NATIONAL CITIZENS INQUIRY

Vancouver, BC **Day 2**

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EVIDENCE

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[00:00:00]

Marion Randall
So it's Marion Randall, again, appearing to assist this witness. The witness that we have before you is Dr. Steven Pelech. Doctor, could you please state your name and spell it for the record? And, well, that first please.

Dr. Steven Pelech
Yes, I'm Dr. Steven Pelech. My last name is spelled P-E-L-E-C-H.

Marion Randall
And do you swear to tell the truth, the whole truth, or promise to tell the truth, the whole truth, and nothing but the truth?

Dr. Steven Pelech
Yes, I will.

Marion Randall
Thank you. So Dr. Pelech, first we just could go over your qualifications a bit [Exhibit VA-7b]. I know you have a presentation for the Board, but you've been an expert witness in our courts six times already and are probably very familiar with that process. This is a bit less formal. You are Dr. Steven Pelech, but I understand that's from your PhD in biochemistry?

Dr. Steven Pelech
That's correct.

Marion Randall
And after that you did a doctorate, a fellow doctorate, in three different labs. Can you just describe what that was?

Dr. Steven Pelech
That's called a postdoctoral fellowship.

Marion Randall
Postdoctoral, thank you. And what were those labs?

Dr. Steven Pelech
In the lab that I had gotten my PhD, I stayed on for an extra four months. And then I went to Scotland, and I worked in the lab of Dr. Philip Cohen, who actually became Sir Philip Cohen, for probably the best funded lab in the United Kingdom, and actually Europe, for the kind of research I was interested in. And then I went and spent three years at the University of Washington in Seattle working with Dr. Edwin Krebs, who got the Nobel Prize for the discovery of protein kinases, which I've been working on ever since.

Marion Randall
And you also have a research background at least in immunology and virology. Is that correct?

Dr. Steven Pelech
Yes. I'm a native of British Columbia, and I got my PhD at UBC, and I'm a professor at UBC. But when I was first hired back, I worked in an immunology institute. It's the Biomedical Research Centre where I was based for six years as a principal investigator.

Marion Randall
And you have published articles in the area of immunology and virology as well?

Dr. Steven Pelech
That's correct. Several different journals. I've published about 250-plus scientific papers in my career.

Marion Randall
And I understand that presently you're on the faculty of the Medical Department, that's probably not right.

Dr. Steven Pelech
It's the Department of Medicine in the Division of Neurology, where I've been on faculty for 35 years.

Marion Randall
And you do teaching in the medical school as well?

Dr. Steven Pelech
I have taught medical students both in lectures, earlier in my career, and then for a while problem-based learning with medical students. But most of my activity is actually teaching graduate students for PhDs and master's degrees.

Marion Randall
Then I understand also that you have two biotech companies. Can you describe for us what those are that you're operating?

Dr. Steven Pelech
Yes, I was the founder of Kinetek Pharmaceuticals and was the President and CEO for six years. And then I stepped aside. And a year later I started Kinexus Bioinformatics Corporation, which has been in operation for 22 years now. And in that company, we conduct research, we've been working for about 2,000 industrial and academic and hospital laboratories in 35 countries around the world.

Marion Randall
And then I understand, you mentioned the word "cytokines," you're an expert in that field. Can you explain what that is, please?

Dr. Steven Pelech
Yes, sure. Cytokines are proteins usually that are produced by cells that are involved in cell-to-cell communication. And in particular, cytokines are involved in the activation of immune cells. And so when we have receptors on target cells for those cytokines—"cyto" means basically cell, and "kine" means to move—so these basically cause these cells to respond in a way that's going to aid the immune system or other cell types.

Marion Randall
And then I understand, you haven't mentioned this, but I know from speaking with you, another area that you've talked about is cell signaling. I think that may come up. If you can explain what that is, please?

Dr. Steven Pelech
Yeah, so cell signaling is once a hormone or some sort of a toxin or a virus binds to the surface of a cell, it initiates a series of changes inside that cell so that the cell can respond in a way that protects the cell and also protects the body—the colony of cells that we call our human body.

Marion Randall
And just in terms of what you're doing these days, you're also a Senator at the University of British Columbia?

Dr. Steven Pelech
Yes, I'm on the Senate for the last three years at the University of British Columbia, Representative for the Faculty of Graduate and Postdoctoral Studies,

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and I've been reappointed to Senate for another three years.

Marion Randall
And I did mention earlier that you had been an expert in our courts and in the country. I'm not sure if it's just British Columbia, but you were qualified as an expert in certain areas?

Dr. Steven Pelech
That's correct.

Marion Randall
Can you just go over what those were that you were actually received as a qualified expert?

Dr. Steven Pelech
I've been asked to speak on subjects that relate to immunology, virology, vaccinology, and that's what I'll be talking about today. And I've been involved in about pretty close to at least 18 court cases, not only in Canada but also in Ireland and South Africa.

Marion Randall
Thank you. So perhaps this is the time if I've adequately covered your qualifications that you could enter into your presentation that you prepared for today.

Dr. Steven Pelech
Yes. And again I hope—it's going to be a little lengthy, I apologize—I'm a scientist and I am asked to talk about these subjects. But I'm going to make you a little bit more acquainted about viruses. And also, about how these vaccines actually work and the dangers of these vaccines that I've come to learn both from my own research and also very extensive analysis of literature [Exhibit VA-7a].

I'm also involved with the Canadian Covid Care Alliance. I'm one of the founders and the Vice President and a Co-Chair of the Scientific and Medical Advisory Committee. And so much of what I also know has been informed by my interactions with other members on that committee, which is about 36 scientists from across Canada [Exhibit VA-7].

Marion Randall
So we've got your first slide up. Perhaps you could begin.

Dr. Steven Pelech
[Conflict of Interest Disclosure]
So as a requirement, any professor that's presenting work at UBC, we have to give a conflict of interest disclosure. So I'll remind you that I am a major shareholder of Kinexus Bioinformatics Corporation, which I'll present a little bit of that work to a large clinical study that we've undertaken, that I'll talk about. And I have to emphasize that the views that I'm going to express are my own views. They may not be necessarily carried by those at the University of British Columbia or Kinexus or the Canadian Covid Care Alliance. Although I have to admit, I think most of the people at the Canadian Covid Care Alliance agree with what I have to say.

[The COVID-19 Pandemic in Canada, Daily Cases and Daily Deaths]
So I want to bring you back to look at the situation with the COVID-19 pandemic, and I have two figures here. The upper figure is showing the incidence of COVID-19 as recorded, based on usually what we call PCR tests. And then the bottom is the deaths that have been attributed, or at least, with COVID-19. Now I have to emphasize that these are deaths "with" COVID-19, but not necessarily "from" COVID-19. I think the data that we have to date is indicating about half of the deaths with COVID-19 were not due necessarily to COVID-19 but the comorbidities that these people had. The average person who's died from COVID-19 has four comorbidities.

So the point of this slide is to really pay attention to wave one. You'll notice that there's almost no incidence recorded. BC had the lowest rates of testing with the PCR test for COVID-19 in all the provinces in Canada. But you can see there's definitely a very large death peak that's associated with this period of time. And what I will be presenting to you is that, in fact, that peak that looks like a low incidence peak at the beginning of the pandemic, is actually when most of the infections with COVID-19, with the agent of that SARS-CoV-2 virus, actually transpired.

[The COVID-19 Pandemic in Canada, % Deaths/Cases]
So if we look at the pandemic in terms of the total number of deaths over the last few years in the pandemic, initially, we can see that for the number of recorded cases, and this is now Canada-wide, it's about 2.7 per cent of the recorded cases appear to be lethal cases. You have to understand that the total number of people who were infected was actually a magnitude greater than that. So the actual death rate from COVID-19 in the general population in the first year was less than 0.3 per cent. Quite different from the values that we were hearing earlier, and I'll show you a little bit later in that. But since then, you can see that the rate, based on the number of testing,

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has improved for COVID-19, but the rate has actually been going down—until recently, when you calculate for the last four months, the rate of deaths per cases is actually going up. There's far fewer cases, but if you have COVID, it seems to be coming back to what we saw before.

Now, the vaccines were introduced into Canada in December of 2020, after a real crash period, Operation Warp Speed, where, basically, from knowing the structure of the virus that causes this disease, we had within nine months a vaccine that was being given to the general public—and that was based on data from clinical studies that, at that point, only had transpired for about two months. And we call these phase III clinical studies. But in reality, they weren't really phase III clinical studies: they were what we call phase I clinical studies. If you have a drug and you're testing it, the first thing you do is give it to healthy

people. And then in the second phase, you adjust the dose of the drug. And in the third phase, now you're giving it to people who actually need that drug: they're at high risk, they have a disease. And in this case, we're talking about a vaccine as opposed to a drug. But actually, this vaccine is a bit more like a drug than any other vaccine that we've ever had before.

So this phase III studies with the vaccine, in fact, were probably more like the situation where less than about 15 per cent of the people that were tested were actually over age 70 years of age—and they are at the highest risk and those with comorbidities are at the highest risk of dying from this virus. And they, in fact, were very underrepresented in the clinical trials.

[COVID-19 Morbidity and Mortality in Canada]
So this is a chart that basically shows the rates of hospitalizations, ICU admissions, and deaths by age. What's really apparent from this is that the risks of death for our children was actually extremely low, likewise for hospitalizations. So to put that for those that can't see the chart, typically maybe during the entire pandemic in Canada, we were looking at a death rate that was about in the order of 10 per million for children in Canada. Now for elderly and the adults, the rates go up more dramatically. So up to 6 per cent of those that are actually over 80 years of age died from it. So it's a virus that actually has been targeting really the sick and the elderly. Our children were never at risk, and this was quite apparent very early on in the pandemic itself.

[The COVID-19 Pathogen – SARS-CoV-2]
Well, the actual agent, of course, is this virus. We all know it fairly well, but I'm going to introduce you to it a little bit more. The SARS-CoV-2 virus: It's very small. A micron is a millionth of a metre, and this is about 150 microns in size, and to put that in perspective, the influenza virus is about the same size. And it's a respiratory virus like the influenza virus, and you acquire it and many of your symptoms are very similar as if you have been infected with influenza. Except influenza tends to be a little bit more deadly in children, where, in fact, the SARS-CoV-2 virus is less deadly in children. Slightly.

Now the thing is the way you acquire this virus is that you breathe it in the air: it's an aerosol virus. And what happens is it gets into your airways and then your upper lungs, and then the virus will spread. This is the same way that influenza does. And what we know from decades of research with influenza, masks are ineffective in preventing the infection and transmission of this virus. It's simple as that. And there have been numerous studies that show this. This was the guidelines from Health Canada even 20 years ago about the ineffectiveness of masks,

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including N95s for influenza. And since then, that's been borne out by additional studies. The most recent of which I've given a reference here is a Cochrane study, which is considered kind of like the "Humble Bible" when it comes to advice on how to handle treatments and disease treatments.

[The SARS-CoV-2 Virus Structure]
So this virus. We knew that there was something going around in China, in Wuhan, in even November, and probably earlier, of 2019. And the virus was isolated, and it turns out to be what we call a coronavirus. As I showed in the previous picture, you can see in an electron micrograph, it has little spikes sticking out of it. It's actually more spherical, the spikes sticking out in all these different directions. But looking down on it, it kind of looks like a

crown-like appearance, and that's why they're called coronaviruses, the crown virus. These are very common viruses. The common cold is caused in part by this family of viruses. There's other viruses, too, that can cause colds. But it's very infectious, the cold coronaviruses. But they do not make you seriously sick that you need to go to the hospital, and you recover.

Now this particular coronavirus, SARS-CoV-2, it actually has a single genome that is made up of nucleic acids; we call this an RNA. This is a single-stranded RNA genome: so within that, genetic material has all the proteins that are required to remake that virus after it gets inside a cell. And the virus itself is a relatively simple structure. It has 29 proteins: These proteins are largely not actually in the virus, but they're produced after the virus gets inside cells to allow the reproduction of the virus. But the key proteins that are on the surface of the virus is the famous spike protein that really sticks out and two other proteins, a membrane and an envelope protein. And within it, there is other proteins we call nucleocapsid proteins that stick to the genetic material, the RNA, that's inside the virus. That little package, which is small, that can easily penetrate through masks, is actually all you need to get infected and have the virus allow itself to replicate.

Now in the genome, which I'm showing in the bottom of the structure, there's actually separate genes within that large piece of RNA that encodes up to 29 different proteins. And so I've just described four of those 29 proteins.

Now what's interesting is the structure of this virus is actually 97 per cent identical to a bat coronavirus. But what you may not be aware of, this SARS-CoV-2 virus does not infect bats: it's evolved from a bat virus, but it's lost its ability to actually infect bats. There may have been additional mutations since the original Wuhan strain, but it doesn't infect rats either—many of the rats that we would have normally used to do safety testing of the vaccines. So it's very similar to, as we heard earlier, about 80 per cent identical to the SARS-CoV-1. And SARS-CoV-2 has sequences that are, again, 97 per cent identical in its structure to the bat virus.

But it has features that are not in the bat virus—including the incorporation of a cleavage site that allows it to be more infectious, that does not occur in the MERS or the SARS-CoV-1, the original 20-year-ago virus. And it has additional sequences that are in the genetic structure of this that basically tells someone who's informed in molecular biology, that does genetic engineering, that it's actually a virus that—it's not possible naturally for it to have these sites, that are key sites put in to allow genetic engineers to do work on the virus.

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So this virus is most likely, and I think most scientists now would agree, that this is actually a genetically engineered virus that was released from a lab, which appears to be the Wuhan lab.

[The SARS-CoV-2 Spike Protein Structure]
The key protein that's in that virus—the spike protein that sticks out—it's very well mapped out, its structure. It actually has, at the back end of the protein, a patch that allows it to stick to membranes on the surface of cells: this does not float away from cells. Normally, the intact structure is that it's anchored through what's called the CT—sorry, near the C-terminus, that transmembrane domain, TM, and it sticks out. And the part that's the top, the beginning, we call the RBD—just near what we call the N-terminus, the front of this. This receptor binding domain, RBD, allows the protein to interact with a natural protein found in your body called ACE2, angiotensin-converting enzyme 2. So basically, the

more ACE2 you have, the easier it is for the virus to attach to your cells and get in. And I think that's all I need to say about that right now.

[SARS-CoV-2 Mutation and Variants of Concern]
So what has become clear is that from gene sequencing studies—looking and sequencing the genome of this virus repeatedly in people who've been infected—is that there's over 27,000 mutant forms of this virus that have actually been sequenced. Over 27,000 different forms. But the forms that we call "variants of concern," have a mutation structure that gives them a special advantage to out-compete all of the other variants that exist and those include from the original Wuhan strain, these Alpha, Beta, and Gamma, and Delta, and we've gotten now to Omicron. And it turns out that there's a whole proliferation of these Omicron variants.

Now this arises because in the replication of the virus, the protein—the enzyme that allows the duplication of the RNA—is error-prone, and it introduces mutations as it actually works. And what's interesting is that if we look at the Omicron variants that we have today, they are just as different from the original Wuhan strain as the bat coronavirus that we think the Wuhan strain came from. But it's still 97 per cent identical. So when you are making antibodies against this protein, 97 per cent of that immune system is just as effective. And I'll come back to that.

[SARS-CoV-2 Variants of Concern, June 1, 2021 – September 10, 2022]
So these variants of concern, they replace each other every few months with new variants. This very colourful chart is data from the BC Centre for Disease Control that tracks these different variants of concern that have emerged. The Wuhan strain isn't even shown on this slide, but it might be at the beginning here. What we can see, for example, with the emergence of the Omicron variants is that in November of 2021, the dominant strain in British Columbia was the Delta strain of this virus. And within a month, it was the Omicron strain. And so, you can have one of these strains displace another strain, a variant, within a month's period. This will turn out to be relevant as I'll come back.

[SARS-CoV-2 Variants of Concern, June 1, 2022 – January 7, 2023]
But what you'll notice in these colours—as you're getting new variants replacing the other variants that are dominant in our population—as you start coming to now more recently, we have a proliferation of different variants. A whole list of over 30 different variants that are all present in our community now. There is no real domination of any one variant. And the reason for that is that the virus has evolved to a point where it's about as infectious as it can be: any change in that will make it less infectious. And it's also more benign. In order for a virus to spread, it's necessary for it to be very infectious and not to hurt the host: so the host does not get sick, and so they will go out into the community

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and spread that virus much easier. And so those variants are the ones that dominate.

[The Innate and Adaptive Immune Systems]
Okay, I want to express just how— And I'm sure you would agree with me that these immune systems, though, are very effective, evolved over millions of years for us to cope in an environment that's completely non-sterile, with parasites in our drinking water and bacteria and viruses and fungi all around us. And so this is a very sophisticated system. This is your defence system against infectious diseases and parasites, and it evolves from hemopoietic stem cells that have the capacity to differentiate into all these different cell types. And while this is a very complicated slide, the main point of me presenting this to

you is to introduce you to the cells that are outlined in the blue area: the monocytes, natural killer cells, dendritic cells, macrophages, basophils, eosinophils, mast cells, and neutrophils. These are all part of your innate immune system, primarily.

Your innate immune system is very strong in young children, and it continues to work as we are adults. But in children, they do not have what we call an adaptive immune system. They haven't been around long enough to become educated to what kind of viruses and bacteria are out there. So they have a very, very active innate immune system. However, as we get infected, we start to have cells produced—T cells and B cells—that specifically recognize these foreign invaders. And the first time that you're infected, your innate immune system is providing you with your best protection. But eventually, after you've recovered and you've educated these B cells and T cells, they can then protect you from future infections. And in particular, the B cells produce antibodies. And those B cells, when the threat is gone, those will differentiate into what we call plasma cells and memory cells: this is your immune memory; this will protect you in the future. We know people that, for example, had the 1918 pandemic influenza—tested even 80 years later—still had these cells in their body that would produce antibodies against the original 1918 influenza flu. So this is really where, eventually, as we get older and our immune systems are working well, we will be able to have a very fast response to the infection by an agent we've seen before, in this case a virus.

[B-cells Produce Antibodies]
So as I said, these produce what we call antibodies. Antibodies are proteins: they are one of the most abundant proteins that you find in blood, in fact. They're composed of two chains that are what we call "heavy chains" and two "light chains." And the important thing to understand from this is that you have one side of it here—the larger end—is what we call the Fab portion: this is what's going to recognize a structure that's going to be in a virus or a bacteria or some sort of foreign protein. And the back end is what we call the Fc portion. Both portions turn out to be very, very important in antibodies. And I'll come back to that in just a moment.

[Natural Immunity with Adaptive Immune System]
However, when you do get infected, and in the case of a respiratory virus, it's going to come in through your upper airways and your upper lungs. And in those zones, the immune cells you have, the B cells, they will secrete a kind of an antibody that we call IgA or IgM antibodies. These are short-lived, maybe about five, six days, and then they have to be replaced by more antibodies. But they're very, very effective. They're secreted into those airway spaces, and they provide very strong protection. And as you'll see, what they do is they bind to the target proteins that are on those viruses. And the back end, that Fc portion, then becomes recognized by cells of your innate immune system, and they recognize it easier and they take it out. So the antibodies are assisting the innate immune system to work even more effectively.

The problem is that the other type of antibodies that you get from an injection in your arm are what we call the IgG class antibodies. These are very good antibodies. They last about 21 days, but they're very low concentrations in the upper lungs and the airway spaces.

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So as a consequence, you don't have a very good response against an infection with the vaccine-induced antibodies because of the nature of the kind of antibodies that are made. They do make some IgA and IgM antibodies, too, from these vaccines, but the predominant one is IgG. And so we know that when you have that production and you get these memory

B cells and plasma cells, the immunity that you have in terms of your antibody levels will remain elevated. And we knew this from SARS-CoV-1, that even people three years later still had antibodies in their blood against the virus. And I can tell you today that this is true also for SARS-CoV-2. That the antibody levels have remained elevated in the blood of people. And the reason for that is when you're getting constantly re-exposed to the virus, it's naturally boosting your immune system. You don't require a vaccine if you've already recovered from an infection because you're naturally going to get exposed to the virus again. It's endemic in the environment, and as a consequence, you have protection.

[Kinexus SARS-CoV-2 Antibodies]
Now I'm going to provide some information on a clinical study that was undertaken at Kinexus. It's a three-year study. We were able to do this because we had unique technology at Kinexus that allowed us to remake any proteins of interest artificially in pieces on membranes. So in mid-January of 2020, the structure of the SARS-CoV-2 virus was actually published. The Chinese government released it. With that information, we could remake all 29 proteins in the virus artificially, in pieces on membranes. And Dr. Winkler has been really instrumental in allowing us to do that at Kinexus and has been involved in a lot of the testing. So I want to acknowledge the incredible amount of hard work he's done in this at Kinexus.

Over three years, we've looked at about 4,500 people for the levels of SARS-CoV-2 antibodies, looking not just at the spike and the nucleocapsid proteins, which is what other research labs have done, but we've actually looked at all of the proteins as potential markers for portions that are very immunogenic—that would provide a strong immune response in the body. Half of the people in our study are female, the other half are male, approximately. And then, we've looked at everything from six-month-old babies through to 90-year-olds in our study. And about 1,500 of them actually have had COVID-19. We know that confirmed from PCR studies.

[ID of Most Immunogenic; Regions with mutations highlighted in yellow]
To give you a sense of how we honed in on the most immunogenic parts of the SARS-CoV-2 virus, here you can see a membrane, and you see a series of a lot of spots. And each spot corresponds to a different portion of the SARS-CoV-2 virus's proteins. In this case, we're only showing the spike protein in the upper portion; the middle portion is the nucleocapsid protein, and the bottom portion, in this case, is the membrane protein. This is three of the 29 proteins that we looked at. We looked at them all.

And you can already see in this particular figure, if you have antibodies against one of those portions, it appears as a strong spot. And this is an overlay from nine different people: their patterns overlay to get a good sense of the overall regions that are the most immunogenic. And you'll notice that I've coloured them, also, on this in yellow. Those are the zones where the mutations occurred in the Omicron virus. And with a few exceptions, almost all the regions where the mutations occurred in the virus are not the regions where people tend to make antibodies.

So your immune response is largely intact against Omicron because it's 97 percent identical to the original Wuhan strain and where the mutations occur it is not, in the regions where you actually have the mutations. And that's very important to understand because again and again, we hear that "the Omicron strain is very different and so, that's why we have more infections with the Omicron because our immune system, including the vaccine-induced immunity we have,

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doesn't work against Omicron." And that's actually incorrect.

[ID of Most Immunogenic]
Now this is, again, a very dense slide, but you'll notice on the right side of the slide that there's what appears to be dot patterns. And basically, every column is a different person. This is a small subset of people that we looked at. So every column is a different person. But every row is a different part of the virus that we looked at. And you'll notice that there's certain regions, like this one here, that's a very strong black line across. All these people we tested—whether they were control, uninfected, which included people from 2018; non-symptomatic individuals that never knew that they had antibodies; through to those that were symptomatic but we didn't have PCR tests, to PCR-confirmed—shown here. You can see that there's some increases that we see in some of these spots. But even people that are non-symptomatic and to a certain extent even in 2018, they already had antibodies in their body that recognized the SARS-CoV-2 virus itself. And they would provide protection against this virus if you were infected.

[SARS-CoV-2 Antibody Pattern]
Now when we tested all these different people— And this is showing a test where we had around 110 different markers that we selected out of the 6,000 that we originally started with. And each membrane here on the one side, on the left, each membrane is a different person. And you can see that the pattern, apart from the control spot that we have here, is different in every person: everybody has a unique immune response to the same virus. On the right side here is the same person tested 10 months later: so the pattern that they have is exactly the same, almost a year later. But from one person to another person, it differs the pattern that you will have.

[SARS-CoV-2 Antibodies, with 41 markers]
And we then went on with that test and narrowed it down to about 41 markers. And here we can see a person who has not been infected. And here we can see five other people as examples of where they've been infected, but the patterns are different. And what's striking is, this D1, D2, D3, D4 spots correspond to the nucleocapsid spot. So our test is based on these peptides that are making parts of the virus. And what happens is that we have concentrations that are at least 100 times higher than what you could get with a recombinant protein—let's say the nucleocapsid protein—put in the tests that are commonly used to do research in this area: so we have a higher level of sensitivity. And because we're tracking more proteins, not just the nucleocapsid and the spike protein, we can actually get better confirmation for specificity because we're looking at other proteins as markers.

And this is just showing you the layout on the bottom here. But the key point is where the nucleocapsid protein is: about half the people that we test that have had SARS-CoV-2 do not make antibodies very well against the nucleocapsid protein. So if you have a test and you're trying to see—are we getting antibodies against a vaccine? The vaccine is delivering the spike protein only, none of the other 28 proteins. So antibodies that you detect against the spike protein could be due to the vaccine or it could be due to natural immunity. But anything that you see with the nucleocapsid protein can only be from actual natural immunity. But we can see in our tests, half the people that have COVID-19 don't make antibodies against the nucleocapsid protein.

So in our country, our health officials have been advised, based on detection of nucleocapsid protein antibodies. Which means that we may be underestimating very early

on the degree of natural immunity in our populations: One, because the tests they're using are very insensitive. And two, about half the people don't really make antibodies very strongly against the nucleocapsid protein.

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[Clinical Study: *JCI Insight*]
Okay, so when did SARS-CoV-2 come to British Columbia? is the real question. And if you look at the BC Centre for Disease Control value, they finally got their act together and started sequencing the genomes of the virus that came in and infected people in BC. And they noticed that it looked more like the genome of the SARS-CoV-2 virus that came via Europe. And so the official narrative is that this virus did not hit British Columbia until really the beginning of March. Now think about that. Here we are in British Columbia in the Vancouver area. We are the gateway to the Orient. You have a virus that has been spreading through the population in China for months before. And the first reported case in North America is in Snohomish County, just south of the border, in a nursing home. And the official narrative is that it really didn't hit British Columbia until really the beginning of March of 2020.

Well, that's not right. And here's why. Firstly, we did a study with the BC Women's and Children's Hospital, and the BC Centre for Disease Control are also co-authors on this paper [Exhibit VA-7c]. And we found that with 276 healthy workers—adults, half of them were hospital workers—that they all had antibodies that would recognize the SARS-CoV-2 virus, not just using our test but using a test from another company Meso Scale Devices [Meso Scale Diagnostics] that showed that 90 per cent of them had antibodies against either/or, either with both or one of the nucleocapsid protein or the spike protein with their test. Then we went in with our test and tested for other proteins, and we confirmed their results and showed that they had antibodies against the other proteins in the virus as well.

This study was done in mid-May to mid-June of 2020. So at least 90 per cent of our population already had been infected—already had immunity—and then later got vaccinated the year following. The question is not really what is the effect of the vaccine on a person who is naïve, who's never been infected with the virus—but what is the effect of the vaccine on someone who's already got immunity?

[Clinical Study – Participants]
Interestingly, in the 1500 people that we tested that said that they actually had the symptoms of COVID-19, we asked them, when did you first have those symptoms? And what we found was that three-quarters of the people in our entire study from the last three years reported first having COVID-19-like symptoms in December of 2019, January, February, and March of 2020: three-quarters of all the people that we tested before "officially" we had the pandemic in BC. During that period of time, there was no restrictions—there was certainly no vaccines—but no restrictions. And so this virus really spread quite prevalent throughout our population. That accounts for why we saw one of the highest death peaks was actually the first wave. We find in our participants that have not been vaccinated that about a quarter of them did get COVID again about two years later. And it was milder for them.

[Natural Immunity Based on Nucleocapsid Antibody]
This natural immunity based on the nucleocapsid detection—even though it's not a great test—we do have data. And one of the things for the panel here, I've been asked, is to make sure that I can provide primary references, so I'm sorry that these slides are very busy.

I've just tried to make the key points here: 75 per cent of the children in the United States, basically, by mid-2020–'22,

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all had antibodies against the SARS-CoV-2 virus, against the nucleocapsid protein. And in England up to 97 per cent of secondary school kids also had it in January to February of 2022. And the BC Centre for Disease Control with their most recent data, where they looked in August of 2022, already reported that 70 to 80 per cent of children here in BC already had antibodies, that they were under 19 years of age, and adults, 60 to 70 per cent of them. And again, this is based on the nucleocapsid antibody reactivity, which is again missing most of the actual infections.

So we were advocating vaccination of our children actually at a time where they already had natural immunity. And the latest data that has come up from the Stats Canada and Health Canada is that we figure now that over 40 per cent of all adults that were infected with the SARS-CoV-2 virus were asymptomatic: they had no symptoms. And we know for children that are under 18, and young adults, that actually most of them were infected and were asymptomatic. So they actually handled it quite well.

Well so, what's the deal? What's the problem then if we vaccinate them anyways? Won't we have "hybrid immunity" that's supposedly superior to our natural immunity?

[COVID-19 RNA Vaccine Mechanism Action]
Well, here's how the vaccine, the genetic vaccines, actually work. And I'll focus on the RNA vaccines because these are the most commonly used. So you have these lipid nanoparticles that are basically like little soap bubbles: very tiny, about the same size as the virus. And within it, it has this genetically modified RNA that has not the whole virus but just that spike protein gene. And it gets inside the cell, and it will be released when there's a fusion of the membrane here. The RNA is released, and that spike RNA is going to be translated into protein, creating spike protein inside the cell. Now this cartoon's not ideal because they're actually in a membrane, which then fuses with the surface of the cell to present the spike protein on the surface of the cell—the same way we presented on the surface of the SARS-CoV-2 virus itself. Except instead of being on a virus particle, it's on your own body cells.

And when you have antibodies that are in your system— I should point out, too, that as you have this foreign structure inside your cell, what we call toll-like receptors [TLR] signaling can tell there's something foreign here, and it actually causes the release of cytokines. And again, cytokines are hormones essentially released into your circulation to signal to your immune system—there's a problem here, you better come and take care of it.

So those immune cells are attracted. And so you can get immune cells—it could be macrophages and neutrophils, dendritic cells, as examples—and those cells will have what we call Fc receptors that recognize the back end of the antibody. So the antibodies are going to stick to this spike protein, and the back end is going to allow the sticking of this immune cell to, in fact, the cell that's producing the spike protein. Now that antibody can also allow the binding of proteins in blood called complement proteins. And you get all these complement proteins—they're what we call proteases—and they create a hole so it actually kills the cell. So your immune cells are there; they're going to be gobbling up the pieces, which includes the spike protein. It goes inside these antigen-presenting cells, presented with what we call major histocompatibility antigens to T cells and B cells that are in your lymph nodes. And then you get your immune response. Okay, so that's how it

works. So the key point here is, in order to get an effective immune response, you have to actually attack and potentially destroy the cell that's producing the spike protein.

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[COVID-19 Vaccine Issues – Poor Lasting Efficacy]
Now, again, as it's been emphasized before, and I think Dr. Hoffe spoke eloquently about all the problems, and I can confirm everything that he said. I'm just actually presenting some of the references for those statements and expanding on them a little bit deeper. But there's complete agreement now: These vaccines do not prevent infection. No one's going to argue that, no health professional. It does not prevent transmission. That is absolutely clear now, too. The argument has been that it reduces your symptoms; you're not going to die, at least, if you've been vaccinated. That has never been proven in any clinical study: there were never really endpoints in those clinical studies. But there is no data that actually supports that statement.

What we do know is that people are dying less from the virus now. But again, the virus is mutated to a more benign form, and natural immunity is very prevalent in our population. So it's not surprising that we're seeing this. So when we look and adjust it for the population that's been vaccinated versus the population that's been unvaccinated— And I'm sure you've heard from the media for the longest time that 99 per cent of the people in the hospital in the summer of 2021 were actually unvaccinated. Well, a lot of the population wasn't vaccinated, and there's very few people who were actually ill at that time. So when you look back, most of the deaths that we had in unvaccinated people was actually during the period of time when hardly anybody was vaccinated in the first place. Okay, so that's playing with the numbers.

The other thing that's been done with playing with the numbers is that if you've been vaccinated and you get COVID within the first three weeks in British Columbia, you are considered "unvaccinated," and that data was lumped in with the unvaccinated. Even though they got COVID and they were vaccinated, they were considered unvaccinated. I'll show you that's a problem. So even now, when we adjust per capita—because over 87 per cent of the population of BC has been double vaccinated, 13 per cent is unvaccinated—when we adjust for the difference in numbers, there really isn't that much difference in the hospitalization rates now and the ICU admissions and the deaths in this respect. Except I'll show you that's not quite exactly right.

[COVID-19 Vaccine Issues – Increased Risk of Infection]
But the key thing here is this data came from Alberta in 2021 that they published on their website up to January 11, and then I guess they finally removed it because it was too embarrassing. So what it shows you is that these are people—this is total case numbers—that if you were vaccinated on day zero here, your chances of getting COVID-19 increased right after vaccination. And this is different age groups here in terms of the colours: these are children down here [red] and these are elderly people in the blue up here, and this is age. But for the first seven days your risk of getting COVID goes up when you get vaccinated; it stays high for about up to day nine, and then it declines as you get an immune response in your body. And now you get that protection, but it's fairly temporary. In the first shot and second shot with the booster, around five, six months. But with each booster shot, the duration period of protection has been getting shorter and shorter. So it's really just a few months, maybe two months now with the fourth shot for the booster in adults. But it's much worse in children.

[COVID-19 Vaccine Issues – Increased Risk of Infection, Quebec data]
Here you can see also that with the third shot, in looking at hospitalization in Quebec data here, that if you were triple vaccinated here, three doses in the purple, you were more likely to be hospitalized than someone who was not vaccinated. Now all of these slides will be available, I'm providing them to the Committee, and you'll be able to have copies of this. We'll probably post them on the Canadian Covid Care Alliance website.
[COVID-19 Vaccine Issues in Children – U.S. Data]
So what about children? Well, these vaccines were especially ineffective in children. One study they've done out of the U.S. looked at 74,000 children,

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5 to 11 years of age at about 6,800 sites across the United States. And basically, what they found was that by four and a half months after vaccination of 5- to 11-year-olds, they actually had a negative efficacy: these children were more likely to get infected than if they had not been vaccinated. And the efficacy after only one month post-vaccination was 60 per cent. This is relative risk reduction, not absolute risk reduction, which is a fraction of a per cent. But by two months, it was down to about 28.9 per cent efficacy. So 70 per cent of the kids by two months, there was no protection from the actual vaccine.

[COVID-19 Vaccine Issues in Children – New York State Data]
When we also look at other studies, here was one done with about 365,000 kids in New York State during the Omicron peak. After five weeks, it was only about 12 per cent effective. So what is happening is in these children, normally, their innate immune systems are very protective. But when you're looking at the boost from these vaccines, it doesn't seem to be working very well.

[COVID-19 Vaccine Issues in Children – Pfizer Report to FDA]
Nonetheless, we've gone ahead and vaccinated children, and we started doing it more recently in 2022 for under five-year-olds. And initially looking at two- to five-year-olds, this study was actually done with the Pfizer vaccine. They had about, I believe around 1,500— Well, they actually had about 1,000 that were unvaccinated, about 2,000 that were vaccinated. And then you run the numbers, and at the end of this study— By the way, none of the kids went to hospital, they just turned out to have COVID as confirmed with a PCR test, which again, at 35 cycles is actually 90 per cent false positives.

But the difference between the vaccinated children and the placebo children was two of them were positives in the vaccinated group and five of them in the unvaccinated group. So the difference of three kids: that's determining whether or not this was an effective vaccine to inject in all these children.

And by the way, this efficacy was only measured after one month. And I would also point out that in that trial, it was originally designed for two shots, and they had negative efficacy after two shots. So they went to three shots, and this is only after that one month after three shots. So that's why these vaccines for children are three shots.

[COVID-19 Vaccine Issues in Infants – Pfizer Report to FDA]
And when they did the babies, six-months-old to two-months-old, the difference between the two groups, very similar study, was a single child. One that was infected in the vaccinated group and two in the unvaccinated group. Again, none of them were hospitalized.

[COVID-19 Vaccine Issues in Children – Reduced Natural Immunity]
Okay. So well, it may not be effective, but is it safe? And again, since most of these children will already have been infected certainly well within the pandemic after two years, and as it would seem even within the first year.

What we do know is that if you have people that were negative from serological tests from being infected, and now you gave them the Moderna vaccine, and then they got infected—because they all do at some point—it turns out that the natural immune response was 40 per cent. Whereas, normally, the natural immune response was 93 per cent after infection with people who had not been vaccinated, these people that are 18 years and older. So you actually downregulate your natural immunity if you're actually pre-vaccinated. And even for a non-vaccinated person with a mild case of COVID-19, there was a 71 per cent chance of having antibodies against the nucleocapsid protein, again, reflecting an immune response. But if you were previously vaccinated, your nucleocapsid response is only 15 per cent. So you have a blunted immune response if you've been previously vaccinated without being infected beforehand.

Well, what's the problem if you're infected, you have an antibody response, and now you get vaccinated?

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[COVID-19 Vaccine Safety Issues]
You might be surprised to learn that if you have a Moderna vaccination on your arm, you're typically getting trillions of these lipid nanoparticles that contain the RNA. And you're going to have between 5 to 10 copies of that RNA in each lipid nanoparticle. And that RNA has been genetically modified, is non-natural, to have what we call methylpseudouridine, replacing the uridine that would normally be in the structure of the RNA, that makes it more stable and less likely to be degraded: so each RNA can be used repeated times to make copies of the spike protein. So what happens is, you can potentially have hundreds of copies of spike protein made from each RNA gene—again, 5 to 10 per lipid nanoparticle. And you have tens of trillions of lipid nanoparticles with each injection. So you're literally producing quadrillions of spike proteins in your body with a single injection.

Now, how does that relate to, let's say, a virus infection or a normal vaccine? Which would be an attenuated virus. You might get 50 to a few thousand copies of that attenuated virus injected in you. As opposed to, like I say, trillions of lipid nanoparticles. Now, again, these are like little soap bubbles; they have no targeting proteins on their surface. So they will travel anywhere in the body, including the blood brain barrier. And they'll fuse with any cell that they're close to and then, in those cells, produce the spike protein.

So this to me—as I showed you earlier, how these vaccines work—if it requires the destruction of these cells that take up the lipid nanoparticles and produce the spike protein, and you're attracting your immune system to those sites, then you're going to get injury at those sites. So imagine that you already have natural immunity and you have a strong immune system, and now you're putting quadrillions of these spike proteins throughout your body: you're going to have a very strong immune response and more damage to your tissues than you would normally have if you weren't vaccinated in the first place.

This is accounting for some of the injuries that we're seeing. But to me, this is a recipe for autoimmune diseases. And we have many cases where an overactive immune system is actually attacking your own body cells. And basically, this is what these vaccines are doing.

[COVID-19 Vaccine Safety Issues – VAERS]
And we know this for a fact because the VAERS system that we talked about earlier, when we look at the total number of reports of vaccine injury, it turns out that actually over 79 per cent of all deaths from all vaccines in the VAERS system—there's over 80 other vaccines—79 per cent of it is from the three approved COVID-19 vaccines in the U.S. You have more reports of injury in general from these three vaccines in the space of two years than all the other vaccines put together for the last 31 years. It's very hard to ignore that.

[COVID-19 Vaccine Safety Issues – VAERS, U.K., EMA]
And it's not just the VAERS system; there's the U.K. Yellow Card system, the EudraVigilance system from the European Medicines Agency, they track this. As pointed out earlier, the CAEFISS system in Canada, only a doctor can report it. They filter it out so that even when doctors do report it, they tend to ignore it in many cases. And what we know with that system is three-quarters of all the reports in that system are from women. And that's true for the VAERS system as well. And it's true also for the VigiAccess system, which is what the World Health Organization has been tracking vaccine injury with for the last 30 years.

[COVID-19 Vaccine Safety Issues – WHO, VigiAccess]
So if we take a look at the VigiAccess system from the World Health, and we look at the total number of reports of adverse events, AEs, there's over four million that are documented, since reporting for that. And if we take a look at all the other vaccines, the closest that we get for adverse events is influenza,

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going back to actually 1968 when you started tracking this.

But in the space of the same time period of a year, you have over 500 times more reports. Well actually, 148 times more reports of vaccine injury from the COVID-19 vaccines than from the influenza vaccines. And there was a period there in 2020 where we had very few cases, apparently, of influenza in the country, barely 100, and most of those were caused by vaccination with the influenza vaccine because it's a weak strain and there'll be some people that will actually respond to it. But you can see here that these are clearly the highest rates of vaccine injury we've ever seen. And one has to wonder: We set up these systems in the first place to identify where we had problematic vaccines. And we've seen signals we've never seen before, and we've totally ignored them. We've actually talked about how poorly these systems actually seem to be working, and it's just nonsense.

[COVID-19 Vaccine Safety Issues – Original 6-Month Pfizer Trial]
Because we can go back to the original six-month Pfizer trial, for example, and there we have a placebo group along with the vaccinated group. And what we could see is that there is 300 per cent more reports of adverse events in the vaccinated group than in the unvaccinated group and a 75 per cent increase in "severe," that's hospitalization, basically, and death. Now, when we look at the actual number of deaths, there was 20 that was in the vaccinated group and 16 in the non-vaccinated group. So to argue with a controlled study, even here: there's no evidence that the vaccines actually reduced the likelihood that you would be hospitalized or that you would die; in fact, it's the opposite.

And a lot of this information was suppressed. Finally, through a court case in the U.S., a lot of the post-release of the vaccine— Again remember, the vaccine was released after only two months of study. This six-month study came out in the summer after people

had already—it had been in the general public. So what happens is they already had in two months, 1,223 deaths that were reported directly to Pfizer related to the vaccines.

[COVID-19 Vaccine Safety Issues – Fertility]
So the question has come up about fertility. And it's been pointed out these lipid nanoparticles travel throughout the entire body. They do concentrate, as pointed out by Dr. Hoffe: about the fourth major organ after the liver, the adrenal glands, and the spleen was the ovaries. And we know that over 40 per cent, in multiple studies now, of women that are vaccinated have menstrual issues: heavier bleeding or prolonged bleeding and including, also, in post-menopausal women that they would have bleeding. So the control of the period is through the hypothalamus, the pituitary, and the ovaries. It's hormonally regulated. So we can tell that those organs are being affected by those lipid nanoparticles.

And likewise in men, what we do know is that sperm counts drop. And those drops is about 15 per cent. They do recover in about three to six months. But it does show you that the gonads are affected by these. And in the case of women, my personal concern, because I do research on oocyte maturation and conversion of oocyte into eggs—that's what happens with every period—is that a young baby girl is born with all the oocytes she's going to have for the rest of her life. If there's inflammation and damage to those ovaries, she may very well end up with fewer oocytes; even though there may be a healing process, she'll have less oocytes, which increases the risks that she will go into menopause sooner and will become infertile. Overall fertility rates have dropped over 10 per cent since vaccination started. But there's a variety of reasons that that that could be, but I think this is potentially one of them.

[COVID-19 Vaccine Safety Issues – Myocarditis and Myopericarditis]
One of the biggest risks that's been identified is myocarditis and myopericarditis, the muscle around the heart, that we are seeing a very high risk of vaccine injury, particularly in males after their second shot of the Moderna and the Pfizer RNA vaccines. And the risk seems to be, well,

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Ontario actually calculated the risk fairly early on: it was about 1 in 5000 with the Pfizer vaccine. The BC Centre for Disease Control actually did a study, which they published. They see with the Pfizer vaccine after the second shot about 1 in 7800 for symptomatic, and I emphasize "symptomatic myocarditis." But in the same study, they show that with the Moderna vaccine, the risk in 18- to 29-year-olds is about 1 in 1900. That's incredibly unacceptable—even though the publication felt that from their data, these vaccines were safe from a standpoint of myocarditis.

Now that same publication showed data from 12- to 18-year-olds with the Pfizer, and the risk was very similar to the 18- to 24-year-olds. But we know from other publications that for the Moderna, the risk is greater and especially greater for the 12- to 18-year-olds. And that data was omitted or certainly was not recorded in the study that the BC Centre for Disease Control published, which is where I would expect there to be the greatest amount of problem with these vaccines.

And the reason why we know these people have myocarditis is because they go to the hospital. If you have symptomatic myocarditis, you will be in the hospital—about 98 per cent of the cases. But we do know that many people can have the same damage, but if they don't exert themselves, they are asymptomatic myocarditis. And from what I've been able to see from the literature, it seems that for every symptomatic case, there's about 3 cases

that are asymptomatic. So that means those numbers that I gave you, you can divide them by 4—that the actual damage is occurring in these young men.

One of the few studies that was done was a Thailand study with 301, 13- to 18-year-olds. They had about 201 males and 100 females. And what they found was they actually looked at each person in that study for damage to the heart. And 29 per cent of them had damage to the heart that they could see either biochemically through the production of a troponin protein—a heart protein that isn't normally in your circulation—or actually MRI imaging. And when you calculate out the cases they found that were "asymptomatic" pericarditis or myocarditis, it was mainly asymptomatic here, there was 1 in 29 of the males—1 in 29.

[COVID-19 Vaccine Safety Issues – Case Study]
So well, how is this possible? Why do we see this? Why would the heart be attacked by the immune system when you've been vaccinated? And as pointed out earlier, we're finally now starting to see immunohistochemistry studies of where people have died and the tissues are examined and stained to see whether or not they have spike protein produced or nucleocapsid protein produced. If you had both, you could argue that well, that's from the virus. But if you have again just the spike protein and haven't had COVID recently, then you start to think well, it could be the vaccine.

So here I'm showing you data from Dr. Motz; he's a pathologist and here's the staining. Now this person died from Parkinson's disease 3 weeks after they were vaccinated. So there was extensive spike protein in the brain. But this is the heart of that person. So in their heart, you can see the production in the orange here that's indicating the presence of spike protein. And again this is produced by the vaccine. And these little dark blue, these are cells of the immune system that are here.

And I've seen extensive work, and we talked earlier with Dr. Hoffe about Dr. Burkhart's data. At the Canadian Covid Care Alliance, we had an interview with him, which is actually posted on the Canadian Covid Care Alliance. And for about an hour, he showed us all these tissue slices from autopsy, people who died

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not as vaccine injuries: but 70 per cent of those people, after their analysis, they interpret them as vaccine-injury deaths. And the spike protein production here in those slices often shows infiltration of immune cells like we see here. And by the way, this is the nucleocapsid protein here; there's no staining of the nucleocapsid protein. What we see is that there's also extensive tissue damage in those zones where, in fact, the immune cells have come, where the spike protein is being produced. So the mechanism for the myocarditis is pretty plainly evident.

[COVID-19 Vaccine Safety issues – Myocarditis]
And people have argued, well, you know, COVID-19, the vaccines: if they get myocarditis, it's a mild case of myocarditis. I have to emphasize to you that myocarditis, the damage is permanent: It's not reversible. It only gets worse. The infiltration of immune cells, as shown in this figure here to illustrate the heart muscle cells, kills those muscle cells. And those dead muscle cells are replaced by scar tissue. And the surrounding muscle cells have to get bigger to carry that load to pump the blood. Sometimes in myocarditis, it may be that there's certain zones that are affected with the inflammation—that you get arrhythmia happening when the person is exerting themselves—and then they can get a heart attack.

So when you have a bigger heart, when you're exerting yourself, you have more blood pressure in the future, and you're more predisposed to cardiovascular disease, which is almost the major cause of death for people next to cancer. They only differ by a few per cent from each other in Canada.

[Athlete Collapses and Deaths – January 2021 – December 2022]
So we've seen this, over the last few years, we see more and more reports of athletes collapsing on the field. And what's kind of disconcerting is that about three-quarters of them that have been recorded, they've died from that collapse. So it's about ten times the average of what we normally saw prior to the release of the vaccines.

[COVID-19 Vaccine Safety Issues – Reported Deaths for Major Drug Recalls]
And so one wonders: well, look, if you got these deaths, and it's about 35,000 deaths reported in the VAERS system now, how many deaths does it take before you actually terminate the programs for these vaccines with the COVID-19, especially genetic vaccines?

And to illustrate this, the closest that we have for any drug or any vaccine to where the decision was made to suspend that particular treatment was Vioxx with 6,000 deaths. And as pointed out earlier, where we have some vaccine deaths, even after ten, we stopped those programs. But what we're doing instead, now, is we're going to use this technology for influenza vaccines and other vaccines that we plan in the future to give to our children. Because they're amongst the most heavily vaccinated in terms of [life.]

[COVID-19 Vaccine Safety Issues – All Cause Mortality, Ages 0–44]
So we've talked a little bit earlier in some of the presentations about all-cause mortality. All-cause mortality, you can't fudge the data. I mean, whatever they died from, the increased amount of death, you can try to correlate that. Here we can see for under 44-year-olds in Canada, there is an increase in all-cause mortality that actually is coincident with the lockdowns. And again, that's probably dealing in part with suicide. And also depression, anxiety, these reduce your immunity, and with reduced immune system, you're more likely to get cancer and other diseases. And then, it was starting to kind of come down, and then we started introducing vaccines and it went back up again.

[COVID-19 Vaccine Safety Issues – All Cause Mortality in BC]
Now I looked in British Columbia, and we can go back to 2010. So look at the scale here, 6,500. So starting from here, so this is really excess mortality above historic averages annually. What's shown in the yellow is the component—so it goes right to the top—but the component that's due to illicit drug deaths. So we can see illicit drug deaths accounted for more deaths than COVID

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in 2021, in BC.

Likewise, even more so compared to COVID in 2022. Interestingly, in 2021, we don't see as many deaths per million people in BC. We have about 5.3 million people in BC. So you can take these numbers and multiply them by about five. Here, we can see the heat wave in 2021 has actually killed a lot of people in one week from the heat wave, in comparison. So in BC, about 110 people die every day from all causes. And of that component, even at the peak, only about three and a half deaths per day average from COVID-19. And in terms of all-cause mortality, it's more than 90 per cent of it, at any stage, was due to other diseases rather than COVID-19.

[COVID-19 Vaccine Safety Issues – All Cause Mortality, England, 2021–2022]
Now I'm coming close to the end of my presentation. This data is the cleanest data that I've been able to see. It was recently published on the website for the healthcare system in the United Kingdom. The reason why I like this data is because it completely separates people who have been vaccinated from unvaccinated and those that are in that short window of two weeks where they're vaccinated, but they would normally be counted as unvaccinated. They did not do this in this data set, and they also, at the same time, had the different gender and they had different age groups. And so this is all age groups being shown here. Now this is starting when they began this study in April of 2021, so soon after the release of the vaccine.

Marion Randall
Dr. Pelech, just given it's getting very late, I'm just wondering if you would consider wrapping it up so we can move to questions?

Dr. Steven Pelech
We're just about done.

Marion Randall
Yes, please. Thank you.

Dr. Steven Pelech
Yeah. So what we find is that the risk, and this is adjusted per population, so it's age adjusted as well. If you were vaccinated prior to Omicron—this is this period here in December of 2021—you were more likely to die by four- to five-fold than if you were completely unvaccinated, in the blue. And once Omicron came along, if you were double vaccinated, you were about two to three times more likely to die if you were vaccinated than if you were unvaccinated. And since then, the risks have declined. With triple vaccination, there seems to be a protection during this period, but the difference between the unvaccinated disappears by about March of 2022. But you remain more likely to die of all causes if you've been vaccinated. Okay, so that's what the data is showing us.

[Canadian Reaction to COVID-19 Vaccines]
So the reaction of Canadians to this has been that we have a very high degree of compliance: in this case, depending on the age group, certainly the elderly over 90 per cent, and they completed their vaccination series. But in the last six months, we see less than 5 per cent of zero to four-year-olds have been vaccinated, 7 per cent of five- to 11-year-olds. And if we look at the elderly, 60 years and older, there's been a high degree of noncompliance with the government. So thankfully, I think people are getting the message that these vaccines are not only not that efficacious, but they're also not safe.

[International Reaction to COVID-19 Vaccines]
And this has been recognized by countries around the world with their regulatory agencies that have decided that they will not vaccinate children, and in many cases, they will not vaccinate anybody unless it's recommended by a doctor. And for example, in Switzerland, the doctor assumes the liability.

So that's the end of my presentation. And thank you for your patience.

Marion Randall
Questions from the Commissioners, please.

Commissioner Massie
Thank you very much, Dr. Pelech, for this presentation. I have a couple of quick questions. The first one is the study you've done in following the infection, using your method for in the clinical trial.

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My first question is that given the importance of this pandemic, I mean, this kind of research should have been probably prioritized by the government in order to get a good picture of what's going on. So what kind of support did you get to carry on with this research?

Dr. Steven Pelech
Yes. Really none from government. We applied for several grants early on and we didn't even make the stage of letter of intent/acceptance to submit a grant application. There has been some funding given to other organizations, like Ab-C in Toronto using the nucleocapsid and the spike protein assays. Again, they're very insensitive. And I believe what happened is they're claiming that no children really got infected in Canada until Omicron hit. They're assuming that really for two years, children evaded getting infected with the virus, only 5 per cent of the population. And it's because of the inadequacy of the tests. So in fact, serological testing should have done early: it should have been recognized that if you have an antibody response already, you've been infected, and you should not have had to been vaccinated. And health care workers in BC should have been able to be tested. They were the most likely to be infected early, and no nurse or doctor or any other health professionals should have been fired because they refused to be vaccinated.

Marion Randall
So if there are further questions and answers, can we keep them focused? Further questions?

Commissioner Massie
Yeah, well just to continue on that. Now that your data is out from the study, I know you probably continue to accumulate more data. So your data is available someplace so it can be consulted by government agencies?

Dr. Steven Pelech
Yes. Some of the work has already been published, as I've shown, in *JCI Insight*. We just finished the study. So it takes a while to put all the documents together, but our intent is to publish it in a peer-review journal.

Commissioner Massie
So did you get any feedback from the preliminary data that you put on your site?

Dr. Steven Pelech
Yes, I mentioned the data to a lot of people that are scientists across the country. But it's been kind of ignored at this point. But that's why it's so important to make sure that the study is very well documented and that the data is irrefutable and published in a peer-reviewed journal, and then we'll see, probably a better acceptance.

Commissionaire Massie
My other question has to do with the liposome and the mRNA. You've shown on your cartoon that the liposome will actually through the TLR system, trigger some sort of interferon response, which in a way could be good in order to prime the innate immune system. But there are a few studies showing that the structure of the mRNA with the pseudouridine in fact dampens the interferon response. So is there some sort of a—

Dr. Steven Pelech
Right. Yes. There's different reports in this regard. But we certainly are getting an immune response. And I think the production of these cytokines is thought, at least, to be part of the mechanism of how these vaccines are supposed to work: that's what the manufacturers of the vaccines have argued. So I think it's likely that it does happen because it is a very foreign situation inside the cell. And the cells have evolved to recognize when something's coming in that's non-natural. So it's probably the lipids, that are non-natural lipids, that may be triggering that kind of a response with the TLR receptors.

Commissioner Massie
So how would you explain the spike of infection following vaccination? Do we have any hypothesis?

Dr. Steven Pelech
Oh yeah, it's very simple. My interpretation is you've got quadrillions of spike proteins expressed throughout your body. Your immune system has only certain capacity and it's very mobile. So what's happening is it's going to fight the spike protein on the surface of your body cells, and it's less available to take the virus that's coming in through your airway passages, and so it's a competition for attention. And so that's why I think you're more susceptible to getting infected, especially when you're being vaccinated in the midst of a wave—that that's what's happened.

Commissioner Massie
So what seems to be happening throughout the pandemic to come to the stage where we seem to be in the Omicron-era

[01:30:00]

with a virus that is not that pathogenic. But normally, this is what happens in this type of infection if we don't intervene: that is, it will subside because, eventually, the immune system will control it and it will become less and less pathogenic. But because we have intervened very systematically with this vaccination and the vaccination seems to somewhat affect the equilibrium of the immune system—is that the reason why the infection or pandemic seems to be prolonged in our country and not in other countries where the vaccination was much lower?

Dr. Steven Pelech
Yeah, I think a lot of people would argue that the vaccination has prolonged it. What we know with SARS-CoV-1 back 21 years ago, there was no vaccine. The virus seemed to disappear. And it was a more deadly virus than SARS-CoV-2. It never disappeared. I suspect what happened was the population had developed immunity. That there was variants that started to be produced. We didn't have the PCR technology to really track it in those days. So I think the virus has evolved, and we were continually probably being re-exposed to SARS-CoV-like viruses for the last 20 years. And that's why even young children have antibodies against this virus, pre the COVID-19 pandemic. And it's evolving to becoming more like a common cold.

Commissioner Massie
So if the vaccination, aggressive vaccination campaign seems to make things worse and prolongs the pandemic, what would be your prediction if we rapidly stop vaccination? Would the evolution of the pandemic subside like it happened in countries where there was less vaccination? Or we will still be struggling with the side effects that the vaccination has done to the immune system?

Dr. Steven Pelech
Yeah, well, I think what happens is most of the people who have been vaccinated, they will have been initially harmed, but they will recover. We're probably talking about one in 400 or that range that maybe have permanent damage. In terms of exposure to the virus, they're constantly going to be exposed to it probably seasonally, and most of them will have no symptoms. And it will just spread in the environment and early on, again, being a more benign virus, I think it's no longer a threat to our society. Those that are really elderly, fortunately, we do have drugs now, Paxlovid and others, strategies that we could help those people if they do get infected.

It's not the point of my presentation today, but certainly we could have better treated the people who originally got COVID-19. Most people that have died of COVID-19 didn't really die from the virus—they died from pneumonia. And treatment with antibiotics probably would have been very helpful but was not generally applied early in the pandemic.

Commissioner Massie
So if I summarize what you said about the natural immunity and the vaccination. Should people get their booster next time?

Dr. Steven Pelech
No, no, I don't think anybody should get a booster at this point.

Commissioner Massie
Even the vulnerable, people—

Dr. Steven Pelech
Even people that are vulnerable. Because I think what's happening is they're developing tolerance. When you're repeatedly exposed to an immunogen in high doses, your immune system has learned to recognize what's in the environment normally and what's really

strange. And so when you constantly are boosting yourself, especially expressing this spike protein on the surface of your own body cells, the immune system develops tolerance. And we can see this already with the third shot, the class of antibodies, IgG antibodies that are created, they're converting to what we call Ig4 class antibodies. And these are important in the development of tolerance, which means that those people will be more likely to be susceptible to infection. Their immune system won't work as well in the future if they get re-exposed to the virus, which they will.

Commissioner Massie
Thank you.

Marion Randall
Are there any other questions? Thank you so much Dr. Pelech. That was very enlightening.

Dr. Steven Pelech
Thank you.

[01:35:10]

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