What's Work Got To Do With Sitting?

Guest: Dr. Saurabh Thosar, Ph.D., M.S., OTR/L
Host: Sam Greenspan, M.P.H.

Helen Schuckers:	00:00	You're listening to What's Work Got To Do With It? Are you in a workplace where you sit a lot? Maybe you're hunched over right now in front of your computer. How often do you get up and move around? We know that getting exercise every day is important, but can we reduce how much we sit on the job? So, what's work got to do with your sitting?
Helen Schuckers:	00:23	Our guest today is Dr. Saurabh Thousar. Dr. Thosar has a Bachelors degree in occupational therapy, an MS in movement sciences, and a PhD in human performance physiology. He is a certified clinical exercise specialist and licensed occupational therapist. Dr. Thosar studies the interactions between sleep, circadian rhythms and physical activity as they relate to cardiovascular diseases.
Anjali Rameshbabu:	00:45	So Saurabh, thank you so much for joining us today. We're excited to learn more about how prolonged sitting affects our health, and how this plays out both at the workplace and in our daily lives.
Anjali Rameshbabu:	00:55	It seems like more and more jobs are requiring people to sit. Sitting has sort of become a hot topic, and there was a recent article that went as far as saying sitting is the new smoking. What do you think about that?
Saurabh Thosar:	01:07	That's a very interesting way to look at it. There are clear associations between sitting time and cancer, sitting time and heart disease, sitting time and diabetes. Just like there are very clear associations between smoking and heart disease and smoking and cancer.
Saurabh Thosar:	01:23	What has not been done yet is, for instance, in the field of smoking there have been experimental studies which have seen the harmful biochemical effects of sitting on humans or animals. The sedentary literature is not yet that developed. So, we don't really understand well why these associations exist between sitting time and cancer or sitting time and heart disease.

Saurabh Thosar: 01:46 So to really understand mechanisms, is sitting actually causing cancer, or causing heart disease, or is it as association. So that's a subtle difference, but it's important. And those things have to be actually ironed down before you can actually call sitting the new smoking, I think.

Saurabh Thosar: 02:02 But from a public health perspective, it's a great thing for a campaign, because no one wants to have cancer, and if sitting is the new smoking, then I'm not going to sit, because it might give me cancer. It's a great punchline, but I think scientifically more needs to be done to actually-

Anjali Rameshbabu: 02:20 Sort of validate this.

Saurabh Thosar: 02:23 Yeah, sort of validate the term, that sitting is the new smoking.

Anjali Rameshbabu: 02:24 I think the big take away from that, what we're realizing more and more, is that sitting has become a public health issue. And I don't think that people, either in industry or organizations or even in science realized that that would become such an issue. And so, like anything else, like with smoking, it would take that much longer for the science to pick up on it and hopefully we'll know some more mechanisms.

Saurabh Thosar: 02:43 Yeah.

Anjali Rameshbabu: 02:44 But in the meantime, it seems like sitting less is the immediate sort of intervention there.

Saurabh Thosar: 02:50 Absolutely. There have been associations between many thousands of people and these are epidemiological studies. There's also experimental studies which show that short term sitting is harmful for cardiovascular health, for metabolic health, etc. But those, whether your body adapts to short term bouts of sitting is not known. So further long term studies need to be done in an experimental design to test these associations.

Anjali Rameshbabu: 03:15 Right. I guess the follow up question to that is that we know that we should be sitting less, but is standing a really good substitute for sitting, or is it do we need to do more? What about prolonged standing, because that can become an issue, right? At some point?

Saurabh Thosar: 03:28 Right, so yeah, there has been work on replacing sitting with standing and there are some beneficial effects on your arterial health, but these studies are limited in scope. I don't think there has been any study which has looked at standing and an experimental design looking at health effects on when you

replace sitting by standing for like a month or something like that. It's better than sitting for sure.

Saurabh Thosar: 03:50 What experimental evidence has shown is that if you break your sitting time by doing light intensity activity, like walking to a water fountain, or talking to a colleague instead of sending an email, if the colleague is 100 feet away from you, or going to the bathroom, or just taking scheduled breaks every hour, I think that helps a lot, at least with the functioning of your arteries and the cardiovascular system.

Saurabh Thosar: 04:13 What happens with sitting is your skeletal muscles or your muscles are essentially inactive. So whatever glucose circulates in your body, the muscles don't have to take it up, and that increases the risk for diabetes and heart disease also. So if you break your sitting time by activity, your muscles are getting active and so they actually take up more glucose and help metabolism. It also helps your arteries, helps blood flow. Simple things, essentially taking a break.

Saurabh Thosar: 04:39 There is also studies suggesting that fidgeting is also better than just sitting. So I guess any kind of movement which helps your muscle contraction is beneficial at this point.

Anjali Rameshbabu: 04:51 Absolutely. I think that's the biggest realization. And I think with more and more companies realizing it, they're trying to integrate less sitting or breaks from sitting in to their daily sort of, let's have walking meetings, or encouraging people to use the stairs, that sort of thing. And here at OHSU, we have the bike programs, the incentive program that you can get and that's with riding a bike.

Anjali Rameshbabu: 05:09 Some of the other research going on at the institute for example, is specifically on how to increase standing or taking breaks from sitting and so Dr. Brad Ripley is looking at the effects of a program that would help employees use sit/stand desks or like pedals, basically having breaks to their sitting. Because in their work in call centers, there's a lot of sitting and sitting on the phone. So we'll get to know how that study goes sometime from now. But all of those points that you made I think are valid, valid takeaways.

Anjali Rameshbabu: 05:36 So you are an exercise physiologist, correct? Could you tell our listeners what that means?

Saurabh Thosar: 05:42 Sure.

Anjali Rameshbabu: 05:43 What you do?

Saurabh Thosar: 05:43 I study the physiology goal mechanisms underlying physical activity. And in my case, physical inactivity. The area of exercise physiology is really broad, it goes from really athletic research and performance and elite athletes to people who have cardiovascular and metabolic disease and how do you develop exercise programs for someone who for instance, has had a cardiac bypass surgery or an angiography. It really encompasses a broad spectrum from elite activity to disease.

Saurabh Thosar: 06:14 In my case I am more interested in looking at the effects of other physiological mechanisms, physical inactivity, because I think that although it has been studied well recently, in the last decade or so, exercise has been studied really well since the early 1990s. But inactivity and sitting, we've only started to study this recently. So I want to focus more on that in my line of work.

Anjali Rameshbabu: 06:35 That's great. Okay. And I think that's important, because like you said, the science is just developing on that and it sounds like your work is going to have a lot more to illuminate on those mechanisms.

Saurabh Thosar: 06:46 I hope so.

Anjali Rameshbabu: 06:46 That's the hope. So you already gave us some recommendations as an exercise physiologist and just from your work and your experience. Are there any insights and recommendations that you have, how can we sit less on our job? And you mentioned breaking down that sitting time. So is there a specific goal we should be aiming toward?

Saurabh Thosar: 07:06 We did a study in 2014 where we saw that at least your functioning of your arteries drops down within the first hour of sitting.

Anjali Rameshbabu: 07:15 I see.

Saurabh Thosar: 07:15 Without moving though. So we had an experimental study where we didn't really let people move. You know in normal circumstances you might be moving a little bit even while you're sitting. And then we give people breaks every 30 minutes, at 30 minutes on the hour, so 30 minutes one hour, 30 minutes two hours, 30 minutes. And we found that poor functioning of the arteries recovered when you have that break. So based on that evidence I would say five minutes, we gave them five minutes, but I think three minutes or so every hour, at least for arterial functioning might be enough. More the merrier though.

Host Anjali R.: 07:47 Right.

Guest Saurabh T:	07:47	I think. Plus I think it might be helpful to just stand up and stretch and it takes less than a minute. If you have an office, then just walk in your office for a minute instead of emailing, go up flight of stairs and tell someone something if it's really basic. Things like that.
Host Anjali R.:	08:01	That's a really good point. Yeah, it doesn't take a lot. It doesn't take a lot to break those sitting cycles and also it's productive, you make more face to face contact because you're not sitting at your desk the whole time.
Guest Saurabh T:	08:12	Yeah.
Host Anjali R.:	08:12	And it seems like only good things can come out of breaking those.
Guest Saurabh T:	08:15	Yeah. Especially in a post [inaudible 00:08:18]. So, if you've eaten a meal, that's more in fat, etc., afterwards, after a meal, you could actually take five to ten-minute walking break or something like that, which will also help metabolism and negate the harmful effects of subsequent sitting. In our case, we have generated a route which we call the loop, and after most days of the week another faculty member and I and some of our lab mates, we go on this walk, which is about seven minutes. It's really refreshing and I think it's really helpful.
Host Anjali R.:	08:44	There you go, so there's a strategy too, find a walking buddy and you can schedule breaks.
Guest Saurabh T:	08:49	Or buddies.
Host Anjali R.:	08:49	Or buddies. Even better, more the merrier, right? Like you said. Okay. That's great. I think that is all we have, but we usually like to leave our listeners with resources that they can take back and to learn more on the science and any other information that they can take back on sitting and how to reduce it.
Saurabh Thosar:	09:05	So there's a website, there's a Sedentary Behavior Research Network, SBR, or SBRN, and that has a lot of resources, a lot of experimental articles, a lot of suggestions about how to break your sitting time, etc. there's also freely available information on the CDC's website. There is really good work from the Australian government, so if you search for Australian government, Department of Health, they have done a lot on recommendations for breaking sitting time etc., more than it has happened in America.
Anjali Rameshbabu:	09:34	I see.

Saurabh Thosar:	09:35	So those would be really good resources, I think.
Anjali Rameshbabu:	09:36	That's wonderful. All right. Well, thank you so much for joining us. This has been fascinating.
Saurabh Thosar:	09:43	Thank you for having me.
Helen Schuckers:	09:43	You're listening to What's Work Go To Do With It, your go-to resource on all things workplace safety, health and well-being. This has been an episode of our podcast series, where we invite you into the conversation as we discuss how our workplace conditions like work hours, occupational stress, job safety, and other issues affect our lives at home and at work. We go into the science behind it all and talk about what we can do to reduce work related risk and promote well-being. Thanks for joining us. This podcast is a production of the Oregon Institute of Occupational Health Sciences and is hosted and directed by Helen Schuckers, Sam Greenspan, and Anjali Rameshmabu.
Helen Schuckers	10:21	Our mission at the Oregon Institute of Occupational Health Sciences is to improve the lives of workers through biomedical and occupational research. Home to over 75 scientists and research staff, the Institute explores a range of questions related to the prevention of work related injury and disease and promotion of health in the workplace. Do you have an idea for a podcast episode? We want to hear from you on important workplace issues that you would like to discuss. Email us at occhealthsci@ohsu.edu.
Helen Schuckers	10:55	Subscribe to the Oregon in the Workplace blog or our social media channels at Facebook.com/occhealthsci.ohsu or follow us on Twitter at ohsuocchealth to stay updated on current research, resources, news and community events.