MS Podcast - Autism Explained
R4 Transcript

00:00:00:00 - 00:00:06:03
Leslie Schlacter
You know, one of the biggest misconceptions out there and I can say misconceptions because I'm educated to know it's not is that vaccines cause autism.

00:00:06:03 - 00:00:06:57
Leslie Schlacter
But that is not true.

00:00:06:57 - 00:00:09:01
Dr. Reichenberg
Vaccines do not cause autism.

00:00:09:03 - 00:00:13:07
Leslie Schlacter
why do we know that? I want people to hear this. Why do we know that vaccines don't cause autism?

00:00:13:07 - 00:00:23:08
Dr. Buxbaum
The best researchers in the field and in other fields have looked at it and ruled out an association between receiving a vaccine and triggering autism

00:00:23:08 - 00:00:29:51
Dr. Buxbaum
there has been not only no evidence, but there's been so much negative evidence. Right. You can't prove a negative unfortunately. Right.

00:00:29:51 - 00:00:32:30
Dr. Buxbaum
And it just is puzzling why it persists.

00:00:32:30 - 00:00:36:35
Leslie Schlacter
For the same reason. Lots of things persist with people. They just get stuck on it.

00:00:40:31 - 00:00:49:57
Leslie Schlacter
Hi, and welcome back to the vitals. Mount Sinai Health systems groundbreaking podcast. I'm your host, Leslie Schachter, a neurosurgery physician assistant here at the Mount Sinai

Hospital.

00:00:49:57 - 00:00:52:30
Leslie Schlacter
Today, we're taking a deep dive into autism.

00:00:52:30 - 00:00:53:53
Leslie Schlacter
What we know about its causes,

00:00:53:53 - 00:01:10:03
Leslie Schlacter
How it presents across different levels of severity, and how access to care and treatment vary widely. We'll also explore the difference between childhood and adult experiences, comorbidities such as epilepsy, and the current state of policy shaping autism research and treatment.

00:01:10:03 - 00:01:35:50
Leslie Schlacter
Joining us are two of Mount Sinai's foremost experts in the field. First, we have Doctor Avi Reichenbach, professor of psychiatry and environmental medicine and public health at the Icahn School of Medicine at Mount Sinai, and the director of Population Research and Environmental Epidemiology Program at the Seaver Center for Autism Research and Treatment. His groundbreaking research has advanced our understanding of autism's genetic and environmental risk factors.

00:01:35:55 - 00:01:51:26
Leslie Schlacter
Next, we're joined by Joseph Buck spam professor and vice chair of research in the Department of Psychiatry at the Icahn School of Medicine at Mount Sinai. Director of the Seaver Autism Center for Research and Treatment at Mount Sinai, and a leader in genetics and neurobiology of autism.

00:01:51:26 - 00:02:09:40
Leslie Schlacter
His work focuses on translating cutting edge research into targeted therapies and improved patient care. Thank you guys both so much for being here today. It's a pleasure. Yeah. So this is definitely a topic that everyone talks about. A lot of people that actually don't know what autism really is and a lot of people who thoroughly know what autism is.

00:02:09:40 - 00:02:19:05
Leslie Schlacter
So I'm excited to finally get it all out here today. So before we kind of get into the science of it all, would you mind just kind of defining autism in the most simple terms that you can?

00:02:19:16 - 00:02:42:46
Dr. Buxbaum
Sure. So autism the diagnosis of autism relies on two criteria. The first is deficits in social interaction and social communication. And the second is the presence of repetitive restricted behaviors or interests. And so you have on the one hand social deficits. On the other hand a focus on things that maybe seem a little bit, out of the ordinary.

00:02:42:46 - 00:02:50:02
Leslie Schlacter
those things that you can follow on guidelines that are written on paper. Or is that up to whoever is doing the evaluation?

00:02:50:07 - 00:03:08:10
Dr. Buxbaum
So there are very formal guidelines, called so-called DSM guidelines, and they're actually codified in assessment tools where you can actually measure multiple things, ask questions about interest, you can ask questions about social interactions and so on. And you can actually get a score at the end of the day.

00:03:08:19 - 00:03:13:01
Leslie Schlacter
Okay. So that's kind of once you hit a certain score, you know, that you're giving that diagnosis.

00:03:13:01 - 00:03:17:08
Leslie Schlacter
where are we today at understanding the causes of autism.

00:03:17:13 - 00:03:45:04
Dr. Buxbaum
So we're actually very good about understanding general causes. When we think about causes of of a disease or a trait. You know, in broad strokes we could talk about the environment, about genetics, we could talk about other things like that. And we actually can estimate the relative contribution of major factors in the sense that, for example, a genetic disorder looks different than an environmentally cause disorder.

00:03:45:08 - 00:04:13:52
Dr. Buxbaum
Genetic disorder, by definition almost is going to be more similar if you're more genetically related. Right. So twins, identical twins that are fully genetically related are going to look exactly the same. That tells you that the way we look as genetic right. As you get further and further away from your relatedness, if you go through, you know, fraternal twins, siblings, first cousins, the less you look less and less alike because that genetic sharing is going down right.

00:04:13:58 - 00:04:39:55
Dr. Buxbaum
So genetic disorders have a very characteristic footprint if you will. Conversely sort of environmental disorders if things change based on culture or geography. Smoking versus not smoking. Right. It's pretty obvious. Right? So we don't have to actually know what part of a cigaret causes cancer, lung cancer, to know that it's actually caused by environment. And it's also true for genetics.

00:04:39:59 - 00:04:45:12
Dr. Buxbaum
We can say something is largely genetic even without finding the specific genetic cause.

00:04:45:12 - 00:05:02:23
Dr. Buxbaum
So we've got we've come a long way. A lot of critical work over decades, a lot of groundbreaking work. But I'll be right. Bloomberg as an example, showing that autism is largely genetic. And the breakthrough, most recent breakthrough is we're finding the actual genes.

00:05:02:28 - 00:05:02:54
Leslie Schlacter
Right back.

00:05:02:55 - 00:05:04:33
Dr. Buxbaum
That later. Maybe that's a good idea.

00:05:04:38 - 00:05:23:53
Leslie Schlacter
Okay. But well, before we get too far now you guys are going to hate this question. But before we get too far into like, the medicine and the science, there's a lot of shows out there on television that like that go over and have actors or documentaries that have people that have autism or on the spectrum there, there's a show Meit's, my daughter's favorite show.

00:05:23:53 - 00:05:35:21
Leslie Schlacter
It's called love on the spectrum, and it's a dating show for autistic people. There's also a show atypical. Rainman was a movie from the past community. Do you guys, do you guys watch these? You know what I'm talking about.

00:05:35:26 - 00:05:36:35
Dr. Reichenberg
I watch streaming.

00:05:36:40 - 00:05:40:24
Leslie Schlacter
Okay, yes. You're like. But have you seen love on the spectrum? You know, I'm talking about that.

00:05:40:25 - 00:05:43:14
Dr. Reichenberg
I know what you're talking about. I haven't seen the show.

00:05:43:16 - 00:05:48:44
Leslie Schlacter
Okay, so let's just go with Rain Man. Was that an accurate portrayal of autism?

00:05:48:49 - 00:05:58:21
Dr. Reichenberg
Of severe autism? I think it was in a good portrayal of one more severe form of autism.

00:05:58:25 - 00:06:12:08
Leslie Schlacter
Okay, yeah. Because like, when I watched shows, like Gray's Anatomy or E.R. as a neurosurgery PA, I'm like, they're using, like, a suction as an intubation tube. Come on. So when you watch these things, or is it similar, like, they're just not quite getting it.

00:06:12:08 - 00:06:32:47
Dr. Reichenberg
I'll take us one step backwards to the question you started with, which is what is autism? And you said it to yourself that there are symptoms. And then there is the point where we decided someone meets the diagnosis and then somebody doesn't need to diagnose. So this is the spectrum where you can have different levels of severity.

00:06:32:52 - 00:06:52:28
Dr. Reichenberg
The other thing that I think hides in the word spectrum, that is sometimes less highlighted, is the fact that there would be a lot of differences, even within people that we call those have autism spectrum disorder. There will be a wide range of differences, even for someone with the same score as somebody else.

00:06:52:34 - 00:06:53:54
Leslie Schlacter
Oh yeah. Interesting.

00:06:53:59 - 00:07:04:38

Dr. Reichenberg
So it's when when someone is portraying an individual with autism, I probably the the dating show shows that. Yeah y differences very much.

00:07:04:38 - 00:07:05:22
Leslie Schlacter
Yeah.

00:07:05:26 - 00:07:34:31
Dr. Reichenberg
How they think about relationships, how they react to relationship. And that's what's kind of underneath the concept of spectrum. And when an actor is portraying, in somebody with autism, it's probably based on their experience or what they read. And it's a one, one certain way of doing it. And I'm sure you can find a lot of ways that families who have kids with autism relate to certain behaviors.

00:07:34:34 - 00:07:39:27
Dr. Reichenberg
Right? But it has to be exaggerated most times because it is acting.

00:07:39:27 - 00:07:40:15
Leslie Schlacter
I mean, it's for TV.

00:07:40:15 - 00:07:41:06
Leslie Schlacter
Yes.

00:07:41:06 - 00:07:54:23
Leslie Schlacter
So you were talking about a spectrum and you hear people nowadays say like I have teenagers and they'll say they'll call me and be like, I have this new friend. I think they're on the spectrum. Okay. What does that mean? What is actually the spectrum? What's this part in this part of the spectrum?

00:07:54:23 - 00:08:17:45
Dr. Buxbaum
the spectrum is broad, and it may not be that important to understand the entire spectrum because we are a medical center, and we're thinking about helping people and somebody who has a little bit of difficulty in, you know, in, in language prosody, how they make their, you know, give, give and take in conversation means a different level of care than somebody who is nonverbal.

00:08:17:58 - 00:08:18:39
Leslie Schlacter
Right, has.

00:08:18:39 - 00:08:43:02
Dr. Buxbaum
Intellectual disability and really has no or minimal adaptive skills, can't navigate the world. So one of the things, that really is critically important in autism, and one of the reasons why the TV shows can't really capture it, is that about quarter to a third of individuals with autism have what we now call profound autism. We made a new term just because people conflict.

00:08:43:06 - 00:08:45:29
Leslie Schlacter
Yeah, we're using it too broadly now.

00:08:45:34 - 00:08:52:35
Dr. Buxbaum
And profound autism is defined by somebody who will need 24 hour access to an adult for the rest of their.

00:08:52:35 - 00:08:53:46
Leslie Schlacter
Lives, right?

00:08:53:51 - 00:09:19:48
Dr. Buxbaum
And almost certainly have significant intellectual disability, almost certainly have limited or no language, and have poor adaptive skills, poor navigational skills in terms of navigating the world. Right. And that is what the medical center tends to focus on. There's plenty to be done. Everybody needs help. And certainly somebody who you know is socially awkward has a little bit of right, right.

00:09:19:53 - 00:09:39:13
Dr. Buxbaum
They'll be on TV, they'll be on the show, it'll be very interesting. They have their own lived experience, which is interesting and important, but the kind of help they need is very different than the kind of help somebody needs who has life long and who has a need for lifelong access to an adult. And actually, we divide the spectrum now into levels one, two and three.

00:09:39:18 - 00:10:02:09
Dr. Buxbaum
Level one is needing some support or needing support, needing significant support, needing very significant support. And that that third tier is where our center is focused on right. Obviously

there's much to be done for everybody who has needs, and we have a whole program on social skills training or jobs training for people on the spectrum, but that's very different.

00:10:02:09 - 00:10:07:54
Dr. Buxbaum
If you're looking for a job, you probably don't have intellectual disability. You probably have some language.

00:10:07:59 - 00:10:22:29
Leslie Schlacter
Right? I think it's probably too freely use nowadays, like when I'm at night. At night when I'm scrolling Instagram, there might be an ad that comes up with a t shirt that says, I'm somewhere on the spectrum. It's not very funny. But though it is, it's a little freely used now

00:10:22:29 - 00:10:43:45
Dr. Reichenberg
as a thought when, when Joe was describing the. He was describing describing the spectrum. When, when we started we talk about, autism and we say it's genetic and kind of people think of scientists in white coats sitting in a lab, and.

00:10:43:45 - 00:10:44:36
Dr. Buxbaum
We're all like.

00:10:44:41 - 00:11:07:04
Dr. Reichenberg
Yeah, I'm measuring something. You can see that's not the case. But, I think people actually have a very good intuition into what genetics is. They just don't know that it's called genetics. So the there are two questions we usually get. One is hi, I have a brother with autism. I want to have kids. What is the risk for my child to have autism?

00:11:07:04 - 00:11:07:48
Leslie Schlacter
Right?

00:11:07:53 - 00:11:08:41
Dr. Reichenberg
This is genetics.

00:11:08:56 - 00:11:09:50
Leslie Schlacter
Yes.

00:11:09:55 - 00:11:27:22
Dr. Reichenberg
Because people intuitively understand that there is something that is heritable that that it runs in families, that increases their chances or potentially increases their chances of having a child or a brother or a sister or a grandchild with autism.

00:11:27:22 - 00:11:34:33
Leslie Schlacter
But can you speak even deeper to that? That's actually my next question. I really because your research is in the genetics of autism. Correct.

00:11:34:33 - 00:11:36:26
Dr. Reichenberg
Genetics and environmental risk factors.

00:11:36:26 - 00:11:50:30
Leslie Schlacter
Okay. So you had started off by saying that genetics is the number one risk for autism, right? So what is what is there a number associated with that. Back to that person you were just talking about. They're worried if they have kids, what's that number that they need to be worried about.

00:11:50:30 - 00:11:56:02
Dr. Reichenberg
fantastic question really, because what people usually hear is that

00:11:56:02 - 00:12:07:52
Dr. Reichenberg
autism is heritable, and then they hear a number. And what heritable means is that they're the risk or the genes that typically cause autism or that could cause autism run in families.

00:12:07:59 - 00:12:11:55
Dr. Reichenberg
That's all that it means. And then they hear a number 80%, 60%.

00:12:11:55 - 00:12:12:40
Leslie Schlacter
50, right.

00:12:12:42 - 00:12:21:07
Dr. Reichenberg
90%. It doesn't matter. It doesn't really matter for most cancers, for example, the number is much lower.

00:12:21:11 - 00:12:21:32
Leslie Schlacter
Right?

00:12:21:33 - 00:12:55:23
Dr. Reichenberg
We know that there are genetic causes for cancer. For us, that number means be something. It means that we should focus our efforts in finding risk factors or causes more in the genetics eyes side of research than on non-genetic side. Okay, for families, I think that the important thing is their own intuition. I know that if one child in the family has autism, there is a bigger chance that another child will have it and I know if my grandson had it and my daughter is about to have a child, there might be a higher risk.

00:12:55:23 - 00:13:03:37
Dr. Reichenberg
I want to know what I should do and how I should handle that. I think that's the difference between scientists getting a number and what this number means.

00:13:03:37 - 00:13:12:16
Leslie Schlacter
But can they actually do something like if it's genetic, you can't really change your genetics? Well, now I don't think we can change the genetics now. Hopefully we can in the future.

00:13:12:20 - 00:13:15:09
Dr. Reichenberg
But so

00:13:15:09 - 00:13:23:06
Dr. Reichenberg
one thing that comes with the word genetics is everybody thinking that if you have something it's definitely going to happen.

00:13:24:00 - 00:13:25:34
Dr. Reichenberg
Genetic determination.

00:13:25:39 - 00:13:26:14
Leslie Schlacter
Okay.

00:13:26:18 - 00:14:01:20
Dr. Reichenberg
And there is a type of autism, especially the more severe form that comes also with a level of

genetic determination. If they have some of the more rare causes or genetic factors. And I'm using a lot of terms that I didn't want to use, and Joe would be much better at describing it than I am, then they are very likely to have autism, but for the majority of cases, there is a range of a lot of small effects that could accumulate and might cause autism.

00:14:01:24 - 00:14:04:38
Leslie Schlacter
Are those the environmental ones that you're talking about? Well.

00:14:04:42 - 00:14:07:22
Dr. Reichenberg
That's not necessary.

00:14:07:26 - 00:14:08:42
Leslie Schlacter
Not yet. Okay, okay.

00:14:08:47 - 00:14:31:27
Dr. Reichenberg
The way to think, in the same way that we are thinking of, we are seeing that genetic factors contribute substantially to the possibility that one person will have autism, while another person will not have autism. When we take the most the natural when we take the natural experiment, which is identical twins, they share everything.

00:14:31:37 - 00:14:32:10
Leslie Schlacter
Right.

00:14:32:15 - 00:14:46:32
Dr. Reichenberg
Through environment. They share the growing environment. They have the exact same genes. If one is autism, the chances that the other one will have autism is only 50%, even if they are identical. Disagree?

00:14:46:37 - 00:14:52:02
Leslie Schlacter
Oh disagree out loud. That's the fun part of this.

00:14:52:06 - 00:15:09:18
Dr. Reichenberg
If it doesn't mean that there will not be other developmental problems, because autism is a very complex right. And there is a spectrum, as we said before. So there could be somebody crossing the threshold right?

00:15:09:23 - 00:15:14:35
Leslie Schlacter
Yeah. You were saying like there's there's numbers. You have there's boxes. Some of these boxes might be different than somebody else's boxes.

00:15:14:35 - 00:15:16:05
Dr. Reichenberg
I'm really trying to simplify things.

00:15:16:05 - 00:15:18:00
Leslie Schlacter
And yeah, yeah.

00:15:18:05 - 00:15:20:06
Dr. Buxbaum
But I think that's an important point, right. Yeah.

00:15:20:06 - 00:15:26:39
Dr. Buxbaum
If we divided the entire population into tall there's not 12.

00:15:26:44 - 00:15:29:53
Leslie Schlacter
You're not talking less tall than.

00:15:29:58 - 00:15:47:02
Dr. Buxbaum
You know, somebody who is six foot five would be tall and somebody six foot five, maybe five foot nine would not talk male and somebody six foot two would be tall. And we'd say, oh, look, here are two identical twins and one is not tall and one is tall. Meanwhile, the both pretty tall.

00:15:47:08 - 00:15:47:31
Leslie Schlacter
Right?

00:15:47:31 - 00:16:07:07
Dr. Buxbaum
And because we have a hard cutoff, especially in research around autism, those twins that are that are not concordant, that where one has autism and other one doesn't, it's really and we know this because we've actually gone back 18 years later and met the twins again. One of them has autism and the other one doesn't but just misses it.

00:16:07:12 - 00:16:08:05
Leslie Schlacter
Okay.

00:16:08:09 - 00:16:14:15
Dr. Buxbaum
Right. So if we had a quantitative measure, you got a 90, you got an 89. It's out of there. Pretty similar.

00:16:14:18 - 00:16:18:09
Leslie Schlacter
So then if you look at their genes, are you going to see a difference.

00:16:18:14 - 00:16:31:05
Dr. Buxbaum
So with the identical twins there's effectively no difference. And the difference really is more about the measurement. Remember we are trying to quantify somebody's social behavior. Think we're good at that. Then we can get it like no.

00:16:31:09 - 00:16:32:13
Leslie Schlacter
No it's hard.

00:16:32:13 - 00:16:35:13
Dr. Buxbaum
Maybe that person today looks like this. And the next day they look like.

00:16:35:13 - 00:16:35:47
Leslie Schlacter
That, right?

00:16:36:00 - 00:16:47:51
Dr. Buxbaum
But in research with very strict and we say this is different. This is not right now if we go if it was height and I said that to you, this person's tall. This one's not you look at me.

00:16:48:00 - 00:16:48:50
Leslie Schlacter
Right.

00:16:48:50 - 00:16:57:19
Leslie Schlacter
why laugh at anyone that thinks somebody who's like six feet is tall? Because to me, you can

only be tall over six, four.

00:16:57:23 - 00:17:03:56
Leslie Schlacter
I would, you know, the rule is good. We're not.

00:17:04:01 - 00:17:06:01
Dr. Reichenberg
You must come with others.

00:17:06:05 - 00:17:20:08
Dr. Buxbaum
But I think obvious point is very good that even even when people don't share a lot of genetics, don't quite share the trait of autism, they might share a whole bunch of other behavioral things that tend to come together. They might still have challenges in life.

00:17:20:15 - 00:17:27:54
Leslie Schlacter
So if that's the case, how do you direct your genetic research? If you're if you leave so much to nuance.

00:17:28:00 - 00:17:41:30
Dr. Buxbaum
It turns out you know if I want to understand height okay. Across the spectrum. Right. I can actually look at people of any height and measure genetics. And so these are some of the things that are driving you to be more here or more here.

00:17:41:35 - 00:17:41:52
Leslie Schlacter
Right.

00:17:41:52 - 00:18:03:34
Dr. Buxbaum
Not saying tall not tall. Right. What is your height right. And just like height there are what are we talking about? These kind of things that add together with small effect what we call polygenic genetic variants that, you know, our each one has a tiny effect on height. But when you go, when you have hundreds of them, you're more likely to be tall versus not tall.

00:18:03:38 - 00:18:09:58
Dr. Buxbaum
That's the polygenic part. But there's also things in height that are major mutations. So dwarfism.

00:18:10:13 - 00:18:10:46
Leslie Schlacter
Right.

00:18:10:50 - 00:18:34:58
Dr. Buxbaum
Syndrome where it is still there. But it's not that important for most people. It's driven by all the things adding together, making you more tall or more short. But if you have certain kinds of dwarfism or certain kinds of genetic forms of very extreme height, like Marfan syndrome, that's caused by a genetic change that has a high effect change and autism is the same way.

00:18:35:03 - 00:18:41:36
Dr. Buxbaum
Okay. Yeah. Things that are major affect genes and things that are polygenic, that we all have some of those genes.

00:18:41:41 - 00:18:48:11
Leslie Schlacter
Right. And you were saying that Mount Sinai generally focuses on you said profound autism is the diagnosis that we use now profound.

00:18:48:20 - 00:19:05:20
Dr. Buxbaum
we are actually one of the few sites that have always focused on profound autism, not exclusively, but for many years, research was never done in profound autism because it's much harder to do. You can't ask questions if somebody is nonverbal. You can't even do imaging studies if they're not able to sit still and listen.

00:19:05:20 - 00:19:06:33
Leslie Schlacter
To it right.

00:19:06:38 - 00:19:32:21
Dr. Buxbaum
And so when I came into the field, everything we thought we knew about the neuroscience of autism were people who, over 18 volunteered, to go, you know, to join the study. We'll give it a complicated task in a scanner. And then and they had autism, but they didn't really tell us much about anybody who couldn't write, who couldn't do a complicated task, an MRI scanner.

00:19:32:26 - 00:19:55:58
Dr. Buxbaum
And then have answer questions before and after. And so we decided to figure out how I also found autism. But it's also where the greatest need is. So we tend to focus at Sinai on profound

autism because we actually think that's where the greatest need is. And we have treatments already in the field for people who have less severe, you know, their level of need is much lower.

00:19:56:03 - 00:20:04:27
Leslie Schlacter
So what is that? So I would imagine that if you have profound autism, what's like what's the age that one would be noticing that generally.

00:20:04:27 - 00:20:07:28
Dr. Buxbaum
experts I can see autism emerging by 18 months.

00:20:07:34 - 00:20:07:56
Leslie Schlacter
Okay.

00:20:08:11 - 00:20:11:40
Dr. Buxbaum
Now the profound autism is often coming with other.

00:20:11:40 - 00:20:12:30
Leslie Schlacter
Things, right.

00:20:12:35 - 00:20:22:43
Dr. Buxbaum
Language delay, motor abnormalities, intellectual cognitive delays. And so you actually often see things even before 18 months. They're missing milestones or development.

00:20:22:47 - 00:20:40:16
Leslie Schlacter
So how long do you follow those patients for. Like what's the difference between treating like adolescents with autism versus adults? Because I would imagine, you know, someone who's been there all along who's been getting that treatment, but now there's people that are getting diagnosed as adults. Are we are you guys seeing those people too, and treating them?

00:20:40:16 - 00:21:04:55
Dr. Reichenberg
it's important to know or to remember. It's important to remember that, as you said, people get a diagnosis at a very early age. And the more severe the cases, I think the earlier it is being noticed, especially in recent decades, people are more educated, clinicians are more educated, they're more aware, they're looking for kids who have difficulty developing.

00:21:04:55 - 00:21:51:06
Dr. Reichenberg
And so they're being diagnosed much earlier. But people receive individuals receive a diagnosis of autism all through adolescence, right through early adulthood, and sometimes even after early adulthood. Part of it is because, there was an awareness for that kind of a condition in ten, 20 or 30 years ago. And with that came the concept of the spectrum, because those who were less severe, those who were had, who had other coping mechanism, those who had other disorders that are as severe as their autism or spectrum autism received other diagnosis, were able to function and so they get a diagnosis a lot later.

00:21:51:06 - 00:21:53:16
Leslie Schlacter
Right.

00:21:53:21 - 00:22:08:58
Dr. Reichenberg
Does it make, necessarily a difference or a need for them, to be treated? Not to all of them. Some of them just want to know that they have it. Yeah. And and okay. I make peace with that.

00:22:08:58 - 00:22:11:52
Leslie Schlacter
Now they're like, oh, now this all makes sense. Yeah.

00:22:11:57 - 00:22:20:57
Dr. Reichenberg
Everything a lot of things that happen to me. Yeah. Some would like to receive treatments that help in social communication.

00:22:20:57 - 00:22:21:27
Leslie Schlacter
And

00:22:21:27 - 00:22:22:42
Leslie Schlacter
what are those treatments?

00:22:23:44 - 00:22:25:04
Dr. Reichenberg
Joe.

00:22:25:09 - 00:22:30:01
Dr. Buxbaum
Yeah. So the treatments, if you will, are behavioral, right.

00:22:30:06 - 00:22:33:48
Leslie Schlacter
So like CBT, cognitive behavioral therapy. Okay.

00:22:33:53 - 00:22:57:13
Dr. Buxbaum
If you are, you know, if you've been diagnosed in your 20s with autism and you kind of navigating life well, but you have challenges, then often what's going to happen is you're going to address the challenges I have. I have difficulties in social situations, and you can actually be trained to do better, to be able to, you know, take a pause, give somebody else a chance to talk.

00:22:57:18 - 00:23:10:08
Dr. Buxbaum
I haven't learned that myself. But someday, you know, making eye contact, you can actually there there are social skills training groups that will actually help you do that more smoothly. We do something about job interviews,

00:23:10:08 - 00:23:14:53
Dr. Buxbaum
That first impression is important. You can be the greatest person for the job, but if you kind of come on.

00:23:14:53 - 00:23:15:36
Leslie Schlacter
Too, right?

00:23:15:41 - 00:23:32:35
Dr. Buxbaum
Or you're kind of disengaged, you know, you may not get the job that's actually perfect for you. And so job training says, okay, we're going to walk you through this process where, you know, for some people it's natural for some people, it's less natural. And we'll help you navigate this problem. So I think, you know, I think all.

00:23:32:35 - 00:23:43:47
Leslie Schlacter
Of what we do, I feel like that should be in every school system for everyone. All these kids are like stuck on their phones and don't even know how to have face to face conversations. There should be social norms classes.

00:23:43:51 - 00:23:46:28
Dr. Reichenberg
In a few years. The kids with autism spectrum.

00:23:46:28 - 00:23:50:12
Leslie Schlacter
Disorder are going to be doing better, better. Yeah.

00:23:50:17 - 00:23:52:43
Dr. Buxbaum
So that's anyway. So that's one form of treatment, if

00:23:52:43 - 00:23:53:43
Dr. Buxbaum
you will. But it's

00:23:53:57 - 00:24:03:15
Dr. Buxbaum
directed at, you know, crafting skill, developing skills. And maybe if you're younger changing behaviors. Right. But the ABA based approaches.

00:24:03:20 - 00:24:12:34
Leslie Schlacter
What about like I know that for people who get nervous in situations or public speaking, you can take like beta blockers or anxiety. Is that something that's utilized again?

00:24:12:34 - 00:24:21:41
Dr. Buxbaum
And people that have that have, you know, minimal needs that have also had the usual spectrum of anxiety and maybe ADHD.

00:24:21:47 - 00:24:50:23
Leslie Schlacter
So just treat as normal, okay. As but yeah, I understand. So from a public health perspective, access to care is important, right. So I guess we're going back more towards the higher end of the spectrum. Now, there are some conditions that, choose communities that typically have poor access to care. Does this have a socioeconomic class that it tends to go to, or is this just everyone and are people are people who need the care, getting the care.

00:24:50:27 - 00:25:09:57
Dr. Buxbaum
So that's the easy one. It is. It is. No. So we think that all too. And again, because it is so heavily genetically loaded, it doesn't really care about your socioeconomic status. The level of care you get completely depends on that to even how how old you are when you're diagnosed as directly related to access and socioeconomic status.

00:25:10:12 - 00:25:15:06
Leslie Schlacter
Like are these the treatments for younger people? Are these covered by Medicaid?

00:25:15:11 - 00:25:21:51
Dr. Buxbaum
So it's a complicated thing. There's a lot of state involvement. Some things are better than others. And then.

00:25:21:56 - 00:25:36:40
Leslie Schlacter
You know, it's called like early learning intervention. What's that called? The early learning. But you can have your child evaluated. So you guys are like, I don't know, they just show up. That's all I know. Okay. How did you get that? Yeah. There's evaluations that you can have the state do on your child. Yeah.

00:25:36:45 - 00:25:41:58
Dr. Buxbaum
They will say, you know, this this is this is the kind of early intervention.

00:25:41:58 - 00:25:42:07
Leslie Schlacter
Yeah.

00:25:42:20 - 00:25:58:23
Dr. Buxbaum
That's the kind of thing that this child will need to be successful. Right. So you can have that done. It's very hard to get done if you don't have access. If you don't have full, it might take a long time. If you're under resourced school, it may take a long time. If you're in, a county that, you know, doesn't take it seriously.

00:25:58:23 - 00:26:07:02
Dr. Buxbaum
And the reason people with autism in their family move to different places throughout the country is often to get better access. Yeah, if they have the resources to do that.

00:26:07:06 - 00:26:28:30
Leslie Schlacter
Yeah. My, my son in like second or third grade had some difficulty in school. His attention span low tone. And I went through the early intervention and just filling out the paperwork, coordinating all of that and getting them to the right sites, I wanted to give up, and I was like, this is ridiculous. I can't imagine how somebody with less means than me would do that.

00:26:28:36 - 00:26:33:18
Leslie Schlacter
So we talked a lot about the behavioral treatments. What about pharmacological treatments for this.

00:26:33:23 - 00:27:01:01
Dr. Buxbaum
So we really don't have any drugs today that address the core symptoms of autism. But as we find more genes that actually are these higher risk genes that if you have a mutation, you have this kind of what I'll be called a genetic determinism, where you're very likely to have a very significant developmental delay issues, those that gene itself becomes a target for drugs, because that person accounts for most of the risk.

00:27:01:06 - 00:27:18:09
Dr. Buxbaum
And so there are many, many academic sites and many companies now that are beginning to try and target these genetic causes of autism. And the first studies that have come out in Angelman syndrome and fragile X syndrome have seen improvements in language cognition.

00:27:18:19 - 00:27:18:45
Leslie Schlacter
Wow.

00:27:18:46 - 00:27:38:33
Dr. Buxbaum
Daily living skills, which, as I also intimated, these are often much more impactful than the autism diagnosis. Many families say it's not the autism like my kid never sleeps. It's not the autism. My kid's not totally right. My kid hasn't had this has very severe intellectual disability. Fix that and we'll talk about the autism.

00:27:38:38 - 00:27:46:29
Leslie Schlacter
So when can you use these potential. Is that something that they have to be alive. Is this something you learn on amniocentesis. Where where are we.

00:27:46:29 - 00:28:08:19
Dr. Buxbaum
so the treatments are just emerging okay. And FDA has just approved phase three trials for the child that I just mentioned. So we don't even have the final results yet. But the results so far look really good. The testing is easy. You can test anybody at any time for a specific genetic change. Okay. You want to say, does this child have fragile X syndrome?

00:28:08:19 - 00:28:18:26

Dr. Buxbaum
Does don't have fragile X syndrome. We can test that tomorrow. Right. So it's about testing for a specific treatment. And only when we have treatments that really.

00:28:18:26 - 00:28:32:28
Leslie Schlacter
Work I say good test. You talked about the comorbidities that they often have. Things like, one of the things that we hear a lot about is epilepsy. How often is epilepsy presenting with autism or vice versa?

00:28:32:28 - 00:28:38:14
Leslie Schlacter
epilepsy a seizure disorder. Just so you know like it's the brain abnormally firing which leads to seizures.

00:28:38:14 - 00:28:42:02
Dr. Buxbaum
Again, it depends on severity. Certainly as you go to the more severe,

00:28:42:02 - 00:28:43:17
Dr. Buxbaum
the greater level three

00:28:43:17 - 00:28:51:59
Dr. Buxbaum
requires more support. Epilepsy is more common, 30%, 40%. In some disorders it could be even higher than that. And it's quite it's quite debilitating.

00:28:51:59 - 00:28:54:49
Leslie Schlacter
What's the pathophysiology of that. Why why is that

00:28:54:49 - 00:28:55:17
Leslie Schlacter
how.

00:28:55:17 - 00:29:08:15
Dr. Buxbaum
So let me ask you as a neurosurgeon, what links together social deficits, cognitive deficits, language delay, motor mouth motor abnormalities.

00:29:08:20 - 00:29:17:04
Leslie Schlacter

We're looking for a part of the brain. The amygdala that well I mean across the midline the corpus callosum.

00:29:17:16 - 00:29:37:58
Dr. Buxbaum
Yeah. So it's it's some developmental brain process that turns out to affect a lot of things at once. It's pretty rare, I would say. I would also say it's I mean, by definition, if somebody has level three autism or found autism and they have intellectual disability and limited language, you know, a lot going on.

00:29:37:58 - 00:29:38:56
Leslie Schlacter
Yeah. Right. Yeah.

00:29:38:58 - 00:29:51:11
Dr. Buxbaum
And within that, within that developmental trajectory of the brain where, you know, there are issues during the actual development of the brain and the function of the brain. Epilepsy is not that surprising in that right?

00:29:51:16 - 00:29:53:49
Leslie Schlacter
Right. So the brain is just not firing the way that it should.

00:29:53:54 - 00:30:18:30
Dr. Buxbaum
Think of epilepsy. People talk about the balance of excitatory and inhibitory nerves and behavior. Everything is a balance between excitatory in between. That's how we function. But we think of epilepsy as being, you know, this, that you're kind of in this concept of categorization where the brain develops this way typically, but it maybe it jumps and you develop a little bit differently.

00:30:18:44 - 00:30:26:52
Dr. Buxbaum
And that can that brings in a burden of other disorders epilepsy, intellectual disability, language delay, motor abnormalities and autism.

00:30:27:01 - 00:30:32:58
Leslie Schlacter
So then the epilepsy in that situation is treated just like any other comorbidities. Treat it as it comes.

00:30:33:03 - 00:30:36:16

Dr. Buxbaum
But it sometimes doesn't respond well to treatment.

00:30:36:21 - 00:30:36:59
Leslie Schlacter
Right.

00:30:37:04 - 00:30:46:41
Dr. Buxbaum
And so there is also the hope that if we can go back to the fundamental causes of that autism, that epilepsy may also get back.

00:30:46:46 - 00:30:53:46
Leslie Schlacter
So how far away do you think we are from that genetic manipulation, that pharmacogenetics treatment that you were talking about.

00:30:53:46 - 00:31:17:10
Dr. Buxbaum
in Angelman syndrome, there are three, three trials approved by the FDA for this year to do pivotal trials. Angelman syndrome is a genetic condition with very high risk for autism and developmental delay. It has certain characteristics that make it a little bit more tractable for genetic interventions for gene based therapeutics. And that's why we see three companies coming out at the same time.

00:31:17:14 - 00:31:36:23
Dr. Buxbaum
I think we're there. I think in the next couple of years, there's going to be some breakthrough findings that are only going to address a small fraction of autism. But imagine once we see that happening, somebody maybe that they don't even have 100%, maybe they just have intellectual disability and the language.

00:31:36:28 - 00:31:37:19
Leslie Schlacter
We can improve that.

00:31:37:26 - 00:31:40:13
Dr. Buxbaum
They start getting better. Yeah. Then

00:31:40:13 - 00:31:58:55
Dr. Buxbaum
the lemmings in pharma who will never do anything first, who will never take the first step, who

always want to be right. But rapid adopters right will say, oh my God, we can actually make a difference for people with real significant developmental delay burden and they'll start to get involved.

00:31:59:00 - 00:32:21:19
Dr. Buxbaum
So I think our role in academia is to take these risks. But you know, somebody who is kind of beholden to the so their shareholders can't do, which is actually try and help people that are, you know, maybe it is just a small percentage of everybody with autism. But if we can make that better, everybody will jump in and try to help everybody with autism.

00:32:21:23 - 00:32:24:10
Leslie Schlacter
Yeah. Well do you want to add to that?

00:32:24:12 - 00:32:33:59
Dr. Reichenberg
I just wanted to say that the the start would probably come from the treatment of rare disorders. We are still far from a GP one like medication in autism.

00:32:34:04 - 00:32:34:24
Leslie Schlacter
Right.

00:32:34:24 - 00:33:02:20
Dr. Reichenberg
So for anyone listening and once the news come out and there might be a drug and think, oh, this could work with my kid, it might not because it will be targeting a very specific population. I thought that also adding a little bit to what, Joe was mentioning about the fact that individuals with autism especially, and with a more severe form of autism, have multiple, developmental difficulties, different disorders.

00:33:02:25 - 00:33:19:55
Dr. Reichenberg
And for us, one of the question is why do they have multiple disorders? And is it the same thing that causes all of them? Or is it different things that happen to occur in real individual at the same time? And I don't have a good answer for it.

00:33:20:02 - 00:33:22:47
Leslie Schlacter
Well, in medicine you're supposed to choose the former things. So.

00:33:22:47 - 00:33:24:23

Dr. Reichenberg
Maybe where is the one that you're.

00:33:24:23 - 00:33:25:22
Leslie Schlacter
Supposed to pick? That one thing.

00:33:25:37 - 00:33:39:17
Dr. Reichenberg
Bullets that will hit the right one and then everything will unfold. So, most of what we think right now is that there is some overlap in terms of the genetic of all of these disorders. But we might be wrong. So.

00:33:39:17 - 00:33:40:58
Leslie Schlacter
Right. I guess we'll find out.

00:33:40:58 - 00:33:47:01
Leslie Schlacter
You know, one of the biggest misconceptions out there and I can say misconceptions because I'm educated to know it's not is that vaccines cause autism.

00:33:47:01 - 00:33:49:54
Leslie Schlacter
But that is not true. That's been debunked over and over.

00:33:49:59 - 00:33:51:56
Dr. Reichenberg
Vaccines do not cause autism.

00:33:52:01 - 00:33:58:51
Leslie Schlacter
So why do we know that? I want people to hear this. Why do we know that vaccines don't cause autism?

00:33:58:55 - 00:34:25:54
Dr. Reichenberg
Well, dozens of studies which specifically looked at this question, do vaccines increase the risk for autism? Definitely don't cause autism. They don't. The best researchers in the field and in other fields have looked at it and ruled out an association between receiving a vaccine and triggering autism. Okay, it doesn't go hand in hand.

00:34:25:59 - 00:34:27:29

Leslie Schlacter
Okay. Want to add anything to that?

00:34:27:33 - 00:34:48:01
Dr. Buxbaum
Yeah. And it's also there's also been somewhat of a moving target. Right. Many years ago it was the preservative in the vaccine that I or someone that caused autism until somebody got up and said, well, Canada has stopped using fine aerosol for many years. What is the difference in rate? And in Canada, in America there was no difference.

00:34:48:06 - 00:35:03:46
Dr. Buxbaum
We stopped using in America. And then they said, well it's the adjuvant, right. So there's a bit of a moving target, but writ large. If you look at vaccines and autism, there's been not only no evidence, but there's been so much negative evidence. Right. You can't prove a negative unfortunately.

00:35:03:54 - 00:35:05:03
Leslie Schlacter
Right.

00:35:05:08 - 00:35:25:40
Dr. Buxbaum
Is there one person somewhere who they can't prove that that's not the case? But this is this has been studied so extensively on huge scale, national level scale studies that continually refute the relationship between vaccines and autism. And it just is puzzling why it persists.

00:35:25:45 - 00:35:30:06
Leslie Schlacter
Yeah. For the same reason. Lots of things persist with people. They just get stuck on it.

00:35:30:06 - 00:35:44:28
Leslie Schlacter
I was talking with my father about this before coming here today, and he was explaining to me that I don't know when maybe it was like two decades ago, school systems would get paid, get reimbursed, for any child that was diagnosed with autism.

00:35:44:33 - 00:35:59:41
Leslie Schlacter
And he said, that's probably one of the reasons autism started to increase. It was just overdiagnosis. So over the last several decades, there has been an increase in the diagnosis. Was it is there something more nefarious going on where this is undiagnosed before? What do we think that causes?

00:35:59:46 - 00:36:22:40
Dr. Buxbaum
I think it's I think we know that some of the causes and I think we know all of them. But, you know, maybe, maybe not. One is that the diagnosis has changed dramatically. It's much broader than it ever was before. When Leo Connor in the 40s defined autism, Johns Hopkins University, he talked about kids that he could see at age at four and five, and six months of age were different.

00:36:22:45 - 00:36:39:24
Dr. Buxbaum
They weren't reaching up for mom or dad to pick them up, which is a which is a built in innate reflex. We all have. We typically have. And so he talked about that kind of autism that is like ultra profound autism, if you will. That's not our criteria now.

00:36:39:38 - 00:36:40:07
Leslie Schlacter
Right.

00:36:40:12 - 00:36:44:52
Dr. Buxbaum
Autism are you know, they and they, you know, a mom reaches down or dad, they put up their hands.

00:36:45:04 - 00:36:46:50
Leslie Schlacter
So it's just a more inclusive diagnosis.

00:36:47:01 - 00:37:14:53
Dr. Buxbaum
Bigger, broader. Yeah, there's much more self-diagnosis. So the neurodiverse community might talk about themselves as opposed to a clinical diagnosis. We're much better at finding people with autism. In the past, we might have said, you know, this person is in a home. I mean, there are studies going around in the UK, different age groups that 50 year old, 60 year old trying to put everybody in a county who was 50 years old and asking with today's criteria, would they meet criteria autism?

00:37:14:53 - 00:37:24:24
Dr. Buxbaum
And the answer is yes. And it's about 1% all the way through the age group. Right. So in the in the in the 60s, that person might have been told, parents might have been told

00:37:24:24 - 00:37:33:20

Speaker 4
this child is not going to go to school. They have to be institutionalized. And they weren't given a diagnosis of autism, but they could have been using modern criteria.

00:37:33:34 - 00:37:46:35
Speaker 4
So those things by themselves are major drivers. And as you also said, having a diagnosis of autism actually gets you services that you don't get for other diagnoses. And those services are important whether or not

00:37:46:35 - 00:37:48:15
Dr. Buxbaum
you are absolutely required to go.

00:37:48:16 - 00:37:48:45
Leslie Schlacter
Right or.

00:37:48:45 - 00:37:58:24
Dr. Buxbaum
Not. And so it's almost it's almost compassionate for some clinicians to say that autism diagnosis, they get services guaranteed by their.

00:37:58:28 - 00:38:04:00
Leslie Schlacter
Yeah, that's really meaningful. That's that's a really big deal. Do you want to add to that?

00:38:04:05 - 00:38:14:05
Dr. Reichenberg
I think you use the perfect term to describe what we are seeing. So you said that people who are registered to have autism, the numbers have gone up.

00:38:14:10 - 00:38:14:59
Leslie Schlacter
Right.

00:38:15:04 - 00:38:44:23
Dr. Reichenberg
What we are seeing is that when you're using the same diagnostic criteria in a standard setup, it looks like the symptoms are at the same level throughout decades. It's just whether they're being diagnosed, they're being referred to the right services. The right services are available for them to be referred to. And the if there was any increase, the real increase would be very, very, very small.

00:38:44:28 - 00:38:56:22
Leslie Schlacter
I think that's probably one of the most important things you guys said today that this this rise of diagnosis is just that, the diagnosis of it, not necessarily actual, the true incidence of it or prevalence. Yeah.

00:38:56:22 - 00:38:58:02
Dr. Reichenberg
We don't think that causes of change.

00:38:58:07 - 00:38:59:07
Leslie Schlacter
Yeah. Okay.

00:38:59:12 - 00:39:04:51
Dr. Buxbaum
But also people have looked at you have gone back in time, you know, and said okay let's apply today's criteria.

00:39:04:55 - 00:39:05:41
Leslie Schlacter
Yep.

00:39:05:46 - 00:39:07:34
Dr. Buxbaum
And they, they say it hasn't changed.

00:39:07:39 - 00:39:08:10
Leslie Schlacter
Yeah.

00:39:08:10 - 00:39:15:03
Leslie Schlacter
I want to talk about another word. Because we talk about the the term on the spectrum. What does the term neurodiversity mean?

00:39:15:03 - 00:39:39:55
Dr. Buxbaum
it's a wonderful word. And I think it's what people talk about typically themselves or their or their peers or, you know, different, very diverse. And that's a wonderful thing, right? When we talk about a disorder, it doesn't mean that it's bad. You know, I could be neurodiverse. I'm prone towards, you know, OCD. Right. But if it interferes with my life and my functioning, I might get

help for that OCD.

00:39:39:59 - 00:39:46:39
Dr. Buxbaum
If it just helps me on my job because I am a project manager, I'm super organized. I may not.

00:39:46:39 - 00:39:52:55
Leslie Schlacter
See God or you're quirky and fun to hang out with. Maybe that's it. So neurodiverse isn't bad. It's just it's basically being just different.

00:39:53:10 - 00:40:09:33
Dr. Buxbaum
Yes. Now what's happened, unfortunately, is that because we use a single term to cover all of this, somebody who is neurodiverse here's me talking about gene therapy, and they say, why do I need that? And the answer is they don't.

00:40:09:38 - 00:40:10:40
Leslie Schlacter
Right? Right.

00:40:10:44 - 00:40:35:49
Dr. Buxbaum
They are living life and the life of the party. They, you know, they're quirky and fun to hang out with, right? They may have troubles that we all have. They maybe get some depressed episodes and want to get treatment. But when we're talking the value of separating autism into its kind of severity spectrum and the co-morbidities is that a lot of people confuse neurodiversity or the term.

00:40:35:49 - 00:40:36:44
Leslie Schlacter
Yeah, the.

00:40:36:45 - 00:40:41:01
Dr. Buxbaum
Concept with, hey, we really need to get in there and help this person because they're really suffering.

00:40:41:08 - 00:41:01:25
Leslie Schlacter
Right? Actually, that's a really interesting concept. My my son has A.D.D. and before he was medicated years ago was just, you know, very difficult to get stuff done on the medication. He's great. But also on the medication, he's not his, like, crazy fun self. So he has to pick and choose

the time he wants to take it. And what's happening that day because he wants to be he embraces that side of him.

00:41:01:30 - 00:41:02:33
Leslie Schlacter
Yeah, yeah same.

00:41:02:33 - 00:41:09:07
Dr. Buxbaum
Thing university right. But the moment you know it's is not an adult yet he's 19.

00:41:09:07 - 00:41:10:22
Leslie Schlacter
He's an adult.

00:41:10:26 - 00:41:19:34
Dr. Buxbaum
Right. So but at some point in his life, as an adult or even in conversations with his parents when he's younger, he could say, this is what I want to do, and this is what I don't want to.

00:41:19:34 - 00:41:20:25
Leslie Schlacter
Do, right?

00:41:20:29 - 00:41:21:58
Dr. Buxbaum
And that's perfectly fine.

00:41:22:03 - 00:41:28:58
Leslie Schlacter
Yeah. There were many times this summer I was like, please take your medication. He's like, no, not today. Today I'm going to do. Yeah.

00:41:28:58 - 00:41:36:17
Leslie Schlacter
We talked about vaccines. Is there any other it feel like maybe Tylenol? I've heard about? What should we know about Tylenol?

00:41:36:22 - 00:41:58:55
Dr. Buxbaum
So Tylenol again, has been people have looked into it very carefully. And Sweden was a major study in Sweden. And there's just a new paper coming out in Japan. These are very large studies, but many, many, many moms taking Tylenol during pregnancy. And all the evidence is

that there is no contribution of Tylenol to autism.

00:41:59:01 - 00:41:59:46
Leslie Schlacter
Okay.

00:41:59:51 - 00:42:27:51
Dr. Buxbaum
Now, one of the problems with all these kinds of studies is mom took Tylenol for a reason, right? And fever is often the reason. And fever by itself probably has a risk for developmental outcomes in their child. Right. So if you control for the indication for why mom took Tylenol, it definitely goes away. The association. But even the association itself is, is effectively nonexistent if you control for other variables.

00:42:27:56 - 00:42:48:19
Dr. Buxbaum
So one of the things that obvious in the world is showing that like there are medications like, you know, the mom takes on pregnancy that are associated with greater risk for autism. And the child, but it's not the medication. Mom had to take an anti-epileptic, a drug, during pregnancy, even though we always try and get moms off of it because their epilepsy is so severe.

00:42:48:23 - 00:43:04:00
Dr. Buxbaum
But she had to take it so very. Epilepsy shared a lot of the genetic risk as it does for autism, as you said before. Right? So if you say not, mom took this and I believed it and therefore it caused autism. But mom had epilepsy. Yes.

00:43:04:05 - 00:43:05:04
Leslie Schlacter
Right. Increased risk for.

00:43:05:04 - 00:43:06:44
Dr. Buxbaum
Autism. And to.

00:43:06:49 - 00:43:07:27
Leslie Schlacter
Right.

00:43:07:35 - 00:43:21:11
Dr. Reichenberg
Yeah. And again we get to the point of what is risk. Go back go back to the point of what is risk versus something that is determined. So risk only means that there is a higher chances that you

will have. It doesn't mean not.

00:43:21:11 - 00:43:22:02
Leslie Schlacter
A guarantee.

00:43:22:07 - 00:43:35:50
Dr. Reichenberg
Truly will happen. So any decision that is done by a pregnant woman about taking or not taking the medication should take into account a lot of factors and should be done in consultation with the treating physicians that they have.

00:43:35:55 - 00:43:41:18
Leslie Schlacter
What exciting things are happening at the Seaver Autism Center that you want to share with us here at Mount Sinai?

00:43:41:25 - 00:43:56:12
Dr. Buxbaum
So we are very privileged at the Zero Autism Center to be one of the leaders of an international endeavor to find these autism genes. And we've been very successful. We've found over 250 genes that clearly contribute significantly to autism risk

00:43:56:12 - 00:44:04:27
Dr. Buxbaum
and for about 10 or 20 of those, those genes, we and others are beginning to think about therapies that actually target the gene mutation.

00:44:04:32 - 00:44:26:00
Dr. Buxbaum
And that is really the most exciting thing. It's what we talked about before at some of these clinical trials that are coming out. And the Seaver Center, is a leader in these clinical trials and will probably continue to kind of grow as one of the lead sites for actually finding the genes, developing therapies from the genes, and then starting for human trials.

00:44:26:04 - 00:44:28:23
Leslie Schlacter
For those gene. That is exciting.

00:44:28:23 - 00:44:38:36
Dr. Reichenberg
we are doing what is probably the largest study so far, examining the range of medication mothers take during pregnancy. So you heard before about taking.

00:44:38:36 - 00:44:40:44
Leslie Schlacter
Medication, right?

00:44:40:49 - 00:45:13:30
Dr. Reichenberg
Epilepsy. And whether it is a risk factor or not, there was a lot of literature also about antidepressants and risk for autism, but the overwhelming majority of medications pregnant mothers get or take have never been studied in relation to autism. So, the senior center team is also mapping those relationships, trying to do it carefully with everything we know about, confounding and statistical control and replications to make sure that whatever we see, we are very confident that is real.

00:45:13:35 - 00:45:18:48
Dr. Reichenberg
And, we, we have to keep in mind that we might also find some things that are protective.

00:45:18:53 - 00:45:19:09
Leslie Schlacter
Right.

00:45:19:18 - 00:45:28:33
Dr. Reichenberg
So, we are hoping that we will see we might see some things that, increase the risk, but maybe we'll see some things that decrease the risk and can be then used in parallel to other treatments.

00:45:28:45 - 00:45:37:07
Leslie Schlacter
Okay. Well, as we close out, if you guys don't mind both sharing two things that you wish everybody knew about autism,

00:45:37:07 - 00:45:38:46
Dr. Reichenberg
Don't be afraid of vaccines.

00:45:38:51 - 00:45:40:20
Leslie Schlacter
Right.

00:45:40:25 - 00:45:44:59
Dr. Reichenberg

And, genetic risk is not your genetic determination.

00:45:45:04 - 00:45:50:52
Leslie Schlacter
Right? So it means just because you you have the genes doesn't mean you're going to get it.

00:45:50:56 - 00:45:51:49
Dr. Reichenberg
Necessarily.

00:45:51:49 - 00:45:54:12
Leslie Schlacter
Will happen. Okay. What about you.

00:45:54:12 - 00:46:00:05
Dr. Buxbaum
I think it's very important that people appreciate what we mean by spectrum and that there is

00:46:00:28 - 00:46:23:00
Dr. Buxbaum
profound autism which is not represented on TV typically. I think that's critically important. It helps us kind of conceptualize what we're doing and to understand it better. And I think it's also very important for people who are touched by profound autism to know that there are these breakthrough treatments that are happening right now that are going to change.

00:46:23:05 - 00:46:32:28
Dr. Buxbaum
Yeah, really, I believe change the world. When you when we see these things, we can intervene on somebody with, you know, profound issues and watch them get better quickly.

00:46:32:30 - 00:46:33:13
Leslie Schlacter
That's amazing.

00:46:33:20 - 00:46:35:01
Dr. Buxbaum
I think that's pretty amazing.

00:46:35:07 - 00:46:43:00
Leslie Schlacter
So thank you guys so much for joining today. I appreciate both of you being here and I definitely learned a lot. So I know our listeners will too.

00:46:43:00 - 00:46:54:53
Leslie Schlacter
That's it for this episode of The Vitals. I'm your host, Lesley. Laughter. Subscribe to the Vitals and Mount Sinai's other podcasts on YouTube and find us on Apple Podcasts, Spotify, or wherever you get your podcasts.

00:46:54:53 - 00:47:00:43
Leslie Schlacter
learn more about the Seaver Autism Center in Mount Sinai is groundbreaking autism research and treatment.

00:47:00:44 - 00:47:04:50
Leslie Schlacter
Scan the QR code on your screen and click the link in the description below.