



DANNY LENNON:

Dr. Kirk Parsley, thank you so much for taking the time to come and chat with me.

KIRK PARSLEY:

Yeah, thanks for having me on and giving me the opportunity to get on my soapbox.

DANNY LENNON:

In regards to what's going on, given all this this craziness right now, and we should probably make people aware, this conversation is the 25th of March, so it's subject to potentially change, but as of right now, I'm interested in kind of two sides of conversations you may be having with people. One, I'm sure there's a lot of people contacting you knowing that you're a doctor and have some degree of expertise over the average person to try and talk through some of these issues, and we'll be coming for your two cents and some advice; and then the other side, you know a lot of people who are doctors on the frontlines throughout the country, I'm sure. And so I'm just wondering, on that side, what conversations maybe you'd be having with them, what things they're reporting to you. So maybe we'll start with the first of those, for people that are initially coming to you now, what seems to be the most pressing concerns, questions, and what have some of those conversations gone like?

KIRK PARSLEY:

I would say, regardless of why they think they call me, what we end up talking about is whether or not this pandemic is going to wipe out a substantial, is it going to a large degree wipe out their way of life or there – is it going to have a major impact on the future that they've projected for themselves in the last 40 or 50 years whatever. And I don't think anybody's trusting my ability to prognosticate that, but they are looking, as you said, for just – you know, I'm not an epidemiologist but I've been trained in epidemiology and I've been trained in biostats, and I understand infections and ICUs and intubation and really when we do things. So I have that perspective, but then I have the perspective of being in the SEAL teams and understanding life-threatening situations and high stress environments, and how do you keep functioning when you know that you could die in the next hour from what you're doing right now, this could kill you. And then being a physician for the SEALs and dealing with all of the issues that came up post 9/11, like all the combat traumas and the changes in people's psyches and TBI and PTSD type symptoms and all that, and I qualify all of it with, I reserve the right to be completely wrong about this, but here's where I think – and here's what I think is something that you and I chatted a little bit before on this call about is modeling is predictive, and the modeling is based on a bunch of assumptions knowing what we know how viruses tend to go, how people tend to behave, what sector of the population seems to be being affected by this, if we model all that, we predicted this could happen.

I don't think anybody would argue that they're saying that this will happen, here's the most drastic thing, given modeling, here's kind of the worst case scenario, here's maybe the best case scenario, but if any of those assumptions are wrong, then that's completely – any of the assumptions that you put into the formula, then the conclusion is completely wrong, and that might make it wrong by 10%, it might

make it wrong by 3000%, we don't know. There are people who are serious about this work and have been doing it their whole lives and they're very skilled at it and they're better qualified than any of us to do the predictive modeling, but that doesn't mean that they're right, it just means that they have more tools to do that than we do. Again, I'm not saying any of them are wrong, they could be spot-on, but what I'm saying is, if you look back historically at the other pandemics that have just been in my lifetime, never mind pandemics that have existed well before my time, we've been through several things before, we've been through several major life resets and we always get through them, and I draw their attention to the fact that 13.5 million people die every year across the world, and they die from various things, and currently if you were going to die this year, the way things are right now, if you knew you're going to die this year, you would have a 99.7% chance that you would be dying from something other than coronavirus.

So again, I'm not saying that who cares if people die of coronavirus, that's not the point at all, I care of anyone who dies, I don't want anyone to die, but we know that's not reality, like people die. And again, I'm not being cavalier or dismissive of that, I don't think that we shouldn't care that people die, but I do think that there's a limit to what we can do, and I think that all we know we can do right now is try really hard not to give it to everybody else. I mean, common sense tells you that social distancing works, and I totally agree with that. We should keep ourselves away from, too close to people like, if you're sitting right next to me and I accidentally sneeze on you, versus you're sitting 10 feet away from me and I accidentally sneeze without covering it, well, we just significantly reduced the risk that I'm giving it to you. Right? Wash your hands four or five times more often than you usually do, wear a mask until the epidemic is completely under control. And then the other thing though, of course, is to take care of your health, because

the number one thing that predicts not only if you're going to get – to get this disease, like you can't really control overall like on the long enough timeline, you can't control whether or not you're exposed to this, and how long that timeline is is anybody's best guess. So if you're exposed, the number one predictor is whether or not you're going to get sick, really sick from this, or if you're going to get sick enough to die from this, and also controlling how many people you're going to spread that to. Well, that's all built in to your immune system. If your immune system is really robust and you get enough of an exposure for this virus to get in, infiltrate your cells and do what viruses do which is turn your cells into little slaves to do their bidding, so a virus attaches to your cell, it gets inside, it puts its genetic material into your DNA and changes what that cell does, and then that cell starts producing a lot more of that virus. And then that cell ruptures and it releases more viruses to do that to more cells, but at some point your immune system catches on to this and it kills the virus's ability to keep going forward. It starts marking these virus and it starts using chemicals and cells to gobble them up and kill them and destroy them and then break all their little constituent parts up to waste into other things that you can use and so forth, and that's when you heal yourself.

So if your immune system is really robust i.e., a young kid with a big thymus [inaudible 00:16:05], you tend to get this virus, have a few symptoms, feel better and move on. The older you get, the more metabolic disease or immune disease that you have, the more likely it is to have a very bad outcome. Well, the good news is the same thing that I tell people to do every single day, it's like eat well, eat good food, eat food. The other thing is to get exercise. Exercise has tons of physiological benefits and it increases lymphatic flow, it increases peripheral dilation, so you get more blood to more areas, you get more oxygen to more areas, you increase the cellular activity of producing energy. It has obviously mood

elevating effects, but the other thing it does is decreased stress, and the biggest problem right now is controlling people's stress, because the one thing that underlies all of this, exercising well, eating well, and controlling your stress, the one kind of bucket that holds all of that and determines how well you can do any of that is how well you're sleeping. If you aren't sleeping enough, there's really nothing that you're going to do that's going to boost your immune system. Vitamin D3 supplementation, is that going to help? Maybe. A lot of people are vitamin D3 deficient, why not try it, right?

So there are lots of things that you could try, but those aren't the things that you should hang your hat on making it – like that's the fine-tuning, that's the 1%. 99% solution is getting good sleep, controlling your stress, exercising daily and eating well, that's the 99% solution, everything else you're optimizing, you're supplementing, you're supplemental for a reason. The main activities are the lifestyle, everything else is supplemental. So until you've idealized the lifestyle, you're pissing against the wind with this supplementation, like you're trying to get 1% improvement while you're diminishing your immune system by 30% by just not sleeping well. I mean, it doesn't take very much sleep deprivation to lose 30% of your immunity, that's a big deal man. If you're contagious for four weeks instead of a week, well, then you're going to give it to a lot more people, you're just going to interact with more people. And so, what really matters is like how easily does it spread from one person to another, what can we do to control those things, and then what can we do to control the outcomes once those happen. We don't have any control over how long it stays dormant in people and how long people are contagious other than to say we're going to do everything we can to optimize this person's health so that they recover from this the quickest and they have the least interaction with anybody else and have the least chance of spreading it, and that's what we can do as a society. We could do

social distancing, we could wear a mask, we could wash our hands, we could change our hospital procedures, bring in lots of equipment, we could do a lot of changes. So that's what I spend the most time talking to people about, it's just giving them a new spin on this overwhelmingly negative information. We don't know the death rate and we won't know the death rate, we won't know the death rate anytime soon because we can only know the death rate retrospectively and then it'll still be imperfect because we're not going to test every person in the world and we aren't going to know every person who's had it.

And again, I'm not trying to say that it's not really bad, it could be really bad, this could turn out to be the worst pandemic we ever had, it could end up being fairly average, fairly consistent with other pandemics, but if you ask anybody what's the scariest pandemic you've ever been in, what's the worst pandemic you've ever been in, they're going to say the one that you're in right now because you don't know. This one, of course, is the worst right now, because there's so much we don't know. This could destroy our way of life. Historically looking at what's happened in the past with other pandemics, it's very unlikely it's going to destroy our way of life, but that doesn't prevent people from worrying about it. So you have to be able to put a little bit of mindset spin on that, and I'm not telling people what to believe, I'm just offering some other ideas.

So here's the optimistic side of what I'm thinking, I have my doomsday moments, it's like you see a certain set of data and you are like, oh my god, this looks really bad, maybe I was wrong about everything else. And so, being optimistic, trying to be as rational as possible and compare it to what we know historically has happened, that's going to lower your stress more than anything, and now you do the lifestyle stuff and now you have the lowest amount of stress, and you're eating well and you're sleeping well, and you're exercising,

you're controlling your stress, now you are the best you you can possibly be, you're the most optimized, you're the least likely to give it to somebody else, you're the most likely to have a good outcome, you're the least likely to die from it, because you're completely optimized and you're going to do the best that you possibly can. And now you have to go on about your life realizing there's some uncertainty back there and you don't know what's going to happen with this, but I'm doing everything that I can, I'm being socially responsible, I'm taking care of myself. I'm being a being a good citizen to my community, we've all agreed we have a contract based on the person we chose to lead us. We have a contract that says this is what we should be doing and that's what we do.

DANNY LENNON:

Maybe just give some insight to how I've been thinking of it, and I want to just kind of clarify a few things that you said as well. One is, again, I'll start with the same caveat as you are, I'm certainly not an epidemiologist or an infectious disease expert, so I want to be very careful for people listening, nothing that I say should be taken as anything. I merely want to kind of present a few points that I'm sure I've been thinking through and so are others that may be at odds with some of the ideas you put out, and I do realize it wasn't a prescriptive piece of advice but rather some useful here are some scenarios that we should probably think through in relation to how will it change the number of deaths, healthcare systems may not be able to hold up to this. And then the worry is if they do fail and there's a complete collapse of hospitals and healthcare systems to be able to control this number of patients, it's not even the people dying from that virus, although they will go a lot higher than otherwise would, but also other people with other ailments will also die that wouldn't have otherwise. And so, that is one that I think why either a lockdown or very restrictive measures for a certain period of time in order to slow that spread is beneficial even if they were the same number of deaths, like you said, maybe there is going to be the

same area under the curve, but what that curve looks like kind of matters.

KIRK PARSLEY:

Well, yeah, so I completely agree with that. I understand that concept very well. One of the things in the military we do, we do mass casualty exercises, where we overwhelm our medical capabilities and then we have to triage and make really hard decisions and say, well, this person is more critical but I'm unlikely to be able to save that person so I'm going to go to this person who I think I can save, because I only have one bed left or I only have one healthcare team left, and so I have 10 people to choose from, and then I have to choose only one out of 10. And that's a horrific environment, of course, we don't want that to happen, that happens in wartime all the time, but we don't want to get there, and so that's the argument behind doing everything that you can to control the spread. And so, I'm not saying that we shouldn't do everything that we can do to control the spread, I'm saying we should do everything that we can do to control the spread, but whether or not that means everybody has to stay in their house, see this is yet another unknown, like I said, common sense says that isolation, self-isolation and self-quarantine will prevent the spread or prevent the spreading as quickly. It seems like it would help, logically it makes sense, like let's take that step, we don't know for sure that it makes a significant difference. The only way to completely prevent the spread would be to have every single person isolate alone right now until nobody has it anymore. So that would completely reduce the spread, and the only question is, how far are we willing to push that boundary. So for example, what's our risk tolerance is really the question. So in the example I said, the only way to completely stop the spread of this is that every single person in the world locked themselves in their own container that they could get out of. And of course, we could not do that, but, let's say, we did, so nobody's saying we should do that, there's some middle ground in there between doing nothing and doing that,

and that's the point where it's really hard to get to, it's really hard to know where that is, what is the acceptable death rate.

The Mayor of New York City said he would lock the entire city down for nine months to prevent one death. I don't think most people would agree with that, like that that's extreme, because you're going to kill a lot of other people because nine months later it's going to be New York City will be a third world country and everybody would be killing each other and dying and suiciding and all sorts of other stuff. So there's a happy medium somewhere in there, so we're going to do what we can to not overwhelm the medical system. I mean, it's just super complex and I'm not offering solutions, I'm just offering an opinion on this. But you have to think about, you know, there are always socially irresponsible people that are ignoring every social contract we have. There are people who are murdering other people. It's a well-established contract in almost every country, you're not allowed to kill other people. People still do it. People still drink and drive. People still do drugs. People continue to steal from each other, prey on each other, like all sorts of people don't abide by the rules. And so those people have to be policed, and so we have law enforcement for that purpose. So who's going to police everyone in New York? You don't have enough police officers. Are you going to import every police officer from the entire country to keep a watch over every single person in New York and arrest every person, then what do you do when you arrest them, put them in a jail? You got to put them in their own jail cell and they can't interact then. I mean, there's a limit to how far you can go with it.

At some point, you just have to say, hey, we've done everything that's reasonable that's going to allow us to keep functioning as a society and we're expecting some deaths, we're expecting a lot of deaths even, and we're doing our best not to overwhelm the medical system, and we have contingencies to truck in 10,000 new

ventilators as soon as the system starts getting close to overwhelmed, we're going to bring doctors and healthcare providers from this state and that state and we're going to bring all this medical equipment, and we're going to set up tents, we're going to fly people out of there, like whatever you're going to do, like let's have contingencies to try to prevent that thing from overwhelming your local environment. Again, there's going to be social responsibility, and that's much better controlled as a community, that's much better controlled by one of those individuals saying, hey, we shouldn't get together because right now we don't have this thing under control, so I'd really appreciate if you don't come to my house, I'm not going to open my door if you do come to my house. So in my community, I think my community would control that better than law enforcement could. So at that point, it's the governor or the mayor of my community saying, here's the guidance for the country, this is what I think is the best for everybody to do, and this is the policy I'm setting. And then it's up to the community, and some communities are more responsible than other communities. I don't think you find a group of bikers that behave same as a group of professionals. They're going to have different responsibilities or different responses to whatever, the policy or law or whatever it is.

DANNY LENNON:

Right. Yeah, one of the other ones was around the fact that we don't have a lot of empirical data or there's a lot of things we still don't know here, and there's a lack of ability to make predictions. So then that leads to kind of two different perspectives you could look at, one group of people may say because of that lack of evidence we shouldn't make any drastic decisions right now; the other group would say because of that lack of evidence we should have much more precaution and we should almost overreact because there's less of a price that pay from overreacting than under-reacting.

KIRK PARSLEY:

I see the value in both of those as well, and as with anything else complex, it's somewhere in between that, and it's probably not the same for every area. The amount of liberties you could give to a city that covers 20 square miles and has a 100,000 people, probably needs a lot fewer restrictions on them than you need in New York City, where you have 11 million people in just one tiny little area. And the restrictions that are put on there should be things that are either very commonsensical that they would work like social distancing and isolating yourself; washing your hands we know works with other viruses, why wouldn't it work with this virus; wearing a mask, why wouldn't it work with this virus, it works for other viruses; let's do what we know we can do, let's take it seriously, but the amount of freedoms that would have – it's going to be somewhere between the two extremes. So to say we should do nothing is obviously irresponsible. To say that we should do everything is irresponsible as well. What's the argument to do everything? We're not going to get to where nobody gets the disease, like that's not going to happen. We can do everything that we can think to do and even dream up some things to do that we have not thought of yet, and people are still going to get the disease.

So what you're looking at is, again, that rate, like how quickly are a million people going to get this. If a million people get this over the next two years, not anywhere close to the same as if a million people get it in a month all at once. The right balance is somewhere in there, but I think it has to be agreed upon in a contract, a social contract, so like, okay, we as a community are willing to stay home for the next six months, because we're Beverly Hills and we're all rich and it doesn't matter. And then another community might be, well, I'm going to be homeless and in abject, irrecoverable poverty if I'm home for two weeks. And again, I don't, I'm not even offering a perspective on the solution, I don't know the solution. All I'm saying is there are other ways

to look at it and I think it's a good mental exercise, at least for me, and for my patients it's turned out to be very beneficial to think on a more optimistic side and on a more relative side. We lose the ability to make good decisions when you're under stress.

If you've ever been in the fight or flight scenario, like you've been in a car wreck or almost in a car wreck or you've been in a fist fight or been attacked by somebody aggressively or something, you get in a fight or flight, the maximum stress response you can possibly have, your stress hormones are at their maximal level, and there's lots of physiological benefits to that, lots of good things happen, you become stronger and faster and your reflexes are quicker and your pain threshold goes up and your lungs dilate and your heart rate goes up and your blood pressure goes up, you get more blood and nutrients to your limbs and you can do all sorts of things that you can't do when you're not in fight or flight. But one of the things you aren't doing is you have almost zero immune system functioning during that period, because it wouldn't make any sense to have immune system, you have to get away from the lion before it matters if you can fight off a cold or the flu. If the lion kills you, who cares. So that's all out the window. But you also have to be able to think under certain circumstances, you can't think when you're in fight or flight. If you've ever been in fight or flight, and I think almost everybody has, there's no thought going on, right? Whatever the threat is, it's the biggest thing in the world to you. It is the only thing that matters and you're hyper-concentrating and this is it, this is all that matters – and until I get away from this, this is the threat.

And right now if we're thinking that way, if we're driving ourselves towards fight or flight, you don't make good decisions, when you're in fight or flight. If you went by and asked people questions during a gunfight, if you found a couple of armies shooting at each other, and

while they're shooting at each other, you went and started asking people, hey what was the name of your ninth grade teacher, hey what's 36 times 4, they wouldn't know, their brains don't work. They're thinking about the threat. So the closer we live to that, there's two problems, one we're not thinking clearly, we're not making rational decisions we're, making the threat in front of us the biggest thing in the world, it's the only thing that matters. And all I'm saying is lots of other stuff matters besides coronavirus. Coronavirus matters, unquestionably it's a threat, it's out there, it's in our view, we have to address the threat, but lots of other stuff matters, and we can't forget about everything else is the point.

The other thing is, when you're under a lot of stress, like I said, your immune system sucks. If you're running around stressed all day, one thing you don't get good sleep, which leads to more stress but also stress leads to not getting good sleep, so that leads to more stress. So stress begets stress, you have to control that; and when you have everybody in panic mode, nobody's thinking clearly, and everybody's immunocompromised essentially, they're not getting good sleep, they're stressed out all day, they're living with stress hormones closer to fight or flight, their immune system isn't as active, they're more likely to have a bad outcome from that disease and they're more likely to carry it for longer and spread it to more people, and they're less likely to make good decisions to prevent themselves from spreading it to other people. The reason teenagers are still on the beach when we're saying lock everything down is because their prefrontal cortex, their area of the brain that gets impaired under stress hormones, theirs isn't fully developed yet, that's why teenagers do reckless stupid stuff, that's why they think they can do double backflips off of roofs and land on swimming pools and not get hurt, because that that prefrontal cortex is our simulator. So I could say, you look like you're

pretty high right there where you're living; I could say, I don't mean, you look "high"!.... You are on high elevation. I could say, hey Danny, let's see what happens if we jump out of your window. You don't need to do that. You're not even tempted because you've never jumped out your window before, but you can simulate that and go, no that's a bad idea, because look how far it is, we'll die, or we'll at least break a lot of bones, we're going to get seriously hurt, I don't want to do that. Well, that's a good example of it, but that's what the prefrontal cortex does, it allows you to make rational decisions. So if I'm stressed all the time, I'm less likely to eat well, I'm less likely exercise, I'm less likely to take care of myself, I'm less likely to wash my hands, I'm less likely to social distance, I'm less likely to pay attention whether or not I'm coughing and sneezing on other people, I'm less likely to be a responsible citizen because I'm behaving like a teenager.

DANNY LENNON:

I think there's a lot of people that are going to be super anxious right now, so I completely understand how reframing some of this can be very useful, and I've certainly found that myself because I've gone down rabbit holes, reading stuff, constantly updating statistics, looking at those kind of models, and I think maybe it's important for some of us, because I'm no expert, I'm not going to be able to make any of these decisions, so for me to be trying to project too far into the future which I definitely do and trying to think about how decisions various governments are making is going to play out, causes a lot of undue stress that isn't necessarily something I need to be thinking about; whereas there are lots of people that do, there's lots of people in high-powered positions to make these decisions, there's journalists that have to think about this, there's scientists that have to go and press people on decisions they are making, but maybe not necessarily me or other people who don't know what we're talking about. So I've definitely felt that. And then that the second part to it, and I think this is in line with what you said, if there are other

things that matter than just the virus that can be detrimental if we solely focus on this, one that also relates to sleep is that we know already there is a high prevalence of mental health issues within the population, anxiety, depression, suicide, we know then that during times like this where there's this mass uncertainty and this whole upheaval of someone's routines, maybe they've lost their job or they don't know when they're going to be able to get back to work, these things can tie in to that risk. And then if we also extend that to your discussion around how that can impact sleep negatively, we also know chronic restricted sleep plays a role in that risk factor. And then maybe more generally, do you actually think if we look at what the next two or three months look like that we may actually see a sharp enough uptick in things like suicide or reports of depression and so on?

KIRK PARSLEY:

Yeah, I mean, well, that's, I mean, purely a speculative guess on my part. I would say, almost certainly, because at least in America, the number one reason to have insomnia is anxiety. So we're definitely fueling the anxiety for a lot of people. And if you don't sleep well, we know that any psychiatric disorder is exacerbated by not getting enough sleep, and even a lot of a lot of psychiatric disorders that get diagnosed, get diagnosed after a period of prolonged sleep deprivation or a period of insomnia, and I think one of the reasons that the military has a sleep restrictive component to it because you're kind of at an age group of people that could have something and haven't been diagnosed yet, and if you really put a lot of stress on them, then you'll break them, but you identify them there in training, so that you aren't identifying them later down the road when they're in a critical position. So I mean, that's unquestionably going to be a component of it. Suicidality is hugely impacted, just by lack of sleep deprivation, or just by sleep deprivation, or lack of sleep; but so is almost every other cause of death. And like I said, poor decision making, you're way more impulsive,

you make more risky, you take more risky behaviors, you just do dumber things when you're sleep-deprived; and now, if you add on to that, there's infinite uncertainty.

One of the things that that helps everybody get through SEAL training, when you're young and you want to, you know, when you're naive and you haven't been exposed to training yet, you have all these grandiose visions of what training is going to be like and how you're going to feel after you've succeeded in all this other stuff. And then when you get into training, you lose the scope really quickly. So when you first get into training, before you even get to training, you're thinking about finishing training and what's it going to be like when you finish and maybe even like what job are you going to do once you finish training. Then when you get into training, it's like, well, I got to make sure I graduate, right, like, I got to really work hard to [inaudible 00:41:26] any like, well, I could fail anything in this phase, I could fail anything in the next two months, and it's like, well, I could fail anything in the next month. Well, I could fail anything in the next week, I could fail anything today. I could fail something in the next hour.

So if you think about, well, there's 36,000 things I have to do between now and eight months from now to graduate, that's an overwhelming amount of stress at least to all sorts of anxiety, and I personally believe that's why most people, quit because they get overwhelmed. It's not that they're suffering so bad right now, it's like they're suffering right now, they feel like they have nothing left, and it's going to get so much worse, there's so much more, and so they are quitting because they're afraid of what's coming, instead of the people who make it or the people who get themselves down to, I'm thinking about my next footstep, I'm thinking about the next time I kick my fins I'm thinking about the next push-up, the next whatever; like I'm just thinking down to the most miniscule thing; like, we're running right

now, I'm only thinking about running; you don't think about anything else in the world, and that reduces stress, right? Because really, stress is thinking about the future, depression is dwelling on the past, so dwelling on the future leads to anxiety in everybody, across all walks of life.

Now, the more unknown, the more uncertain the future is – the future is coming, people who commit suicide, they don't want to die – by and large, nobody commits suicide, doing, I really want to die. What they want is to avoid all that suffering that they think is coming and they can't see their way out of it. So we're inducing a depression, which is like we're at least inducing a depressive mood, and the human psyche is just as important as to human physiology, like your brain, your mood and your outlook on life is just as important as how healthy your heart is or any other organ in your body. And so, you can't completely neglect that component. So I mean, it could be something as simple as educational campaigns, like every day on television, there's some education about what we're thinking, where are we going, what's been proven to work, instead of all that we hear at least over here is this many more people have it, this many more people died, that's all we hear. I mean, one thing I can think of, it's very simplistic and it probably wouldn't do a lot, but it's just the concept. So we're talking about sort of basal rates of deaths in the society and an acceptable risk of death that we get up every day and we engage in that risk every day. Anything short of wrapping yourself in bubble wrap and laying in bed all day and being spoon-fed and hydrated, like you're taking some risk with everything you do, and it's an acceptable risk. And one of the simple things I could think of is, in America about a 100 people a day die in car crashes. Well, I bet you, only 10 people a day are dying in car crashes right now because nobody's driving.

So we've been doing this for 10 days or something now. So 10 days into this isolation,

we've saved a 1000 lives, and we've lost 800 lives to coronavirus. We're still concerned about coronavirus, we're still going to do what we can, and I'm not saying that's a super powerful example but I'm just saying there are positive things out there, there are good things to look at. There are, hey, we started trials with this medication and here's how it's working, like here's some good news cases, here's some, you know, there are positives.

DANNY LENNON:

Yeah, and it seems that one of the things that would lead to that social contracts amongst people is when they have facts in front of them, they are getting a clear consistent message, and they feel like they know what's going on. It's when there's confusion and people don't know why they're being told to do certain things, that's when I think it falls apart.

KIRK PARSLEY:

Right. And that's aligned with what's happening in the United States. There are certain cities that have an enforced lockdown, but almost everybody's locked down everywhere, even though there's only a handful of cities that have said you have to do it. Most people are just going, okay, but this seems like [inaudible 00:45:44] let's do it, it's an agreed upon social contract, we're going to do this right now, and we need to know how long are we agreeing to this, and the more information we know – like, if it's going to be longer, then we need more information as to why it's going to be longer. There's also the potential of spinning this into things that you can do now at your home, right? Now that you don't have to go to work, like, we're offering free college classes online or something or, I don't know, free Netflix or home school and parenting courses, like I know this stuff exists but it just doesn't get anywhere near to the play that all this negative doomsday stuff. So everybody's running around afraid and the more negative information you put out there, the more afraid everybody is, and the worst decision-making we get. And it's not one group of people pitting themselves against each other, it's like the

more isolated we are, the more afraid we are and the more isolated we are, which are inextricably linked, like being isolated makes you afraid and being afraid drives to isolation.

But the more that that exists, the worse this outcome is going to be. The more afraid and isolated everybody feels, the less you're thinking about anybody other than yourself. You want to get yourself out of your misery, and what's going to save everybody from this is when the community says what can we do as a community that's the best for everybody, apart from not letting anybody get this virus because that's not possible. But also apart from saying, we're letting everybody go back to work because we don't want to impact anybody's financial situation, well, that's not reasonable either. Both of those are unreasonable, but there's somewhere in between there that that community, that culture, like the Irish are probably different than the Texans, and probably different than the Californians and New Yorkers, like everybody, every community has kind of got its own belief systems at our what's acceptable, and those social contracts just need to be made at a more local level, and the more isolated we are, the more incapable we are making such a contract and agreement. So I see that as being one of the big fears of taking this out too long, and especially with not even a tease of how long this is going to be.

DANNY LENNON:

One of the things that's troubled me the most probably is, I suppose, over the last couple of years, the biggest areas that I'm most certain impact health at the broader scale are around avoiding being socially isolated, having connectedness with people, having some degree of feeling of purpose within your life, and it's these themes that you see kind of across the board within healthy people and healthy cultures and, I mean, healthy in the roundest sense of the word, not just physical markers. So it's kind of the irony now of – not necessarily irony, but that we're moving towards making those few things even more

difficult without some real proper attention. And I think that that needs to be part of the conversation, how do we keep those things, even if we are going to be distant, how do we make sure those things are present?

KIRK PARSLEY:

Yeah, and another thing, it's not just interacting with other people but it's interacting with the planet in general. So if you live in New York City and you're trapped in a high-rise apartment complex for months on end, then you aren't getting – you aren't even getting to touch grass or be next to a tree or like you could be, you know, essentially it's like being in prison, but even prisons give time out in the yard to be in the sunshine and exercise and run around and that type of stuff. So it's unquestionable that the worst thing you can do to people is to sleep deprive them and completely isolate them. So you're in solitary confinement, and you can't interact with another person, that's the worst thing you can do to a human being. Being able to get out in the world, being able to see the sun, being able to walk underneath trees, dip your feet in the water, get some exercise, laugh with some people, even if you do it from 10 feet away, that is part of the human condition, and life isn't worth living without that. Again, it's super complex, and I don't have a solution for it. I'm just saying, there's a lot more reason to be optimistic than what you're hearing.

One of the threats out there, it's an unknown threat right now, so it's scarier. A year from now it's not going to be the scariest thing around, there's some other threat that's more scary. Whatever you're in right now is the worst thing, and I just encourage people, you know, I find that a lot of people do more for other people than they'll do it for themselves; like people do more for their kids than they'll do it for themselves; people get up and go to the gym when they don't want to because they have a partner they're accountable to; people go to work when they don't want to because the company, their team is dependent upon them.

So people do more for others than they'll do for themselves alone. One thing is to be socially responsible, so that you can help your community and you can be the best sort of citizen of your community that you can be. But the other thing is to take really good care of yourself, because the most capable you is the most helpful you.

So if you aren't willing to prioritize your sleep and your exercise and your nutrition and your stress mitigation – and just briefly, I'd like to talk about that real quick. Because so many people have difficulty sleeping when they're stressed, I have a couple of things that I offer, and one of those things is, well, several of those things are really simple – in a time where daily stress is keeping you from sleeping, you're going to bed with a lot of stress hormones, but you're also going to bed with very active mind which is counterproductive to being asleep. So being asleep has certain brainwave patterns in it and being awake has certain brainwave patterns, and the more stressed you are, the more your brain looks awake even while you're sleeping, so you're not getting the same quality of sleep. So even if you don't think it's that important for you, you are not that motivated by yourself, to be a good citizen, get good rest for other people, get good sleep for other people, so you're the best you you can be, you're the most helpful to your community at that point.

And so you have to think, you have a lot of stuff you're worried about and you have a lot of stuff that you need to do, and so, I say, take a piece of paper and draw a line right down the middle of it or fold it in half whatever. On one side, write your to-do list, write every single thing you could possibly think of, da, da, da, da, da, on and on and on and on, everything on your to-do list. And on the other side you make a “to-worry” list. So things you have no control over, like, will coronavirus end society as we know it; like, whatever things that you have no control about but you don't want to forget to

worry about them, and that would make more sense of a second. Because the more important part of that isn't the list itself, but it's the contract about the list, and the contract about the list is this: the most capable you are at any point of your day is within the first few hours of being awake, and that's the you're fully rested, your brain has fully recovered, your physiology is optimized, you've done the most restoration, your immune system has – like, I didn't say this earlier, but the exact opposite of fight or flight is deep sleep when you look at the hormonal milieu of your body, so maximum stress is fight or flight, minimal stress hormones is deep sleep. So that's when your immune system is working its best, that's when you're fighting off infections and repairing damaged tissues and all of that, every cell in your body behaves slightly differently while you're in deep sleep than it does when it's awake, I mean, some significantly differently.

So when you get a good night's sleep, the entire purpose of sleeping is to be prepared for tomorrow, is to get me ready for tomorrow, and what my body is doing to – what my brain and body are doing to get me ready for tomorrow is dependent upon what I'm doing today. So what I've done today, taxed my body in a certain way and it caused certain things to be depleted and certain things to be damaged, and certain buildup of waste products and toxins in certain areas and not enough – not very much activity in other cells in my body. And so my body uses that as a predictive model to repair everything that I've used today to be better able to do the same thing tomorrow, so that if I have the exact same taxes on my body, and I get a good night's sleep, the second day I should be better able to handle that because my body is repaired with that in mind that that's what tomorrow's going to be like.

Now, the longer that you're awake, the less capable you are, you don't make as good decision, your willpower isn't as high, your energy is not as high, your mental clarity is not

there, your attention is not the same, like you're just not as optimal after you've been awake for 16 hours as you are after you've been awake for an hour or two, like that's your peak. So when you think about this overwhelming list of all these things to be done and all these things to worry about, keep in mind that the best you're ever going to be able to handle that is when you're well rested. Why would you approach it at a time when you were the least well rested, which is bed time ? So right before you go to sleep when your brain is the most tired and your body is the most tired, and you're the least capable you've been all day, now you are going to think about that list? That's the worst thing you could possibly do. Think about that list in the morning, which means you aren't going to think about it when you're going to bed and you're not going to think about it while you're supposed to be asleep.

So you set an alarm clock an hour before you want to be in bed, and once you hit that one hour, you start doing anything – once that alarm clock goes off, that's a no kidding alarm, that's not optional. You don't get to say, well, I just want to watch one more episode on Netflix and then I'll do it. It's like, no, this is just as important as the alarm that wakes you up in the morning. So you set that alarm, it's an hour before I need to go to bed, now I'm going to dim the lights, I'm going to lower the temperature, I'm going to decrease my activity, I'm going to decrease my stress, I'm going to do everything that I can to get my body and brain ready to go to sleep and then I'm going to go to sleep. Now, when I get in bed to go to sleep, I might need an alarm clock to wake up in the morning; and if I do, that's fine, but I don't need to look at the clock while I'm in bed. Why? It doesn't make any sense. I'm not getting out of bed until the alarm clock goes off, because I've determined when I'm thinking clearly, when I'm at my best state and I'm predicting and I'm visualizing the future that I want to create for myself, the best thing that I

could do is to sleep between these hours. Don't reevaluate that plan when you're impaired, that's what a lot of people do. So you start reevaluating that plan in the middle of the night when you wake up and you feel like you can't go back to sleep, and you look at the clock and it's 3:00 in the morning and maybe you could just get up. And, well, if I did that and like, now you start waking yourself up just by thinking.

So you see, I'm going to be in bed for eight hours every night, I'm going to get in bed at this time. When the alarm clock goes off, I'm going to get out of bed, and I'm going to handle my list then. And then if you wake up in the middle of the night, it doesn't matter what time it is, because your only job is to get any thoughts of that list out of your brain and to relax, to sit there and do whatever relaxes you. You can do progressive muscle relaxation, you can do visualization, you can do box breathing, you can do any kind of breath work, you can do meditation, you can masturbate, like whatever it is that cools you out, just cool yourself out, relax, and say, I'm going to lay here and I'm going to stay relaxed until my alarm clock goes off, because I don't know what time it is, my alarm clock might not be going off for 15 minutes and at that point, so I got a full night's sleep and 15 minutes of meditation. But if your alarm clock is not going to go off for three or four hours, you're going to fall back asleep. If you stay relaxed, you're going to fall back asleep. And if anything pops in your head, you go, I don't need to worry about that, because the best I'm going to be at handling that is once I've slept well, right, like once I've got my full night's sleep. So I'm going to handle that in the morning, and then if you forget about something, you realize you wake up at 3:00 in the morning, you go, I didn't put that on the list. Get up and put it on the list. Go back, lay back down and relax. You don't need to know what time it is, just put it back, put it on the list, you make sure you're going to do it

tomorrow, you're going to think about tomorrow.

And then all you have to do is handle that list the best you can every day, and you can keep adding to the list, and like, that's it – all of your stress is on one page and you have a plan for handling it. And every day when you wake up, you're doing the best you can to handle that list. And then towards the end of the day, as you become less and less capable, concern yourself with fewer and fewer things on that list, and by the time you get to bed, you don't concern yourself with anything on that list. Why would you? If you're preparing yourself for tomorrow, why would you get up halfway through the night and just say, well, I'm just going to go do it now? You're not as capable, you're not going to do as well, and you're not doing yourself any favors, and you're not doing your community any favors by being an impaired version of you.

DANNY LENNON:

But just as we've talked about the importance of sleep, how some of these things can impact it negatively, the importance of sleep for being able to contribute your best in whatever endeavor that is, the kind of problem in the situation we're now in is the people that are most needed and are going to be on the front lines, getting a proper full night's sleep is probably basically a pipe dream for a lot of them. Even if they do focus on it, they're going to be doing shifts, they're probably going to be minimum 12 hours of chaos, etc., probably longer. And so, in those cases, if you had a frontline healthcare professional come in to you and say, look, I know it's going to be suboptimal matter what I do, this is going to be crazy, but what would be the first thing I can think about, at least when I do get the opportunity to sleep whenever that is, that I can try and make the best of it?

KIRK PARSLEY:

Yeah, so the biggest thing that interferes with being able to get to sleep is just not being prepared to sleep. So you can't do jiu-jitsu until

9:30 and then expect to fall asleep at 10:00, you just – too much going on – your brain and body, they aren't ready to go to sleep yet. So the problem for the healthcare or any type of sort of shift worker who's essential to this pandemic, the problem is that they probably are going to work right up until the time they get off, and their time to sleep is somewhere, you know, is pretty much the time between they get off and the time they start work again. It's not like they're getting a day or two off; and if they are, then great, just sleep as much as you possibly can, as long as you possibly can. But if you know your own shifts and you have a finite amount of time to sleep, the best thing you can do is get as much sleep as you can possibly get during that period of time. It doesn't make any sense to do anything else. It doesn't make any sense to try to exercise. It doesn't make any sense to try to add some stimulants or anything like that.

The best thing that you can do with that time off is to sleep, and the best thing you can do to get to sleep is the list that we just talked about, like we do that, and anything else that prepares you for sleep. So if you have the opportunity to wear blue blocking glasses towards the last hour of your shift, if you have the option of maybe sitting in a room and doing charts, calm, cool, and collective, in a cool environment and blocking light as opposed to running around on the floor and treating patients, whatever, like if you have any opportunity to give yourself some sort of mental or physical break an hour or so before bed, yeah, I'm not plugging my own thing, but any type of supplement that would help you get to sleep, and the kind of all the ingredients in my supplement alone can help people sleep. So things like Triptan, things like melatonin, vitamin D3, magnesium, all these things help you sleep.

And then there's a supplement called phosphatidylserine. So phosphatidylserine has been shown to decrease stress hormone, specifically cortisol. So you can take that to

help you go to sleep, but you can also take that throughout the day to just lower your overall stress hormones, because the best thing to prepare you to get a good night's sleep is to not have super high stress hormones all throughout the day, and then just try to shut everything down. You're only going to shut it down relative, so if you're running stress hormones up here, you're going to shut it down to here to go to sleep. But if you're only starting here, you're going to shut down here to go to sleep. It's going to be the change that leads to the sleep, not the overall level. So it's relative again, relative to what, like high cortisol compared to what. So the lower the stress hormones, the better the sleep you're going to get, the more restorative the sleep is going to be, the better you'll be able to sleep, the more refreshed you'll feel when you wake up and the better you'll be able to handle your list.

The other thing is to sleep as soon as possible, so let's say you do get 12 hours off and you have the opportunity to maybe go to sleep in a call room and then go home for four hours or whatever, three hours, you get some time with your family. Or you could go home to your family and sleep better, and even if your sleep at home would be just as good, it would be better to get your sleep and then do other things, then do your family time, whatever you want to do. And if you're sleep-deprived, it doesn't make any sense to exercise, not with any intent, not with any intensity, like being active is always good but like frank exercise, performance metrics, lifting weights with an idea of how many weights you should be lifting, how fast, like no; running with the intention of running at a certain speed or a certain distance, no; walking, fine, like activity, good; mowing your lawn, fine; wash your car, yep; clean your house, yep, activity. If you're sleep-deprived, exercise is not productive, because exercise damages your tissues and then you have to repair those tissues to be stronger the next day. If you don't repair them, you're actually a weaker the next day. And if you aren't sleeping

well, you're not getting enough repair. So if you tax your body, that means, by definition, you've done more than your body's capable of doing, your body's going to have to repair a bunch of damage and get you ready for tomorrow with the anticipation of doing the same amount of work you've done today, that's what you're going to be working towards. And then if you short that system and you don't give yourself enough sleep, then you're going to wake up the next day impaired.

So maintain activity and moderate exercise for mental health. If you have performance goals, you can only – physical performance goals, you can only pursue those when you've slept well. If you're not sleeping well, you're not going to get faster, more coordinated, stronger, more endurance, you're not going to get it, like you're not going to improve, you're only going to get worse.

DANNY LENNON:

Right. So before you go, let people know where they can find you on the internet and all that type of stuff.

KIRK PARSLEY:

Yeah, docparsley.com, and I'm actually launching – I've been doing some writing and I'm actually launching kind of an immune health blog series. I mean, there's no commerce idea behind it, I'm not pitching anything, I'm not trying to sell anything, I'm not trying to convince anyone, I'm just offering some information. If people find this helpful, want to learn more about my thoughts on this, I'll have a whole blog series on that launching in a day or two.

DANNY LENNON:

It'll probably be ready by the time we have this up and running, so for everyone listening, I will link to that in the show notes of the episode as well as anything else relevant to today's discussion. And with that, let me say, thanks so much. I really do appreciate how much time you put in and I'm glad that we finally got to get this thing done.

Kirk Parsley 2

KIRK PARSLEY:

Yeah, likewise, always good to talk to you and I hope to see you again soon on the other side of this pandemic.