufficient. Herd immunity is when enough people are vaccinated, the germs cannot make a person as sick as they would when they get infected before getting vaccinated. As a result, one may need to frequently administer the vaccine. Other solutions include developing vaccines for multiple strains of the COVID-19 virus or making a safe vaccine cocktail, when available, to avoid multiple shots. When the entire community is eventually resistant to the virus and are less likely to get the disease, we will get herd immunity. Until this happens, we should continue to follow social distancing practices, wearing masks and practicing good hygiene even after we get vaccinated.