

Ep 59 Corona Virus Update and Practical Advice - Dr. Paul Mason

Find out more [@ ihda.ie](http://ihda.ie) and TheFatEmperor.com

Ivor Cummins	00:24	Hey, this is Ivor Cummins in Denver. And I'm just going to do a quick chat with Dr. Mason on coronavirus because everyone's asking about it. It's very topical. So hey, Dr. Mason, how you doing?
Dr. Paul Mason	00:38	I'm well, thanks Ivor. Always fun to chat.
Ivor Cummins	00:41	Absolutely. And you're in Australia now in Sydney, right, at home?
Dr. Paul Mason	00:46	It's a Friday morning at 10:30 here in Sydney.
Ivor Cummins	00:50	Well, it's around 5:30 PM in Denver. I just go over from Ireland yesterday. Before the travel ban. Though interestingly, the Trump travel ban, the contiguous states of Europe that have no borders. So Ireland and UK is not involved. So I'm okay.
Dr. Paul Mason	01:08	Which is just as well, because the UK has more higher rates than some other countries in Europe. It's an interesting decision that one.
Ivor Cummins	01:17	Yeah, I'm sure there's a lot of politics involved along with the medical stuff. But I think the coronavirus, yeah, everyone's asking about it. I put out a few tweets. Again, data centric, I'm not getting into judgment calls on, you know, who's more important than others to protect. But I'm really interested by the mortality rates and the ambiguity, it is early days. So maybe we talk about first, the probable eventual mortality rates in western kind of industrialized societies maybe?
Dr. Paul Mason	01:49	Well, I think this is certainly gone everybody's scared. The simple fact is that most people who get it will get a mild illness. So based on the data coming out of China, so one study that looked at 44 and a half thousand participants (subjects), 81% of them actually had a mild illness. So that basically means that it didn't affect their lungs, they didn't have trouble breathing, they didn't have pneumonia. But that means the remaining 19% actually did have a more serious illness. And based on the latest figures, and I know you've been reading some really nice research out of South Korea this morning, what we call the case fatality rate is probably about 0.6%. Which is a little bit lower than what was coming out of the Chinese data, which was indicating something in the vicinity

of 1.6. And that's probably because the South Korean data is more effective testing and they're picking up a lot more of the minor cases, which is able to bring down the average mortality.

02:54 Now, for comparison, we should probably compare this with the seasonal influenza, which has a case mortality rate of about 0.1%. So if we'll try to do a direct comparison, you would probably say based on the South Korean data, the coronavirus, the COVID-19 appears to be about six times more dangerous.

Ivor Cummins 03:17 Yeah, probably similar to the flu. I'm not sure it's tracked so well though. There's this huge bias towards older people. Not too surprising. But also people with coronary vascular disease, cancers, diabetes, respiratory illness, COPD. So it looks like around rough and tough eight to 10 times more likely to have a fatality, if any of these comorbidities and then there's probably a 10 times risk more for being in your 70s and 80s. So if you put the two together, it seems to be kind of massively stacked towards older and with comorbidities, would that be fair to say?

Dr. Paul Mason 04:00 Oh, absolutely. So if I'm looking at the data coming out of China, less than 2% of the infections were actually in children. And they were much more likely to have what we call an asymptomatic infection; they actually weren't that ill. And probably the biggest risk factor is age, but that's probably purely because it's associated with other comorbidities, the lack of which you've indicated. So if we actually have a look at some of the data, so people with heart disease, the death rate of those with coronavirus and heart disease was 10.5% in one study. If you had diabetes, it was seven and a half percent. If you had high blood pressure, it was actually 6%.

04:43 I think this raises a couple of several important points because diabetes is an independent risk factor for heart disease and in itself has been an independent risk factor for these conditions. We know from history with another coronavirus the MERS virus in the Middle East, but diabetes was shown to be a significant factor in increasing mortality risk. But when we look at the literature, it's probably not diabetes itself that is the big problem but the unstable blood glucose levels that come with that. And the reason that's important is because we can potentially have patients control their blood sugar levels literally overnight on healthy ketogenic style diets. The current data suggests...

05:40 The early evidence suggests that if you have diabetes and you get COVID-19 and your mortality is increased by two to three times. But probably if you have stable blood sugar levels mechanistically because it's the high blood sugar levels that have been shown to associate with suppression of the immune system, your risk of dying will probably come right down. In terms of some of the other risk factors, smoking is a big one. So elderly Chinese smokers was a big one. So if you're smoking, now is probably a good time to consider stopping or finding a safer alternative like vaping. If you have high blood pressure, that's been shown to be a significant risk factor, and that has an interesting connection, because there's been a lot of debate in the medical literature about whether some high blood pressure medication for Angiotensin-Converting Enzyme inhibitors, or Angiotensin-Receptor blocker drugs may actually increase the risk. And this is because these drugs are shown to increase something called ACE2 in the lungs, which can actually act as a portal for entry for the COVID into the body.

06:47 But as yet, the medical literature hasn't reached a conclusion on whether or not people taking these high blood pressure medications should actually stop these medications and change them for other types. But I would certainly suggest that if anybody's on those medications, you keep a close eye on the news reporting on this, because if it does turn out that these drugs are problematic, then that's certainly an easy thing that you can do to reduce your risk.

Ivor Cummins 07:14 Yeah, and indeed, hypertension is not synonymous with insulin resistance, hyperinsulinemia with a huge amount of undiagnosed, idiopathic, relates very strongly to hyperinsulinemia and blood glucose metabolism issues. So not too shocking that coronary disease, diabetes, hypertension are all clustered together as big risk factors.

Dr. Paul Mason 07:39 You can almost say there's a pattern. But I guess, and a lot of the question is, you know, if people say, "Well, what happens if I do get it?" As I said, most of the time, if you're young, healthy, no [Inaudible 00:07:52], it's probably likely to be quite a mild illness. And for mild disease, the World Health Organization suggests that recovery is probably going to be about two weeks. If you have more severe disease, it could be three to six weeks.

08:05 But the problem is that these people who could potentially have the disease for six weeks can end up in

Intensive Care Units and this could very easily overwhelm the health system. And the reason for this is because... the severity of the condition is potentially six times more lethal than the standard flu, it's incredibly contagious. It's very transmissible. So if we have a look at something called the reproduction number of a disease, which is a good indication of the transmissibility, and basically a reproduction number of less than one means that if I have a condition and I go into a room of sick people, then I'm only going to pass it on to less than one person, so that disease will eventually die out. Whereas if that number is more than one that means the disease will gradually propagate. So the standard flu has a reproduction number on average of 1.28, whereas Coronavirus, the best estimate we have is it's got a reproduction number of 3.28, which means it's incredibly contagious. People who get sick might be in hospital for six weeks. If a lot of people get it, this could very easily overwhelm the health system. And the problem is that we have something called this exponentials spread, because the incubation period on average is about four days with the interquartile range or the middle 50% usually being symptom free for about two to seven days before they come down with it. So we've got this big group of people who could potentially be infected, we're not yet showing that we don't know about.

09:43 So for instance, if we had 1000 people who we know have the condition at the moment because they're symptomatic, most of these were probably incubated somewhere between two to 10 days ago, then the number who a symptom free who are gone as soon present in the future would be predicted to be in the tens of thousands, in the order of 20,000. That is what we call exponential spread. And the problem is that if this gets out of control, while we have the medical technology to help people with this condition when a fully resourced sense, if we have too many people needing ventilation on ICU care at any point in time than the capacity of the health system, and it doesn't matter if it's in a Western nation or not, we'll be overwhelmed.

Ivor Cummins 10:30 And this is flattening the curve. So pretty much most people are going to get it in the next couple of years anyway, especially with the transmission rate. So that's kind of [Inaudible 00:10:40], I guess. But if we can spread out how quickly they get it, we can let the medical system take care of people properly. So that's the key thing.

Dr. Paul Mason 10:48 Exactly, exactly.

Ivor Cummins 10:51 And the refractions are actually not too difficult to avoid. You've got a neat re-separation ideally, certainly the hands and surfaces being cleaned, don't cough or sneeze without covering completely, because that's obviously a hyper transmission.

Dr. Paul Mason 11:09 Yeah.

Ivor Cummins 11:10 You did all that and avoided large congregations of densely packed people, and it would make a big difference in spreading out and flattening the curve.

Dr. Paul Mason 11:22 100%. I mean, this is a public health message from our favorite Irishman. Basically, social isolation is the key to flattening the curve. So it's very possible that most of us are going to have this within the next couple of years. But the point is that we want to try and avoid spreading it too rapidly, which even the most advanced health system will collapse.

11:44 It's really spread by respiratory droplets. Now there is some debate about how far these travel. Usually they go no more than one or two meters respiratory droplets for somebody coughs or sneezes. There is a bit of conjecture about whether they may remain airborne for a while. We truly don't know the answers at the moment. But the idea is that if we cover ourselves when we're coughing or sneezing, and this is where masks might actually come into their own, because they're actually not very good to protect you from disease but they can actually prevent the spread. We don't know how effectively, but if they catch a lot of droplets and stop them being aerosolized, then you'll be in a better state.

Ivor Cummins 12:26 Oh, yes. I mean, a large hanky, if you've got a snuffle, well applied, would probably massively reduce the number of droplets that get out.

Dr. Paul Mason 12:38 Tissues are recommended because they can be disposed of.

Ivor Cummins 12:41 Yes.

Dr. Paul Mason 12:42 Oh, use the crook of your elbow. Just in terms of masks, I mean, I've got a couple of masks here just for... I just have them lying around from my medical kit. Funnily enough, I didn't actually get these specifically for Coronavirus. This is actually probably the one that I travel with athletes just to help them stop spreading an illness. Any athlete I've had with a respiratory illness, if we're on a bus situation or something

else, "Please wear this mask." you can see it's not going to fit particularly tightly, it'll just go around over the years here. And if it's respiratory spread, air still comes in when you breathe and you're still potentially going to be infected. So this will stop reduce the risk of spread, but it won't stop you getting infected.

13:29 To stop you being infected, you actually need a special mask. This is actually an example of a duck-billed N95 mask and they're actually a real chore to wear properly. They actually open out. We've got these two straps at the back here. And that actually gets worn over the... has to seal incredibly tightly, and when put it on properly, then it actually basically creates a vacuum every time you inspire because there's no room. And these actually do lose their effectiveness over time as well. So you can't go around in the community. If you're going to wear an N95 mask, it's just going to be, possibly suffocating and claustrophobic for a prolonged period of time. If I'm exposed to it as a healthcare professional and I'm in a treatment situation where I end up looking after people with COVID-19, then this is the type of mask that I will be wearing

Ivor Cummins 14:23 Pretty good. So they're the masks. And a lot of questions that get asked and there's a lot of buzz, and I'm simply not replying. I'm getting a ton of questions in Twitter and Facebook about supplements and whatnot. And I think there's no room, there's no magic around supplements. It's simply a no brainer that the least insulin resistant you are, the healthiest you are, obviously no sugars, no vegetable oils, the healthiest state you're in, and of course you're right down to the very low mortality and the curve. And it's probably fair to say just like for any health longevity play, magnesium, selenium relates to the immune system, you know, getting healthy sun exposure or UV for nitric oxide and for all other types of health promotion, you know, the usual set of vitamin supplements and minerals would apply here to be the healthiest you can be on top the least chance of a very adverse reaction. But again, no magic. What do you think?

Dr. Paul Mason 15:22 100%. I mean, and that's the reason we talked about the risk factors. You can't change your age, but you can change if you have unstable blood sugar levels, you can change if you smoke. You might not be able to reverse obesity overnight, but you can certainly improve metabolic health. And given that this is going to be with us for several years. But I would predict, there is certainly time to make changes to your health before it strikes. And it's also probably an opportunity to address cholesterol as well.

15:54 So, a lot of people are worried about going on a low carbohydrate diet which will improve their blood sugar levels because it will actually make your cholesterol levels go higher. If we actually have a look at it, so there was one 1987 study that was done in California that followed people for over 15 years. And what it actually found is that the higher your total cholesterol level, the lower your risk of being admitted to hospital with pneumonia and influenza. And this effect was strongest in people who were oldest. So in terms of total cholesterol, we don't have experimental designs, and obviously it hasn't been specifically studied for Coronavirus. But with regards to other respiratory pathogens and pneumonia, high cholesterol levels certainly is indicated that it's likely to be protective. And if we take a look at a subset of total cholesterol and look at LDL, you'll see a 2007 study that found an association between low LDL levels and fever and sepsis which is basically uncontrolled infections.

16:57 And so they basically looked at if you had an LDL of less than 70 which works out to be 1.8 millimoles in Australian units, that was associated with a five times increased risk of death by infection. You would actually feel comfortable if your LDL was above that threshold based on the findings of the study. And if we have a look at HDL, here's another paper that was incidentally just published in January earlier this year. And that found that low HDL levels were also associated with increased risk of death in septic patients, basically patients with widespread infection. And it was basically, if you had a level of HDL that was lower than the medium, then your risk of death from sepsis was **double**.

17:43 In terms of the cholesterol impact of ketogenic and low carbohydrate diets on your risk factor for basically surviving a COVID infection, it would be suggested that higher cholesterol levels will routinely be a positive thing.

Ivor Cummins 17:59 Yeah. And you know, those two points, firstly, the LDL, there are all these associational studies, as you say, Paul. Well also we know now from many mechanistic studies that the LDL particles have a multiplicity of roles. And one of them very strongly it's becoming more clear is the immune system functionality, actually binding to pathogens and deactivating them and then getting cleared. So the LDL goes up this immune function for your benefit. And on the HDL, I guess, I'm not so much sure the HDL particles would partake so much, but a lower HDL means insulin resistance, which of course...

Dr. Paul Mason 18:40 Oh no. The HDL itself has actually mechanistically been shown to be involved in the immune response. It's definite biological plausibility. So these aren't just quick environment, some epidemiological associational studies; they are actually supported by biological mechanism.

Ivor Cummins 18:56 Yeah, and I would agree. I'm not so clear on the HDL particle functionality, but certainly it's a massive proxy for insulin resistance also. But either way, the low carb keto is going to improve all of those lipid related kind of quantum or quanta and it's going to resolve insulin resistance and blood pressure or blood pressure too, blood glucose spikes, basal high levels of insulin and hyper insulin. So a huge amount to play to there to move you in the right vector towards exposure to a serious response to Coronavirus. So that's all good news.

Dr. Paul Mason 19:35 We don't know specifically how this will interact with COVID-19, but we can say that in general, the ability to fight infection in specifically respiratory infection appears to be better with higher cholesterol levels.

Ivor Cummins 19:54 Interest to a lot of people who generally perceive higher as worse in all circumstances, it's more complex than that. It's not necessarily the case at all

Dr. Paul Mason 20:05 Yeah. And probably a topic that is close to your heart at the moment, you know, having travelled across from Europe and being a bit jet lagged at the moment is slim. We've got experimental studies that show that sleep deprivation results in poorer immune function. And this could include things such as natural killer cells, which incidentally, one of the first lines of infection against viral infection. You know, we have reduced levels of Interleukin-2 and we have increased levels of these pro inflammatory cytokines, all associated with sleep deprivation.

20:44 When we give people immunizations, say against the flu, or a hepatitis, we've actually shown that sleep deprivation will actually impair the immune response to those vaccinations. Once study in 2009, they found that if you were sleep deprived, then if they gave you nose drops with a rhinovirus, your chance of developing and becoming symptomatic with that induced infection was increased by about three times, 2.94 times. And the difference was if you're sleeping less than seven hours or sleeping more than eight

hours. So these people who think that you know, seven hours is probably sufficient, I think if you're really wanting to try and boost your immunity as much as you can, I think you really are going to be striving for eight hours or more. So if you're really going to be taking care of your sleep hygiene, you can have a regular bedtime, you're going to not be exposing yourself to bright lights, you're going to be controlling your screen exposure, you're going to be making sure the room is actually cool.

21:45 We know people sleep better when the temperature is about 19 and 20 degrees. We know if you share a bed with a partner and you like to engage in the doona wars, (that some couples do) that you should have two separate doona covers. This is what Scandinavians do that really improves their sleep. There's a multitude of things that you can do to improve your sleep. But rest assured, if you want to have optimal immune functioning, then you need to be having optimal sleep.

Ivor Cummins 22:10 Absolutely agreed, Paul. And you know, the sleep as well and other kind of vectors, it has been shown in studies that by depriving sleep down to I think four or five hours for just a couple of weeks, there was a halving of insulin sensitivity, and one of the first lines of infection is as well shown an increase in free fatty acids in the blood and blood glucose, cortisol. So sleep is a hugely reparative process. And if you go in on it, your system is simply not going to be near as effective. So great point there.

22:40 So I think we've covered the basics, we want the list to be short and sharp. This is just from my Denver hotel room in the Sheraton. Is that pretty much it? That's a good short sharp summary of Coronavirus and what you can potentially do to avert it.

Dr. Paul Mason 22:54 Look, I think there's probably one more point which may be raising. I was reading some guidelines that have been disseminated to the public and they're recommending that if you have a fever, and I have to say that fever is one of the cardinal features of this, at least 99% of people with this will develop a fever, it's recommended that you take something called acetaminophen paracetamol or an ibuprofen or an anti-inflammatory type medication to break the fever. Now, we do know that the fever response is actually part of the immune response to fight infection. And there is some data, not specifically for Coronavirus but from other areas and

other infections, that's preventing a fever potentially by taking these drugs (paracetamol) may actually impair the function of the immune system.

23:39 We've got lots of good research that shows if you give paracetamol to somebody before they have a vaccine, then their immune response to that vaccine is impaired. And there's also some equivocal data that shows that potentially people who are very sick in Intensive Care Units, if they're given regular Paracetamol, then that might actually increase the risk of dying from infection. So based on an abundance of caution, if you have a low grade fever and you're able to tolerate the symptoms, I would suggest not taking paracetamol or ibuprofen unless recommended by a doctor.

Ivor Cummins 24:18 You know what, Paul, that resonates with me as well because I remember many years back, I was researching some kind of metabolic effects and I came across that reality and some of the details that the fever is generated by the body, erased the temperature and make it less kind of amicable for virus in the body. There's a reason for it. So it makes you artificially kind of stunt that temperature response, you know, you're going to be taking away a little bit of your innate kind of machinery that's aimed to help you.

24:51 Now of course, in a very high fever or fever with convulsions in young people or babies, of course, it might make sense to tail it off a little. But like you say, if you can handle the temperature and the discomfort, it's probably helping you in a reasonable fashion. So very good point.

25:10 So, that's about it I guess. This is a short and sharp podcast. No high video on sound quality production policies this time, but just want to get it out quickly.

Dr. Paul Mason 25:20 Pass it. Now you go and enjoy. You're welcome in Denver. You're doing a groundbreaking presentation, I believe. We're all excited.

Ivor Cummins 25:31 Ah, yes! We discussed the other day. Yeah, the theory of atherosclerosis, whether it comes from the blood side, the LDL particles inside out into the wall, or wherever the real problem comes from the outside of the artery into the wall. We're going to be talking more about that pretty soon, I guess.

Dr. Paul Mason 25:49 I can't wait.

Ep 59 Corona Virus Update and Practical Advice - Dr. Paul Mason
Find out more [@ihda.ie](https://www.instagram.com/ihda.ie) and [TheFatEmperor.com](https://www.thefatemperor.com)

Ivor Cummins 25:51 Thanks a lot, Paul, Dr. Paul Mason.
Thank you very much.

Dr. Paul Mason 25:55 Thanks! See you, Ivor.