Stephen Calabria: [00:00:00] From the Mount Sinai Health System in New York City, this is Road to Resilience, a podcast about facing adversity. I'm your host Stephen Calabria, Mount Sinai's Director of Podcasting.

On this episode we welcome Yasmin Hurd, PhD. Dr. Hurd is the Ward-Coleman Chair of Translational Neuroscience and the Director of the Addiction Institute at Mount Sinai.

Dr. Hurd's research examines the inner workings of the brain to investigate addiction disorders and related psychiatric illnesses, especially regarding the major risk factors associated with addiction disorders, like genetics and developmental exposures.

Her work helps us understand how experiences—especially in early life—can shape brain chemistry and behavior in lasting ways.

By uncovering the biological roots of addiction, Dr. Hurd is paving the way for more compassionate, effective approaches to healing—an essential step in building resilience.

We're honored to have Dr. Yasmin Hurd on the show.

[00:01:00] Dr. Yasmin Hurd, welcome to Road to Resilience.

Yasmin Hurd: Thanks for having me.

Stephen Calabria: Could you introduce yourself to our listeners?

Yasmin Hurd: I'm Yasmin Hurd. I'm the director of the Addiction Institute of Icahn School of Medicine at Mount Sinai, where I'm also professor of psychiatry and neuroscience.

Stephen Calabria: You've dedicated much of your career to understanding how substances like cannabis and opioids affect the brain. What first drew you to this line of research, particularly as it intersects with human development and behavior?

Yasmin Hurd: So for me I got interested in studying the neurobiology of substance use disorders, ironically, because I was studying neurodegenerative disorders to start as a student and in particular studying Parkinson's Disease.

And it's a disorder where the dopamine cells in our brain are. Are damaged and it leads to these motor problems. But in order to pharmacologically test our

animal models, [00:02:00] we test them with these drugs that will enhance dopamine signals.

And those drugs were actually psychostimulants like cocaine and amphetamine. And I became very fascinated with how the substances of abuse really changed behavior a lot. I started looking at the neurobiology.

I was like, what do really, what do these drugs do to the brain? But when you're studying them and you're studying like the individual, so I wanted to actually look at humans who have their substance use disorder, what's really happening in the brains of humans.

And then you realize that everybody has a story. They got to some place, they got to this disorder. For me it was, what was the story? What brought their risk? And so we studied things like genetics, but clearly, a lot of the, our living individuals who with substance use disorder talked about, early life issues and starting using drugs.[00:03:00]

And one of the substances in addition to obviously the quote unquote starter drugs of alcohol and cigarettes, many people started off with cannabis. And research had been going on about the developmental effects of alcohol and the developmental effects of can of cigarettes, but not much. Studies were being done at that time about the potential developmental effects of cannabis.

And that brought me down that path in, in, in looking at the developmental contributions to later life behavior and risk for other, for psychiatric disorders including substance use disorders.

Stephen Calabria: Before we get to cannabis, when it comes to substance use disorders, what role do genetics play? Is there a causal effect or a proven correlative effect?

Yasmin Hurd: So we know that genetics contributes, and in, depending on the substance, even for opioids, about 30% of the vulnerability relate, [00:04:00] relates to genetics. But there is no one causative quote unquote addiction gene. That is clear.

The, even for nicotine in terms of cigarette use and the disorders that, you have a lot of more morbidity associated with using cigarettes. And so even the genetics there relates to even aspects of lung cancer.

So there's some more broader aspects of genetics that come in. When you look, when you think about substance use disorders, but yes, genetics plays a role, but the environment also does as well.

And the one thing about substance use disorders and genetics is, I would say unlike Huntington's disease, if you have the genetic risk for Huntington's disease or if you have.

You're going to develop that disorder no matter what happens in your environment with substance use disorder and the genetic risk, you may have a genetic [00:05:00] risk and you can see it in your uncle mom or Jane, Aunt Jane, their alcohol use, and you know that your family may have a familial risk.

If you yourself never consume alcohol, you will not develop an alcohol use disorder, even if you have a high genetic risk. So that's a difference. I think about when we, when people think about substance use disorders and addiction, even if there is a, 30% chance, depending on the substance, for you to develop a substance use disorder, you have to consume that substance in order for your risk to really show itself.

The problem is that our society today, substances are so abundant and you. Your friend may be able to drink how many beers, but you're not able to because of your genetic risk. And even when we think about the opioid crisis, many people didn't realize that they had perhaps a genetic risk when opioids were being, overprescribed.[00:06:00]

And so they then took a substance that it would normally never get access to because they had a surgery, they got, dental, whatever. They get these large supplies of opioids. And yes, it alleviates pain. Then the amount that they got because of their genetic risk, they then started consuming more and developed an opioid use disorder.

So getting access to the substance is one of the issues in our society today. 'cause there's a plethora of substances and a highly potent substances.

Stephen Calabria: So while genetics may pay up. So while genetics may play a role, it is just one of several factors because someone with that genetic predisposition, if they were raised in say England or Morocco or New Zealand, that predisposition would manifest itself in different ways as opposed to say, growing up in a place where these substances are more abundant.

Yasmin Hurd: [00:07:00] Correct. Absolutely. And that is what I think is a challenge for many people in our society. The complexity of what substance use disorders really are. 'cause environment plays such a huge role.

Genetics plays a role, and the availability and access to high potency products also plays a role.

So all of these things together. Makes it difficult for individuals who have a substance use disorder because many people think that they brought it on themselves, but there are so many factors that increase their risk and vulnerability.

Stephen Calabria: You've done some of the most vigorous research on CBDs ability to reduce cravings in people with opioid use disorder. First of all, could you just tell us what is CBD.

Yasmin Hurd: Yeah, so CBD is cannabidiol. Now, you know the whole world, it practically, it's in your coffee, it's in your drink, it's everywhere. Everybody knows it by C, B, D, and it's a non intoxicating [00:08:00] cannabinoid. C, b, D, unlike THC, when, when people consume cannabis recreationally, they do it to get that high.

CBD doesn't get you high. But one of the things that we saw when we were looking at our animal studies, actually looking at how does THC impact on opioid vulnerability? So we would give animals, for example, THC during adolescence and study how they would self-administer heroin when they became adults.

And THC exposure normally increased their heroin seeking and heroin self-administration behavior. And I wanted to. Actually look at another cannabinoid because in our animal models we study THC, but in our human studies we were studying cannabis. And cannabis is a plant with, hundreds of chemicals.

Over 120 of them are cannabinoids. Even though THC is highly abundant, and C, b, D, we know it's the second most abundant cannabinoid. There are so many cannabinoids. So I wanted to see, [00:09:00] is it really THC? That was inducing effects. And so we gave animals C, B, D, and we were surprised to see. That in contrast to THC, it actually reduced heroin seeking behavior.

And so then I went in and started clinical trials just to see could this relate to helping to develop a treatment for humans? And we know that a lot of animal studies don't replicate in, in human studies. And so I wanted to see if we should go down this CBD path, if there showed a signal in humans.

And when we saw in our small first clinical trials that CBD actually did decrease craving and also we realized it also was decreasing anxiety. So now we are going back to try to understand the neuro biological mechanisms by which CBD may be working to induce these effects. And we're also, now, we just finished a phase two trial in a larger sample of opioid users.

We're now starting a phase three trial [00:10:00] with about 450 individuals, a multi-site study across the country. So we'll see whether or not CBD does decrease. Not just craving and anxiety, and especially Q induced, meaning the environmental triggers that induces those, but does it actually translate to decreasing their opioid use and giving them a safer life?

And that's the goal of this multi-site study. So we'll know in about three years

Stephen Calabria: while some of. What you glean from that may be speculative. What could be the reason behind why a substance like THC would lead people to seek out these sorts of substances as opposed to C, b, D? They're part of the same plant.

Is it the chasing of the high? Is it the gateway effect? What? Say you, doctor,

Yasmin Hurd: It's an important question and it is important for people to understand that. Even though they may be both cannabinoids, they have different mechanisms by [00:11:00] which they work in the brain and body. So for example, THC bind store endogenous cannabinoid receptors, right?

And the cannabinoid receptor, especially their two subtypes, that's type one, that's the most abundant receptor, one of the most abundant receptors found on the surface of cells in our brain. THC binds there and it stimulates that receptor. CB, D actually. Has a much weaker effect, and it may even works in the opposite in terms of it can even antagonize that receptor.

CBD also works on a multitude of different receptor systems. That's fascinating for us. When you think about some.

'cause we were when I was a student, taught that, you make medic, you make treatments by [00:12:00] finding the target of what that disorder may be, you try to find the pure agonist or antagonist as we, we call them, and CBD is a substance that actually has very mild seed, that it normalize these systems rather than having a very.

Heavy hammer on knocking down a receptor or heavy hammer and stimulating a receptor like many drugs do. So that's probably why also we don't see that much side effects with CBD.

Stephen Calabria: Now, in the middle of that answer you're it slowed down. Do you have any other windows open or anything else that might be slowing down your computer?

Yasmin Hurd: I guess I could close a lot of stuff. Sorry. Alright. Lemme see. Let me just close. See if I can this I think that might be the thing.

I didn't think about the different programs that were [00:13:00] open, but I'm disclosing a bunch just to see if that can help. Let's see.

Okay. Let's see. I closed a number of things. Let's see if that can work.

Stephen Calabria: Great.

Okay.

Just say the word something does not

Yasmin Hurd: wanna cause. Okay, go for it.

Stephen Calabria: There's a lot of hype around CBD. Some well-founded, some perhaps not well-founded. What do you wish the public better understood about the therapeutic limits and potentials of CBD?

Yasmin Hurd: I think that everything else, I would like the public to be, to ask questions and to really.[00:14:00]

Be wary that when anyone says that there is something that can cure all that, it's most likely not true. I do believe that cannabis and cannabinoids and other plant derived substances have the potential to heal aspirin, bark of a tree. We isolated the chemical there and so that is bottled as medicine and we know what dosage to use.

So people need to understand that even though there may be signals that CBD might have therapeutic potential, we started this pathway. So I believe that, but you have to understand that's a difference in creating medicine. So we have to understand what, at what doses, A, CBD. Alleviate X, Y, and Z and for which group of people there won't be a one size fits all medication.

At least not this time in our history, in terms of scientific and medical development. So you have to know what [00:15:00] works for people, for certain people, what's the dose range and what are the side effects? And one of the reasons why, for example, products that are being developed for medicine that are mainly THC.

They have a very narrow window with which they work because of the side effects. As you increase the dose of THC, the intoxication and all of those negative things then start to come in. Luckily, CBD does have a wider as we see a wider window of, with lower side effects. So it gives more potential to test different doses for different conditions and for different individuals.

Stephen Calabria: You hear stories, non-scientific anecdotal studies, stories relating to substances like Rick Simpson Oil that cured someone of their cancer, like they took it by mouth and then before they knew it, their cancer was in remission and essentially disappeared. Do these sorts of [00:16:00] substances. Hold any merit scientifically, whatsoever.

And to your point about how this is not a one size fits all. What works for one person may well prove to be ineffective in another.

Yasmin Hurd: Yeah. Ineffective and even dangerous in another. That's the thing. It's impossible for me to say, oh, those things are just snake oil. The majority of them.

And that's the problem with the. Internet and social media today, everybody has a platform. And if you have a disorder, you're rightly trying to search, search for answers, and you start to believe that there's this miracle cure. And could it help one person? Absolutely. Who knows what else that person had.

Also, that person might have had, it might have gone into remission no matter what they did, so it is important. I, like I said, I never tell people. Don't track down and try to find answers for your disorder, but it's, that's where it comes to speaking with your physician and actually not even just with one [00:17:00] physician.

I do think that people should especially for these disorders for which there are no, no cures, quote unquote look at different opportunities for even yourself participating in clinical trials. We do need to improve. The treatment toolbox for clinicians. We need to put more medications there because as I said earlier, not every medication work for the same for every patient.

And the more that clinicians have options, the better. So I rarely believe when someone tells me something is a cure on immediately cured, but it gives us hope that perhaps. And a researcher will now take that rig soil and start studying it in a much more strategic structured manner for us to then understand what aspect of it might have been beneficial and what aspect might be potentially dangerous [00:18:00] that we can perhaps even mitigate.

Bad doesn't mean you don't use it. Still obviously there are a lot of treatments today that have bad side effects. People suffering from cancers and so on. A lot of the things that they go through. But the survival rate has improved dramatically because of what science and medicine has learned and to reduce some of the side effects.

But they're still side effects. They're just now mitigated in certain ways because of the knowledge that has been gained over the years.

Stephen Calabria: And to the point about people being discerning about what it is that they're taking. You've described C, b, D as having a quote, wide safety margin, unquote. What precautions should people, especially those recovering from substance use disorders, take if they're considering using over the counter substances like CB, D?

Yasmin Hurd: First of all, wherever your. Buying your product, you have to be very careful. There's a lot of bad actors out there that are selling a lot of CBD and cannabis related cannabinoid related products where [00:19:00] there's no testing of what is really in that. Not even in terms of the concentrations of CBD, but even putting THC in which you don't want.

Also there's safety measures that a lot of places don't do in terms of testing for. Heavy metals microbes, pesticides. These are things when you think about it that people rarely think about when you're consuming plant derived products that pesticides, and interestingly, cannabis is a plant that's very interesting in that it actually not only serves up a lot of water, but it sucks up a lot of metals.

So it's actually great for clear and clearing an area of heavy metals, but that is something that you can consume because the plan is suck this out. So if the product that you're buying, that company has not done all the right steps to making sure that the product is, does not have those metals, the mold, the [00:20:00] this or that.

You can be consuming a bad product and worsen whatever your outcome. Another thing when people are buying CBD on their own is that CBD that's sold by in most of these boutiques. If you buy them in boutiques, I think people

should buy things which are gonna buy from dispensaries. But if you're gonna buy even from a boutique, CBD is pretty expensive, and the doses that are used clinically right now are very high.

Does it mean that lower doses of CBD might not be beneficial? Perhaps, but most research right now, we and others have started off at high levels, and we hope that once, we have a good signal, we can then start seeing what's the lowest dose that we can use. But even for epilepsy, it's very high concentrations that are used for CBD.

Stephen Calabria: The idea that CBD. Might one day be prescribed for opioid use disorder is a major shift. What would a future look like where a non-addictive medication [00:21:00] like CBD is a frontline tool in addiction treatment?

Yasmin Hurd: I really hope the CBD or something like that non-addictive does, and I have hope that it will, and not necessarily CBD, but I hope I do have hope that we will come up with more.

Medications that have low side effects and that are, especially for substance use disorders are non-addictive. So they could go to their pharmacy like everybody else. They don't have to line up at a quote unquote methadone clinic. Even though I, methadone has been incredible and saving a lot of lives, but it comes with a lot of burden for the patients and for clinicians treating them.

So like everybody else, you go to the pharmacy, you pick up your medication. There's not the stigma with it. You see your physician and your other your other therapist in the same way that other, that people with other disorders do so that they spend time with you on your disorder, not in the [00:22:00] monitoring of your taking.

Methadone or buprenorphine or something like that. So my goal is that we give people their lives back. And by that I mean you're not handcuffed to the medication in a manner that prevents you from really having a life where you can go to work. You don't have to, some people have to go two hours to get their methadone treatment daily.

That's crazy. So we do need to improve the management and process by which we develop certain medications and substance use disorders. I think because of the stigma of substance use disorders, there is sometimes this quote unquote penalty for not only those suffering from it, but even the clinicians who work very hard daily on a disorder.

That's challenging. They themselves are stigmatized and have to jump through so many, over so many hurdles just [00:23:00] to give their patients the treatment they deserve.

Stephen Calabria: Let's stick with that for a moment, the stigma surrounding substance use disorders. Could you talk a little bit about. The stigma serving as a barrier to treatment for those suffering from substance use disorders and serving as a barrier for people like yourself who want to offer the best solutions possible.

Yasmin Hurd: Yes, absolutely. I think that, I don't know of anyone who would say that I love. Having an addiction. I wake up every morning so great, grateful to have this disorder. It is a disorder and it's a disorder that really makes it challenging no matter how much people may love you, because it does change you in terms of what your focus is.

It changes how your relationship with others. It changes, the jobs often that people, depending [00:24:00] on the substance I should say, can hold and it rips apart families and communities. It is a huge burden on our healthcare system when the stigma that all of that burden we have on, on, on clinicians.

And even when you think about research, more research dollars are just I'll say the opposite. Relatively, a small amount of research dollars are given to substance use disorders compared to the impact that substance use disorders have on our society. And that, to me, that disconnect is why we continue to have problems.

'cause these are things

that are solvable. As I said to you, if you have a genetic risk and even an environmental risk, if you never take the substance, you will not de develop this disorder.[00:25:00]

So these are preventable. They're that. You have fentanyl now mixed in with cannabis. So

we have a society where subs that is dangerous for everyone. Yet still very limited resources to, as I said, in consideration of the challenge that this has on our society that are given to it.

Stephen Calabria: Now, from a resilience standpoint, there are a lot of folks suffering from substance use disorders who are told they have to pull themselves up by their bootstraps.

It wouldn't be so hard if you just stopped. Taking that substance. And I imagine that is a very difficult thing for a lot of people to hear, because as you pointed out, nobody wakes up in the morning and thinks, oh, thank goodness I [00:26:00] am addicted to a substance. What is your advice to those folks and what do you see as being incorrect about that assessment among policymakers, among the general public?

What do you think?

Yasmin Hurd: It's a very complicated thing because it's so easy to say that, oh, you can just stop anytime from drinking that alcohol, taking that opioid when they don't understand how the brain, it's if someone had OCD, right? And you think about that person might wash their hands a hundred times in an hour.

It's the same type of the craving the urges that bring someone in the need and want to have this drug. And yes, some people will do bad things to get it, [00:27:00] and that again is part of, the stigma. But just pick yourself up. You could do it. Are there people who have quit cold Turkey of many different things, whether it's from cigarette to opioids?

Absolutely. Unfortunately they're the minority and it would be really great to have, we understand certain aspects of what has helped certain people, quote unquote, stop and turn their lives around. But the majority of people who have turned their lives around, it's due to having clinical care whether it's through behavioral or pharmacological treatments.

So it does. Need support, and it needs support in a manner that often comes wrapped in a way of stigma so that not as many people who need help seek out the help and also families don't understand or not given the tools to be able to. Reach out themselves and even get [00:28:00] guidance and even therapy for themselves as well, because they don't talk, they don't want, there's an embarrassment, so they don't wanna talk to other people.

Oh, my child has this, my, this is that. It's very difficult. And I think the more that we're open and one thing that the opioid epidemic did start to provide more, I think visibility was indeed when. Many people, the overdoses and these overdoses from, families that you would say, oh, that's not us because they're in the high, income zip code, but they're like everybody else.

And those families decided to not say, to be very honest about how their child died, even when, in the obituaries. And I think when we stop hiding addiction, we will get more. Not traction, but we will make a much bigger impact for developing better treatments [00:29:00] and not all treatments as a.

Indicated not all treatments have to be pharmacological. There are treatments that are behavioral treatments that do work and giving the therapists who carry out these behavioral treatments, moving resources, and making places where people with a substance use disorder go for their treatment.

Don't make them look like they're, hellholes, excuse me. Make sure that they look like any other, nice clinical setting, and I think once we start treating individuals with substance use disorders, with that respect, the clinicians who give them care and their family members, they should have access to the same high level quality facilities, resources like all other disorders.

And that's not really the case right now. Like you said, to start often, it's oh, you can do this on your own. You don't need help. It's not the same thing. It is a brain disorder. No matter if people, [00:30:00] certain people wanna think that. It's just, it's voluntary. Yes, it was voluntary. When that, kid at a party in college, consumed something, that he went down a path that his friends who consumed the same things did not.

So there is a voluntary start, but it's not a voluntary into the disorder.

Stephen Calabria: You've also studied how early exposure to cannabis affects brain development, particularly if it's consumed in adolescence. So that kid at a party, how will that substance affect them as they continue using that substance later in life?

What are some of the most important and even concerning findings from your work?

Yasmin Hurd: I think, when I first started studying the developmental effects of cannabis, not just only adolescent, but also prenatal, I didn't expect the effects to last that long into adulthood. And even actually, we had our animal studies that showed it went even into the great grandkids who [00:31:00] never were exposed to cannabis directly themselves.

So just like other environmental salient things. Cannabis has the im, has impact on what we call these epigenetic mechanisms. So this, it's not changing your DNA, like your genetics, but it can change how your genes are turned on and off by this this drug that the environment and that lasts very long.

And one of the things that I saw, and now more than ever why it's a big concern for me the past few decades in particular. Past decade even is the increase of the THC potency. So as the potency of THC has increased today, we have the

general regular cannabis perhaps on the street, 15 to 24%, THC, the hippie generation, it was like two to 4% of THC.

Think about that difference. And the only reason that it's [00:32:00] increased is to get more people addicted and for no reason. Other than to get customers, it's has become a profit for this industry. So you can say, oh, people just wanna get high. They were doing that with the lower concentrated THC products today.

When they use those products, more people have a risk of developing a cannabis use disorder. They have a greater risk of developing psychosis and schizophrenia. They have a greater risk of other psychiatric disorders. We even see that, especially for young men, there's more data of cardiovascular problems.

Why the increased potency of THC? This was not the original plant on the planet. And so the creation of these new highly potent strains and these diverse products where they're the edibles, the d. [00:33:00] Concentrated. So you can even get THC, but 90% THC, they're blowing out the brain. Why? The products, the potency, all of this and the accessibility now of cannabis, in all parts of our society, you walk around certain parts of New York you feel like, you've gone through a big, cannabis haze as you walk the streets.

That to me is a huge problem. When you think about the developmental effects of cannabis that we see absolutely has a much greater effect on the developing brain than the adult brain. Still people are trying to understand why, but until that happens, we need to protect the developing brain.

Stephen Calabria: That framing flies in the face of the notion that cannabis is quote, natural and therefore harmless and not addicted, and not addictive.

How do you respond to those perceptions based on what the science has shown? [00:34:00]

Yasmin Hurd: Yeah. When I started, my fellow scientists also criticized me that, why am I studying this drug that is not addictive? It's not a problem. I should just be studying cocaine. Yes, that quote unquote, it's natural. Many people consumed cannabis as a rite of passage, during high school and college, and they became scientists and other professions.

It's a different cannabis and there is nothing natural about the current industry. As I said, the THC concentrations are nothing near what was originally there. So how is natural? Yes. Cannabis and THC and CBD works on our natural endogenous cannabinoid system, which we call the endocannabinoid system.

But these cannabinoid receptors, they are not there for these highly potent products. In fact, when you take. These high potency THC products, you're [00:35:00] overwhelming your own natural endocannabinoid system so it no longer can function in the manner that it was meant to be. And our endogenous cannabinoid system is really fascinating.

It is a modulatory system that keeps many biological processes in homeostasis. So when we now use a hammer to hit that system, we are taking off the brakes of many biological processes because the homeostatic mechanisms have now been perturbed, and that is the challenge that we all have.

Even if you may. Believe, and I don't think that people should get arrested for consuming cannabis. I think the previous cannabis laws were, more than draconian. But we have to understand that where we are with these products for the developing brain puts them [00:36:00] and our society in much greater parallel.

We definitely need to understand the impact of cannabis because we do see that it increases the psychiatric risk. And like I said, and now even cardiovascular, there are also things coming out about the lungs. So the, we never saw these results before. People didn't, you're not gonna overdose with cannabis like you will with opioids, but you're fighting more and more people coming to emergency departments, children even, 'cause they consume the edibles accidentally.

The impact that it has. So why are we seeing more medical things? We see more death associated with cannabis use? Not necessarily overdose, but these are the things. The only reason why we're seeing more medical health related negative things to cannabis than we've ever seen is because the cannabis products have changed.

They're not the quote unquote natural products.

Stephen Calabria: You mentioned [00:37:00] these. Psychological problems that arise, physiological problems that arise. Are these to be blamed exclusively on the substance itself, or were the users predisposed to these sorts of problems that this substance then unlocks?

Yasmin Hurd: I think it's a combination.

'cause we know from the one good thing about animal models is that we can replicate a number of things that we see. For example, as I said, with THC we saw certain negative effects. And with CBD we saw certain positive effects that

we could replicate in our humans. So does the drug itself induce some of these negative things?

Absolutely. 'cause these animals don't have a quote unquote predisposition, but they're. Without doubt, individuals who might have, for example cardiac related genetic risk that they may never know of or may have [00:38:00] psychosis risk, genetic risk, and then taking these highly potent products pushes them much faster to that risk zone, much faster to that disorder than they might have had.

A product that had lower concentration of THC, they might have eventually gotten there, but they wouldn't have gotten there as fast or they might never have gotten there.

Stephen Calabria: Cannabis legalization has outpaced the science. What are the risks of that kind of disconnect, especially when it comes to public health and safety?

Yasmin Hurd: We see the risks already. We see greater number of people developing a cannabis use disorder. Shockingly, today, more people consume cannabis daily or near daily than alcohol. So just to think about how our society in a very short time has switched to this frequent cannabis use. And it's not that, even if the numbers of cannabis users, you could say, stay the [00:39:00] same, it's different products.

So that the impact of these highly potent products on the brain has much, a far greater impact on health, far greater impact. We know that for every single thing, as you increase the concentration of addictive that the addictive chemical in whatever it is, you increase addiction risk, you increase psychiatric risk, and you also can increase health risk in many different ways.

And it is important for policymakers, public health advocates and so on to put everything together. As I said, public health, you have to think about. Yes. Do we wanna lock people up? No. Do you wanna provide people with as much information about the products they're consuming? Yes. Do you wanna make sure that people who are selling these products have to meet a certain standard?

Like absolutely. There are parents who [00:40:00] will, get their kids every safe this and this. And yet still any of them's oh, we use cannabis when we're kids. It's fine. Not realizing it's a different cannabis today. So yeah, they need to inform their teenagers. This, you have to be careful about everything that you put in your body, and especially today.

With cannabis because the laws are, from state to state. They're, even within local there are differences depending on even certain cities and so on. That is complicated. The federal guidelines are not, we, I should say, we need federal guidelines that really consider public health without penalizing people.

And that I think needs everybody at the table to, when you're developing these policies, everybody needs to be at that table.

Stephen Calabria: If you could advise, if you could advise [00:41:00] lawmakers on one or two priorities around cannabis policy today, what would they be? Especially in terms of protecting youth and vulnerable populations?

Yasmin Hurd: Easy for me, the potency. We have got to be, I don't think that we need products that are clearly detrimental to the brain. I it makes no sense. And also in that aspect as well, the safety, we obviously have alcohol and cigarettes that are sold in our society.

They're the same types of limits that have been done with those. Why not use those the. Use what we've learned from those policies. Why do we wait for health and lives to be lost before we start, thinking about this so we understand the type of education that's needed. Why not educate in a manner where young people can hear, we need public education.

[00:42:00] We, we, they've allowed lobbyists to have the word. Over children's health, and that to me is abominable. And it doesn't mean that people can't make money. I'm not trying to shut people down in terms of industry, but they need to be responsible. And why do we wait to say, okay, how many decades they're gonna start suing the cannabis industry?

Like they started suing the tobacco industry. Why? So I don't understand why we have to go down the same path, use the policies and the things that we have learned. All that information gleaned can be applied to cannabis policies, at least as a start. And that to me is, was not done. But this, it's not too late to do that.

Stephen Calabria: In your lab's work on substance use and recovery, you basically get to see what res, what resilience looks like on a [00:43:00] biological level. Can the brain truly rebound after long-term substance exposure?

Yasmin Hurd: I think on my journey as a neuroscientist has been. Eyeopening because when I started looking up the effects decided, you studied the brains of individuals who died of opiate overdose and you see these, molecular changes.

And then I looked at the developmental health of cannabis and you see these, neurobiologic changes. But one thing I mentioned earlier is that we saw that they were epigenetically modulated, and epigenetics is important. Biological process because unlike your, the genetics, the genes that you inherit from your parents, you can't change those.

But epigenetics are actually reversible. So it made me realize that a lot in the beginning. I thought, like many people, I hated the term, once in quote unquote, addict, always an addict. And that is not true. The brain has taught me that it is [00:44:00] possible to change. Some not, perhaps all of the molecular changes that, that were made by these drugs or that underlie the behavioral drugs that they have, it is possible.

Does it mean that it gets back to quote unquote normal as somebody's brain that never tried these drugs or never developed a substance use disorder? Perhaps not. For some biological processes. We do see that there is normalization, but for others it's like it counterbalances. Has a new normal. So I do believe that it's possible, absolutely possible.

And the neuroscience has taught me that.

Stephen Calabria: You've written that quote, the plasticity of the developing brain offers windows of opportunity, unquote. What are some of the most promising interventions, biological or behavioral, for preventing substance use in teens?

Yasmin Hurd: It's a tough thing [00:45:00] because. I can all obviously do this easily with our animal models.

So on a molecular level, I could go into a certain part of the brain. I could even change an epigenetic mechanism in their brain and the plastic time period and quote unquote, their behaviors become normal. But that's not feasible in, in teenagers, in, in human, but. There are aspects of behavior we know until we can figure out medications and perhaps CBD might be one of them that have low, lower side effects.

Because the adolescent brain, the plasticity is great. And so as we leverage it, one of the things is about behavior and a number of, like contingency management type of motivated behe types of behavioral strategies can work. And it also comes back to environment. There's a lot of negatives that are reinforced [00:46:00] in teens.

You can start, for example, teaching, learning new things, learning new music, putting a focus on something that someone might find to be positive. These are things that ha that the brain is still adapting. And I find the beauty of the developing brain, and as you strengthen aspects of positivity, they're still plastic.

These are things that to me, are also important to help develop in a non-pharmacological way. At least right now, until we get true FDA approved medications for this developmental window. I do believe, based on where I see some research going, that there will be some pharmacological intervention that leverages the plasticity of the developing brain.

And you might only need, a very short, brief intervention [00:47:00] and that lasts a, a lifetime. And it's this window that people have to understand it's this window. We just need to get, kids passed this point as the adult brain, as the brain matures, I should say, and everybody's brain matures at a different time.

It's not 21. That's the number that's has, was there set for a different reason. But even in the mid twenties that past a certain period, people have more protection. So it's just, let's get people through this window. And I think that to me is possible.

Stephen Calabria: Your research touches on the interaction of neurobiology and social context as we've touched upon.

How can schools, families, and communities support brain health and resilience in young people facing high risk environments?

Yasmin Hurd: Yeah, I. I am [00:48:00] not gonna lie, I think our society pains me because we don't give every chance that child, I should say the opportunity for just normalcy and the, a lot of high risk communities and environments.

It's about, I know it's gonna sound, again, simple, but giving resources of. Safe environments, no lead. Let's just even start with that. Safe environments of the education that they receive. That the education is stimulating, that teachers get support. We give, I think in our society, the children are supposedly, the most important thing that our society has 'cause that's the future yet still.

The individuals who take the greatest care for them do not get the same support or resources. So if schools have more teachers and assistants, but I also will say we expect teachers to do everything. We need to have a system where psychologists and therapists are [00:49:00] part of the education system. It shouldn't be teachers.

We have a program at Mount Sinai for example, a program run by Dr. Hil Pat. We called it uprising. That kind of mimicked what we had a boutique. We have a boutique program that helps teens, especially with co-occurring substance use and psychiatric disorders and brought it into the school system.

The kids, some of the first time that they've ever had anyone actually focused on them as for therapy. And the teachers love it. It is about. Bringing the community to the kids. We can't expect the kids to come and their parents to come to the hospitals, to, for, specialists to provide that support.

We don't want the kids to get to that level where they have to end up in the hospital. So let's meet them where they are. Bring the different, I would say, professionals that are needed [00:50:00] for one of the most important groups that we have in our society. Give them all the tools, give them music, give them sports.

It is in our society that kids do not have the

access to resources that get into adulthood. In a manner that gives them tools to be able to say no to certain things. Give them tools to be successful. So you have to give more resources to help teens be healthier.

Stephen Calabria: Your work often also challenges widely held assumptions, especially about cannabis.

How has your thinking evolved over time as both the science and public discourse have [00:51:00] changed?

Yasmin Hurd: I changed a lot and I've changed a lot in how I've thought about cannabis.

I've changed a lot about how I've thought about cannabis and I've changed a lot because of the data that I saw. Initially we definitely saw that THC had negative impact, but still do, but it comes, discussed the societal implications. It's not to lock people up are researching that it, this.

Possible for the brain to change it's pa for to change in positive ways back to looking quote [00:52:00] unquote normal. I do think that cannabis has shown.

Thanks again to Dr. Yasmin Hurd for her time and expertise. That's all for this episode of Road to Resilience. If you enjoyed it, please rate, review, and subscribe to our podcast on your favorite podcast platform.

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Road to Resilience is a production of the Mount Sinai Health System. It's produced by me, Stephen Calabria, and our executive producer Lucia Lee. From all of us here at Mount Sinai, thanks for listening and we'll catch you next time.