January 7, 2021

Klahowya Tammy,

Thank you for reaching out to me about your interest in participating in our research studies, which are focused on developing serological tests that are less expensive, more sensitive and more informative than existing commercial tests for the presence of antibodies against SARS-CoV-2 viral proteins.

I am sorry that you and your partner have contracted COVID-19, but glad that your symptoms have been relatively minor. The good news is that COVID-19 is generally mild in people of your age, gender and fitness. About 70% of COVID-19 cases in B.C. occur in people under 50 years of age, and only about 10 people in this group have actually died (lethality rate of 0.02%) in the past year in our province. This is despite the fact that the predominating factors for COVID-19 such as smoking, obesity, diabetes, heart disease, lung disease and immune deficiencies also occurs in this group. For people that are 80 years or older, the lethality rate is 1000-fold higher at 20% than for those that are infected with the virus. Between 50 years and 60 years of age, the risk of serious ill effects and death from COVID-19 is not that much different from those under 50 years of age.

In my academic UBC lab and company Kinexus, we have actually recreated by artificial peptide synthesis about 5000 different pieces of the viral proteins that are encoded by the genome of the SARS-CoV-2 virus, and individually tested them with blood samples. We found that around 120 of these have commonly induced the production of antibodies in people that have been infected by this virus and tested positive in genetic tests for COVID-19. We have tested blood samples from around 120 people now, of which at least 30 have been sick and tested positive for COVID-19 with the genetic test for SARS-CoV-2 RNA. We have learned that the specific antibody responses between the various COVID-19-positive patients is completely different as to which particular markers they have from the set of our 120 best markers. Moreover, we have found that many of the asymptomatic, apparently healthy people that we have tested also have antibodies that will recognize the virus, although usually at lower levels.

Once you have been infected with SARS-CoV-2 and recover, you will definitely have antibodies, and these will be effective in preventing future infections with the same virus. If you did not have antibodies, you would not be able to recover. It is extremely rare to become re-infected and get sick again with the same virus. When you have antibodies, you will not get sick again if your are re-infected, nor are you likely to become contagious. There is unfortunately a lot of mis-information in this regard in the regular news and social media. A few days after you fully recover, you are effectively immune. If you went to Cabo, and was not sick from some other infection when you got back, there is no reason why you should not be able to go back to work. The 14-day quarantine for people returning back to Canada is simply to ensure that they are not actively infected with SARS-CoV-2 even if they are asymptomatic. As you can seen from your own experience, it is possible to initially test negative with the genetic test for COVID-19, and later turn to be positive. A positive result with the genetic test requires a threshold level of the virus for detection and early in the infection cycle there may not be enough of the virus for its detection. By the way, the less symptomatic that a COVID-19 patient is, the less contagious that they tend to be. Also, if you become infected later with another mutated strain of SARS-CoV-2, you will still be almost equally protected by your antibodies, because you actually have a population of hundreds of different antibodies that target different parts of the virus, and at best, only one part of the new mutated virus might be altered and not recognized by these antibodies.

Antibody levels against the virus will eventually start to decline after several months if you are not re-exposed to it. However, the B-lymphocytes that produce these antibodies go into a dormant state and become plasma or memory B-cells. If you get reinfected with the virus, these cells rapidly become reactivated, grow and multiple, and start producing large amounts of the same antibodies again.

Consequently, even years later a person can produce enough antibodies in time that they won't be sick or infectious to others.

A few days or weeks after you have fully recovered, we would be happy to test a few drops of your blood to explore which particular parts of the SARS-CoV-2 virus that your immune system has developed antibodies to recognize. This involves coming to the Kinexus and having a pin-prink in one of your fingers to collect about 0.1 milliliters of blood. You can call me on my cell phone at 604-218-2019 if you would like to talk about this and participate in our work. We would, of course, share our results of your blood tests with you. Finally, I am rather curious as to how you have found out about our COVID-19 research?

:) Best wishes from Steven Pelech.

*"Klahowya" is the Chinook jargon greeting that is roughly translated "hello and how are you?" Chinook is a pidgin language that was commonly used for several hundred years as the main form of communication between West Coast natives of North America and European traders and explorers. In view of its origins from the Chinook, Nuuchanuulth, French and English languages, and its historical importance, it is my preferred form of salutation in these politically correct times.

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