YJBM Attention Science Podcast Episode II

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NOTE Confidence: 0.828339576721191

00:00:00.880 --> 00:00:03.110 Yale podcast network.

NOTE Confidence: 0.890680491924286

00:00:05.260 --> 00:00:35.290 Hello and welcome to another episode of the Yale Journal of biology and medicine podcast. YJBM is a pub Med indexed quarterly Journal edited by Yale medical graduate and professional students and peer reviewed by experts in the fields of biology and medicine. Each issue of the Journal is devoted to a focus topic and can be found YJBM's website or public for further reading. This episode is the 2nd of two devoted to YJBM's March 2019 issue on attention science. I'm your cohost Amelia Hallworth, a second-year graduate student in microbiology.

NOTE Confidence: 0.922974586486816

00:00:35.290 --> 00:01:05.570 Hi I'm Huaqi Li, a first year student in MPH for the chronic disease at the program so far in the series. We have given you an overview of how attention affects us throughout our lives today. We will be interviewing and welcoming doctor, Thomas Brown to talk about his work researching and treating attention deficit disorder. This is a disorder that is best known for its effects in school children but which continues to affect people long after they leave school welcome doctor Brown.

NOTE Confidence: 0.88995897769928

00:01:06.140 --> 00:01:37.940 Well thanks very much. I'm very happy to be with you awesome, so could we start off with a little bit of an introduction who you are? What do you do? What is your area of expertise? I'm a clinical psychologist trained at Yale got my PhD there and then was teaching at Yale initially in the teaching psychology at the divinity school and then affiliated for Dem State for about 20.

NOTE Confidence: 0.943626344203949

00:01:37.940 --> 00:01:42.950 5 years with the clinical faculty of the Department of psychiatry at the medical school.

NOTE Confidence: 0.916965365409851

00:01:43.530 --> 00:02:05.920 And at the same time I was running in New Haven or reaction. Hamden private clinic for attention, and related disorders in children and adolescents and adults and then just 2 years ago after my wife died. I moved out to California. Because I had 2 grown kids and 2 grandkids out here.

NOTE Confidence: 0.936310470104218

00:02:06.440 --> 00:02:16.100 And I have now opened my own clinic here in Manhattan Beach CA. And I'm teaching in a clinical faculty. The Keck Medical School at the University of Southern California.

NOTE Confidence: 0.919379532337189

00:02:16.840 --> 00:02:47.270 And my special interest is at attention deficit disorders and particularly in high IQ children and teens and adults who have ADHD because I found that very often people who are particularly smart and have ADHD don't get recognized as having that problem as early as would most other people and so as a result. They are often seen as though you're so smart that you can just take care of this stuff if you're having

NOTE Confidence: 0.929272592067719

00:02:47.270 --> 00:02:58.010 ADHD problems you're just being lazy and the fact is that regardless of how smart you are. You can still have significant problems with ADHD and it's not a problem with Willpower.

NOTE Confidence: 0.90498673915863

00:02:59.980 --> 00:03:27.460 That's very cool, so how did you get into this research in the 1st place? What about it that you find so fascinating well? what I found? Was I got started this a long time ago and I was introduced actually by a couple of adolescence that I saw both in the same week they were really bright kids who had been going to public school in. We're not doing well at all compared to what their impressive academic strengths were.

NOTE Confidence: 0.920425832271576

00:03:28.020 --> 00:03:32.090 And so now they were in private school and they were still not doing well.

NOTE Confidence: 0.935825288295746

00:03:32.670 --> 00:03:55.380 And there's just something about I saw them on different days. They didn't know each other. But there was something about the way each one of them was able to explain to me how each day they would pass a resolution with themselves that they were really this time they're going to get on Top of their work and they'd be going home with their backpacks. And all of their books ready to do homework and just could not mobilize themselves to do it.

NOTE Confidence: 0.933349430561066

00:03:55.920 --> 00:04:24.130 And they spoke about the big difference between for them, reading things that they were interested in an reading things that were assigned that were not very interesting to them and there was something about the way each of them explained their experience with this that made me think Gee. You know this sounds a little bit like, ADHD and that was at a time when not many people were talking about ADHD without hyperactivity.

NOTE Confidence: 0.913152098655701

00:04:24.680 --> 00:04:55.650 But it occurs to me well. Maybe we should try the medicine with them that we would you normally use for the hyperactive kids and see how it works and it happens, we got lucky and they both responded very well to the medication treatment teachers notice. The difference quite quickly. Parents notice that the kids themselves notice it and then I begin a series of conversations with them. Where I tried to learn more about what their experience was because they were telling me a lot about this disorder.

NOTE Confidence: 0.915269017219543

00:04:55.650 --> 00:05:08.700 And their experience with it that wasn't in the book and it was not in the diagnostic criteria. Lee some of the symptoms were not in the diagnostic criteria for ADHD and that was at a time when not people, not many people were thinking about ADHD without hyperactivity.

NOTE Confidence: 0.927273035049438

00:05:09.240 --> 00:05:39.930 So one thing led to another. I eventually developed some rating scales to assess for this and gave a few talks and then one thing led to another and now here I am more than 30 years past that point have published about 30 articles and journals and published 6 books on this and have been fortunate enough to be able to go round and give lectures in more than 43 countries to talk with people who are interested in learning about ADHD so.

NOTE Confidence: 0.917931020259857

00:05:40.450 --> 00:05:58.040 A little did I know what I was getting into after those first 2 evaluations. That's really cool. So can you talk a little bit more about the symptoms that these 2 patients were showing that weren't typically as part of the diagnostic criteria and how your work has expanded the model of ADHD in a DD that we have.

NOTE Confidence: 0.908750057220459

00:05:58.540 --> 00:06:19.720 Sure, I think that one of the main things that happened in my understanding of this as I got to know these patients and a lot of others is that the model that was operative. When I first started in the field was pretty much that this is a behavior problem with little boys.

NOTE Confidence: 0.87719601392746

00:06:20.270 --> 00:06:26.610 And sort of the icon for it was Dennis the menace cartoon character at the time.

NOTE Confidence: 0.893469274044037

00:06:27.220 --> 00:06:43.850 Uh and the emphasis was on hyperactive behavior. The assumption was if you had it when you when you were little and show up on your about 3 four five years old and then when you got to be about 14. You'd outgrow it and it would just go away.

NOTE Confidence: 0.907776474952698

00:06:44.490 --> 00:06:50.900 And what we've learned since is that this is something which affects not just boys, but also girls.

NOTE Confidence: 0.934091627597809

00:06:51.410 --> 00:07:05.600 Uh there often it does not show up in early childhood. Sometimes it does, but more often. You begin to see it when a kid gets into school and has to be working on an agenda that applies to a bunch of other people at the same time.

NOTE Confidence: 0.924956977367401

00:07:06.160 --> 00:07:26.270 And that it's also something which is often not try it into hyperactivity or impulsive behavior, but rather to a wide range of cognitive functions that we generally refer to is executive functions. The man is basically the management system, the brain.

NOTE Confidence: 0.902513265609741

00:07:27.250 --> 00:07:39.790 And that's something that we have gradually begun to expand on their two of us have been working separately on this quite a bit Russell Barkley.

NOTE Confidence: 0.921666026115417

00:07:40.470 --> 00:08:10.920 And myself and I think that we would both be willing to say at this point and a number of other researchers. I think would agree to us that you can write an equation that says, ADHD Equal is the developmental impairments of executive functions, which is simply to say that these cognitive functions, which are so important in terms of managing daily life for all of us lunch of course, keep changing as we get older, they exist only in primordial.

NOTE Confidence: 0.896906077861786

00:08:10.920 --> 00:08:35.720 Warm and preschoolers but they keep developing over the course of middle elementary school age and are refined, particularly from time of early puberty on where there's a massive proliferation of cortical cells throughout the Cortex which is followed by a period of pruning.

NOTE Confidence: 0.935432434082031

00:08:36.220 --> 00:08:49.120 Of to get more efficient circuits in the same way you prune a fruit tree in order to be able to get better fruit and that process is not completed in most people until 1819. Twenty years old, sometimes a bit beyond.

NOTE Confidence: 0.907025575637817

00:08:49.770 --> 00:09:19.980 And studies that were done at the National Institute of mental health show that for those with ADHD. The trajectory of their

development of at cortical proliferation followed by cortical pruning is pretty much the same as it is for people who don't have ADHD except for a few areas about 5 small regions. Most of and the prefrontal cortex, which on average user group date. Of course on average don't.

NOTE Confidence: 0.916958332061768

00:09:19.980 --> 00:09:30.100 Catch up in those who have ADHD until about 3 years behind the age at which you see this in most others of comparable age.

NOTE Confidence: 0.909943580627441

00:09:30.600 --> 00:09:47.200 And so it's a developmental impairment and we've got very good evidence now from about 25 different studies of families of particularly twin studies, which indicate that it's inherited problem that it's something that runs in families.

NOTE Confidence: 0.899043083190918

00:09:47.700 --> 00:10:17.790 Usually we use a heritability index that scores from 0 to one to talk about how much something like this is influenced by jeans where 0 means not much at all, and one means that's pretty much the story and for comparison, breast cancers about .3 on its scale as much about .5 height is .9 and a DD is .76. Based on about 25, Twin Studies at this point, so it's a highly heritable problem.

NOTE Confidence: 0.923091948032379

00:10:17.790 --> 00:10:49.680 And it's a problem, which is complex. It's not a simple matter of behavior problems. A lot of people who have it have never had significant behavior problems and even for those who have often that does go away, which is reported with the earlier theory was based on but it tends to get worse and get a little more problematic for people typically as they meet the challenges of going through school and particularly in adolescence an in early adulthood. When one has to function more independently.

NOTE Confidence: 0.934266626834869

00:10:49.680 --> 00:10:56.270 And not depend so much on other people around you to walk you step by step through what you need to do in each task from day to day.

NOTE Confidence: 0.92542576789856

00:10:56.990 --> 00:11:05.620 It seems like there's been a lot of very informed of research going on so could you tell us a little bit more about currently? What are some lipid questions in the field?

NOTE Confidence: 0.914254128932953

00:11:06.610 --> 00:11:33.970 Yeah, I think probably one of the biggest ones is the role of emotions. The current diagnostic criteria for ADHD in the in the DSM 5. The Diagnostic Manual. the American Psychiatric Association includes

no mention of emotion in ADHD expression modulation and management of emotions is not even referred to.

NOTE Confidence: 0.884609043598175

00:11:34.740 --> 00:11:49.570 And those of us who do research on this and most anybody who knows anybody who has a DD or who has a D HD knows it. The fact is that for folks with ADHD managing emotions is a big part of it.

NOTE Confidence: 0.950994789600372

00:11:50.270 --> 00:11:59.920 Uh it makes a lot of difference in terms of how they respond to situations day by day and how much they are able to follow through on things that need to be done.

NOTE Confidence: 0.923839747905731

00:12:00.660 --> 00:12:12.000 And so the fact is we many of us believe that those those functions ought to be included in the diagnostic criteria for ADHD.

NOTE Confidence: 0.912594020366669

00:12:12.540 --> 00:12:21.500 Incidentally, I tend to use the terms a DD ADHD interchangeably officially it used to be that we use a DD to her, talking about.

NOTE Confidence: 0.875495553016663

00:12:22.010 --> 00:12:44.850 The kind without much hyperactivity or impulsivity and ADHD for the kind width and then few years back with DSM 5. They decided they're going to call it all ADHD and so you know have this weird thing ADHD comma, predominantly inattentive type. Did you do without the hyperactivity, but many of us in just comment conversational use that?

NOTE Confidence: 0.773258745670319

00:12:45.360 --> 00:12:51.630 ADHD ADHD ADDN ADHD interchangeably.

NOTE Confidence: 0.924587845802307

00:12:53.810 --> 00:13:19.950 So I've been starting to see more about this emotional responses to sort of in the general public and how people are talking about a DD and ADHD just as I'm interacting with the Internet. Do we have any sense yet of whether those emotional dysregulation of whether it's linked to the attention in the brain or is it something else that may be causing both of them or they completely unrelated.

NOTE Confidence: 0.877376198768616

00:13:20.740 --> 00:13:22.440 Well, they're very much related.

NOTE Confidence: 0.865543782711029

00:13:23.030 --> 00:13:25.340 And I think that.

NOTE Confidence: 0.931870520114899

00:13:26.070 --> 00:13:29.880 It's very clear when you take a look at the research.

NOTE Confidence: 0.929164946079254

00:13:30.410 --> 00:13:38.900 Uh that emotion plays a powerful role in terms of working of memory and motivation.

NOTE Confidence: 0.909514427185059

00:13:39.960 --> 00:13:54.810 Becaus for years in psychology, and psychiatry people attended to operate as though emotion, and cognition were 2 completely separate silos.

NOTE Confidence: 0.936025500297546

00:13:55.400 --> 00:14:03.270 And that you could study one and then study the other, but that they were 2 very different things and what we now know is that emotion.

NOTE Confidence: 0.903851330280304

00:14:03.860 --> 00:14:13.200 Is in fact the energy level that shapes all information processing in the brain?

NOTE Confidence: 0.881245195865631

00:14:14.120 --> 00:14:19.220 And that that that process.

NOTE Confidence: 0.898979246616364

00:14:19.800 --> 00:14:36.760 Of deciding sort of what I'm talking now and not simply about emotion in the sense of being annoyed at somebody, which is the way it's often taken but rather I'm talking about emotion, both in the sense of positive interest.

NOTE Confidence: 0.887019276618958

00:14:37.520 --> 00:15:00.500 And the kind of thing where one has a repugnance to do something or wants to get more distance from it. And so forth. There's a guy named neuroscientists who some years back address this issue and he said. You know all information processing is emotional.

NOTE Confidence: 0.909853398799896

00:15:01.170 --> 00:15:09.430 The emotions the energy level that drives and organizes and amplifies and attenuates cognitive activity.

NOTE Confidence: 0.88909387588501

00:15:10.400 --> 00:15:30.960 And I think that's something that that operates in amazing ways. And there's been research since Joe. Those book on the emotional brain and subsequent research. That's been published about the neuroscience involved it's very clear.

NOTE Confidence: 0.92193466424942

00:15:31.540 --> 00:15:45.110 That our memories are very much informed by the affect of significance. The emotional significance of whatever it is that we're trying to remember.

NOTE Confidence: 0.88177615404129

00:15:45.800 --> 00:15:53.170 You know that there's some things that carry a strong charge of interest and energy.

NOTE Confidence: 0.876017034053802

00:15:53.680 --> 00:15:58.210 And others fearfulness and wanting to avoid.

NOTE Confidence: 0.906663715839386

00:15:58.750 --> 00:16:29.180 And others of disgust of just not wanting to be involved, and often very conflicting emotions. These things don't come in purity. Usually, it's often a mixture of multiple levels of emotion, and I think one of the important things to recognize about it is that these things operate unconsciously, not in the cycle analytic sense of unconscious as in repressed but rather.

NOTE Confidence: 0.85807192325592

00:16:29.180 --> 00:16:32.590 In the more modern sense of automaticity.

NOTE Confidence: 0.93040543794632

00:16:33.180 --> 00:16:38.680 That these are processes that go on so quickly so automatically.

NOTE Confidence: 0.892778933048248

00:16:39.190 --> 00:16:46.480 Uh is it we're not consciously aware of it and often were not even aware of what's happening till after we see the output.

NOTE Confidence: 0.908451914787292

00:16:47.410 --> 00:17:03.980 And that that has to do with how we prioritize things. What things we decided we're going to get into and what things were going to be backing off oven? What things were afraid to get started with and the degree to which we wanted to.

NOTE Confidence: 0.915219604969025

00:17:04.490 --> 00:17:08.580 Care about an engage ourselves in in a variety of activities.

NOTE Confidence: 0.90478777885437

00:17:09.260 --> 00:17:10.220 So I think that.

NOTE Confidence: 0.937228798866272

00:17:10.790 --> 00:17:18.690 You're looking at the role of emotions, particularly unconscious emotions, which obviously very difficult to.

NOTE Confidence: 0.873505055904388

00:17:19.210 --> 00:17:43.080 The track because that stuff is not only the main things is so fast. It's like if you're a basketball for perfect say, take a typical professional basketball player who's driving in to make a layup shot that basketball player is not think of Canal evil by left foot. Now we move my right foot. Now I drop my left shoulder, not going to spin and I've got to get around. This guy that's defending the basket all that's done seamlessly.

NOTE Confidence: 0.907267093658447

00:17:44.210 --> 00:18:14.070 And another example would be for example, we talk often about ADHD my first book on this was published by Yale University Press. Back in 2005. The subtitle of that book was the title is attention deficit disorders with the subtitle was the unfocused mind and children and adults. and I think that what we're increasingly recognized as the degree to which these are unconscious processes.

NOTE Confidence: 0.888062357902527

00:18:14.650 --> 00:18:19.650 In one example would be if you think about your driving.

NOTE Confidence: 0.929612755775452

00:18:20.930 --> 00:18:37.060 The kind of focus that's involved in that it's not like you glue your eyes to the bumper of the car in front of you, you're watching what they're doing, but you're also looking down the street noticing that the stop light is changing from green to red and you gotta get your foot off the accelerator and moved over toward the break.

NOTE Confidence: 0.915312230587006

00:18:37.710 --> 00:19:07.850 You're also checking your side. View mirrors in your rearview mirror so you can see somebody who's coming up, too fast on you and you're noticing that there's some guy opening his car door way out into your Lane and you're going to have to pull over a little bit to avoid taking his door off as you go by. You notice that there's a truck backing out of a driveway and you gotta slow down and see if they're going to be how fast they're coming out. Meanwhile, there a couple of pedestrians running across the street to catch a bus and you're going to have to shift over to the left.

NOTE Confidence: 0.90863710641861

00:19:07.850 --> 00:19:38.780 Playing 'cause you gotta make a left turn down at the next corner. And while you're doing all that you're having to ignore some things that you see say you know the cops have picked up somebody over on the side of the street. You kind of curious but who they've gotten with an there's an interesting display on the front of the store as you going by but you have to ignore some things and then you have to keep in mind what you just saw in

the mirror and what you just saw ahead and integrate this information as you going through the process of driving the car.

NOTE Confidence: 0.931545078754425

00:19:39.440 --> 00:19:54.320 And that's the kind of focus that we're talking about when we talk about ADHD. It's not the lock on to some particular spot as you might think about doing when you're focusing a still Camera to take a picture.

NOTE Confidence: 0.933981478214264

00:19:54.820 --> 00:20:17.060 It is more like focus on your driving where you have to be simultaneously. Ignoring some things keeping in mind. Some others shifting your focus as you're moving along the street and at the same time, staying in contact with what your goal is you know, maybe you're on your way to the grocery store. And while you're doing that you're also perhaps thinking about what you need to pick up when you get to the grocery store.

NOTE Confidence: 0.923139870166779

00:20:17.930 --> 00:20:35.090 It's that kind of complexity of focus that we do in everything from getting ourselves. Dressed in the morning. Sorting are male preparing a meal carrying on a conversation and if you're having trouble with these functions.

NOTE Confidence: 0.934971570968628

00:20:35.890 --> 00:20:49.910 If you don't have the ability to manage that kind of of complex focus. It makes a lot of trouble for you, whether you're a 1st grader who sitting in a desk at school trying to learn what's going on or whether you're trying to read?

NOTE Confidence: 0.920471429824829

00:20:50.690 --> 00:20:58.400 And keep in mind what you've just read the last paragraph as you get into the next paragraph or you're trying to carry on a conversation with people.

NOTE Confidence: 0.921744406223297

00:20:58.930 --> 00:21:00.200 We're playing a sport.

NOTE Confidence: 0.871387422084808

00:21:01.130 --> 00:21:03.090 Or writing a paper.

NOTE Confidence: 0.908028721809387

00:21:04.080 --> 00:21:11.670 You know, so it's these functions are that are involved in ADHD are complex.

NOTE Confidence: 0.912619113922119

00:21:12.240 --> 00:21:20.810 And the model that I've developed in my work basically from talking with a lot of patience of this our ages.

NOTE Confidence: 0.922099947929382

00:21:21.400 --> 00:21:26.930 You know it's not just working out of the neuro-science research. I'm a clinician. I see patients 5, 1/2 days a week.

NOTE Confidence: 0.90284925699234

00:21:27.670 --> 00:21:57.350 When I'm in town and is by talking with these people and listening carefully to what they're telling Maine that I've been able to develop a model that seems to work in terms of explaining a lot of of what the executive functions look like in day-to-day operations. This is not the only model their other models have been put out by Doctor Barkley and by a number of neuropsychologists, but the model that I've come up with.

NOTE Confidence: 0.811340987682343

00:21:57.960 --> 00:21:59.670 Hasn't at 6 clusters?

NOTE Confidence: 0.91974812746048

00:22:00.200 --> 00:22:09.430 In the 1st is activation being able to get organized and get started in prioritizing tasks. So you can see what you're going to spend your time and effort on.

NOTE Confidence: 0.909352362155914

00:22:10.040 --> 00:22:19.730 The second is focus, which means focusing and sustaining your focus when you need to, and then shifting your attention to other tasks.

NOTE Confidence: 0.913936495780945

00:22:20.540 --> 00:22:51.660 And then the 3rd cluster is effort being able to regulate alertness, many times people with ADHD have a lot of difficulties in getting to sleep and what they'll tell you is I often stay up a lot later and I really want to or should be cause I found if I try to go to bed to get to sleep before I'm really, really, really tired. I can't shut my head off. I just keep thinking of stuff. So I'll stay up late reading or watching TV or surfing in it until I'm exhausted that I fall asleep fine. But once I fall asleep. Then they'll say I tend to sleep like a dead person I have a hard time resurrecting myself.

NOTE Confidence: 0.883220434188843

00:22:51.660 --> 00:23:00.260 In the morning when the alarm Clock goes off, and if there's not somebody else around to. Urge me to get out of bed. I'm very likely to sleep through whatever it is I was planning to do.

NOTE Confidence: 0.922943353652954

00:23:00.770 --> 00:23:03.450 And then related to that also is processing speed.

NOTE Confidence: 0.908663034439087

00:23:04.190 --> 00:23:17.270 Which refers to the limited example there are some people who have ADHD? Who have really quite slow processing speed in spite of the fact that they are very, very price.

NOTE Confidence: 0.916710734367371

00:23:17.970 --> 00:23:30.520 And it's sort of like having a slow modem. What do you mean by processing speed well let me give you an example of it the processing speed is involved when you're trying to write a paper.

NOTE Confidence: 0.903935074806213

00:23:31.590 --> 00:23:37.490 And you're trying to take ideas that you have in your head.

NOTE Confidence: 0.921825885772705

00:23:37.990 --> 00:23:40.210 And put them into sentences and paragraphs.

NOTE Confidence: 0.930355489253998

00:23:40.870 --> 00:23:53.120 There's some people with ADHD, who will tell you that they have really good ideas and he give examples of them really good ideas about what they want to write but it takes them half of forever to get the sentence is formulated.

NOTE Confidence: 0.912375628948212

00:23:53.630 --> 00:24:02.160 And get the paragraphs put together and and then be able to move through that to be able to develop the paper.

NOTE Confidence: 0.940246641635895

00:24:02.780 --> 00:24:12.820 Now, one of the things you can see from this example is processing speed, then is also going to be linked to that first category of activation and prioritizing.

NOTE Confidence: 0.945086300373077

00:24:13.790 --> 00:24:18.660 Because you gotta organize how this sentence fits with the previous one.

NOTE Confidence: 0.871388494968414

00:24:19.230 --> 00:24:50.280 And with what you're projecting says to say next so processing speed. IQ tests like the Wechsler. Adult intelligence scale or the intelligence scale for kids. Both have an index score for processing speed and that's measured very simply in how quickly you can do as a string of codes that you have is a sample and there. There are also some other related measures that can be done.

NOTE Confidence: 0.925530016422272

00:24:50.280 --> 00:24:57.950 And that's physically cranking out the the items and you can find in 2 minutes that many people with ADHD are going to be quite a bit slower.

NOTE Confidence: 0.887856245040894

00:24:58.980 --> 00:25:29.270 Being able to do even a very simple processing tasks like that. One is scan and is show. You small very simple shapes and their two of them in the first column and then there are 5 of them and the next to it remaining column and so as you go along with each of these rows. You're asked to mark is one of these 5 exactly the same as one of the first two in the initial column.

NOTE Confidence: 0.891866743564606

00:25:29.270 --> 00:25:43.260 In 2 minutes to get certain it's time limited and we find that with that task and with the coding where you're substituting symbols for numbers and where there directly at the Top of the page.

NOTE Confidence: 0.908115327358246

00:25:43.770 --> 00:26:11.970 Those 2 simple measures, which each of which can be completed in 2 minutes off and will give you a signal with somebody who has slow processing speed that might also be manifest in how long it takes him to write an email? How long it takes them to write a book report or social studies reported when there in 6th grade and how long it takes him to turn out essays and term papers.

NOTE Confidence: 0.904274463653564

00:26:12.520 --> 00:26:26.990 So I would have assumed that people with idiot it. DD and ADHD, particularly people who are exhibiting hyperactivity are processing. The world faster and that's why their hyperactive are there any other common misconceptions about the disease that you hear?

NOTE Confidence: 0.872721493244171

00:26:27.620 --> 00:26:47.490 I think the biggest misconception actually if I could just take a second. I'd like to just mention the other three of course, go for the model that I mentioned activation and focus and effort 4th clustering that model is managing frustration and modulating emotions.

NOTE Confidence: 0.878082990646362

00:26:48.040 --> 00:27:19.840 In which is a topic I'll talk a little more about shortly the next. One is memory. But it has to do it. Utilizing working memory and accessing recall what I mean by that is if you ask people have a DD has your memory often to say. I've got the best member of my family. I can remember stuff. Nobody else to remember and they give you some example about some movie. They saw Seven years ago and they've seen it only once, but can tell you every detail of the entire storyline in the movie if they saw Seven years ago haven't seen it since that time.

NOTE Confidence: 0.906089544296265

00:27:20.460 --> 00:27:26.650 Or somebody else they say, Oh yeah, I went to Super Bowl, 2 years ago, I can still describe for almost every play they ran during that game.

NOTE Confidence: 0.915281116962433

00:27:27.710 --> 00:27:42.890 Someone else might say well, I've got in my head 450 songs were popular. Back in the sense of just like all the lyrics. All the verses. But even though they might be really good at remembering stuff like that, from along time ago. If you ask them about something that happened just a couple of minutes ago or yesterday off and they can tell you.

NOTE Confidence: 0.925745248794556

00:27:43.600 --> 00:27:49.180 The problem with memory with a DD is not usually long term storage memory is short-term working memory.

NOTE Confidence: 0.881758689880371

00:27:49.730 --> 00:28:07.230 It's what you depend on for example, if you call the telephone information on create a Phone number and you have to hold it in your head weigh a dial. It because you've got nothing to write it down with often for people with 80. That's difficult. They start transposing the digits or if you go to the other room to get something and you stand there scratching your head right what the hell you came in here for.

NOTE Confidence: 0.890844881534576

00:28:07.890 --> 00:28:20.190 Are you working on a project? You downstairs get something you need for the project say something else. That's interesting or something else that needs doing junior up your elbows in Project #2, having totally forgotten. Ornamental project number one upstairs is kind of important to get it done.

NOTE Confidence: 0.884545087814331

00:28:20.770 --> 00:28:45.000 Lucas complain don't study for a test the meant for the test to go over it. But he can quiz and they've got it. They going to class. The next day, thinking they're going to get a good grade in this and all of a sudden a big chunk with any of the night before his evaporated can't pull it out of their head when they need it within a few hours, few days later, something jobs are memories. All back again. It's not that they didn't have it is that they couldn't retrieve it. When they needed to, and the working memory? Is is really the search engine for the brain.

NOTE Confidence: 0.88184916973114

00:28:46.130 --> 00:28:54.110 No, it's the kind of thing where you get ready to go someplace. You think of 5 things you need to take with you. Half an hour

later, you're walking out there, you got one and can't remember therefore to save your life.

NOTE Confidence: 0.907033920288086

00:28:54.710 --> 00:29:25.000 It's really have to hold one thing in mind, while you're doing something else and that's a key element of the difficulties that many people with ADHD have regardless of their age and then finally there's a 6 clusterin that refers to action in it's the fact that many times people they'd either going too. Slow when they need to speed up or too fast when you just slow down an often they have difficulties in being able to size up situations, so they can sort of read the situation and.

NOTE Confidence: 0.871189177036285

00:29:25.000 --> 00:29:55.510 Figure out sort of when they're losing people's interest and or when they're annoying people, or people. They are engaged in conversation with are getting bored or annoyed or or whatever, so those 6 clusters are the elements of the model that I've developed a written on quite a bit and basically from not just neuroscience. Boo search, but from a lot of conversations with.

NOTE Confidence: 0.923129916191101

00:29:55.510 --> 00:29:58.020 A lot of people of various ages, who have ADHD.

NOTE Confidence: 0.862757980823517

00:29:58.540 --> 00:30:02.510 And what I would say about him is that the roast part, they work.

NOTE Confidence: 0.910573244094849

00:30:03.040 --> 00:30:08.980 Unconsciously in the sense of automaticity and that most of the things that we have to do like driving.

NOTE Confidence: 0.937197685241699

00:30:09.740 --> 00:30:15.610 Or cooking a meal do not involve just one of these but they involve dynamic interaction between them.

NOTE Confidence: 0.937129616737366

00:30:16.690 --> 00:30:42.840 In order to get things done and then the other thing is that these cognitive functions that were calling executive functions for most people are not fully matured until they get into about 2022 years old of age, so in the vein of social interactions. Could you address some of the existing stigmas if any are associated with a DD and ADHD and how to maybe educate the community against them.

NOTE Confidence: 0.862326145172119

00:30:45.060 --> 00:30:55.180 You have a myth that people have about it just not the biggest myth is that this is essentially a problem of Willpower.

NOTE Confidence: 0.592424213886261

00:30:56.460 --> 00:30:57.630 And.

NOTE Confidence: 0.882612228393555

00:30:58.270 --> 00:31:06.100 Now you could talk about that with what I referred to often as as the central mystery of ADHD.

NOTE Confidence: 0.924348831176758

00:31:06.630 --> 00:31:11.860 And that simply this, I've seen a couple of 1000 people.

NOTE Confidence: 0.873152673244476

00:31:12.450 --> 00:31:14.190 With ADHD at various ages.

NOTE Confidence: 0.949461460113525

00:31:14.900 --> 00:31:24.170 Every one of 'em has a few specific activities in which they are able to exercise their executive functions quite well.

NOTE Confidence: 0.931360960006714

00:31:24.820 --> 00:31:29.730 At least as well as most people in some cases, much better than most others are the same age.

NOTE Confidence: 0.925887763500214

00:31:30.380 --> 00:31:33.610 Uh even though and almost everything else they do.

NOTE Confidence: 0.950746893882751

00:31:34.260 --> 00:31:39.830 They have a great deal of difficulty in exercising those same executive functions. Let me give you an example.

NOTE Confidence: 0.926637172698975

00:31:41.080 --> 00:31:56.440 High school kid 16 year old boy was brought to my office. My clinic by his parents and he was the goaltender for his school's ice hockey team and it just happened that the team had won the state championship in ice hockey the day before.

NOTE Confidence: 0.867082595825195

00:31:56.960 --> 00:32:22.430 And so as we sat down to talk together. The parents were basically breaking a little bit about how great he was in the tournament that he apparently is an extraordinarily good goalie this sandwich is the net playing hockey. He missed nothing. He knew where the puck was every 2nd with fast game totally on Top with the category routine. One smart kid tested way high, up in the superior range wanted to get good grades was hoping to go to medical school, but he was always in trouble with his teachers.

NOTE Confidence: 0.890092670917511

00:32:23.060 --> 00:32:43.910 And what they'd cinemas you don't once in a while, you'll say something that shows a smart you are will be talking about something will come in with some comment. That's really very impressive and perceptive but most of the time you're out to lunch. You're looking out the window. You stare at the ceiling and look like you're half asleep half the time you have to pay for A and a question kept asking him was if you can pay attention, so well when you're playing hockey.

NOTE Confidence: 0.8609459400177

00:32:44.560 --> 00:32:46.600 How come you can't pay to entry said in class?

NOTE Confidence: 0.862357378005981

00:32:47.370 --> 00:33:07.550 Or here's another example LA Times. Parents will bring the kids for us to see in this site on the teacher says this kid can't pay attention more than 5 minutes. We know that's not true. We've watched her play video games and sit and play. Those video games for 3 hours at a time and not move. Teacher says she is easily distracted. That's nonsense when she's playing those games. She is locked on the screen like a laser.

NOTE Confidence: 0.897726595401764

00:33:08.060 --> 00:33:31.960 The only way you're going to get her attention to jump in her face or turn off the TV so it looks as though it's simply a matter of willpower does not always sports or video games or some people with any they're not good. At that stuff, they might be in art, there, sketching and drawing and really getting into it for hours at a time. Somebody else when they're little they're creating engineering marvels with Lego blocks and then when they're older, they're taking car engines apart and put it back together, designing computer networks.

NOTE Confidence: 0.910226285457611

00:33:32.490 --> 00:33:46.280 But everybody I've ever seen his entity has a few things they can do where they have no trouble paying attention. Even almost everything else. They've got a lot of trouble paying attention. And if he asked him about it and say what's with this? How come you can do it here and you can't do it there.

NOTE Confidence: 0.904880702495575

00:33:46.860 --> 00:33:52.700 You see what they'll say is it's easy if it's something I'm interested in I can pay attention if not I can't.

NOTE Confidence: 0.907727420330048

00:33:53.240 --> 00:34:15.370 And most people here that they say, Yeah, right congratulations is true for anybody. Anybody's gonna pay attention better for something they're interested in there, something there, not which is do it. They're not interested in which is certainly true but here's the difference. People who don't have a DD if they've got something they've got to do and they know

they've got to do it. It's important that usually make themselves pay attention, either's pretty boring just because they know they gotta do it.

NOTE Confidence: 0.939285576343536

00:34:15.910 --> 00:34:23.920 People with entity it is incredibly difficult for them to be able to make themselves pay attention unless the task is something that's really interesting to them.

NOTE Confidence: 0.910011529922485

00:34:24.680 --> 00:34:32.960 Not because somebody said to them. Hey, you should pay attention to this 'cause. He couldn't get your better grades or better job review or whatever just because it is interesting for whatever reasons.

NOTE Confidence: 0.940682649612427

00:34:33.710 --> 00:34:45.610 Or if they feel they have a gun to their head and it's something they think of is very unpleasant. There's going to be happening very quickly if they don't take care of this right here right now under those 2 conditions.

NOTE Confidence: 0.930176198482513

00:34:46.490 --> 00:34:54.230 No no problem anything else a lot of problems, but under those 2 conditions. It changes the chemistry of the brain instantly.

NOTE Confidence: 0.933219015598297

00:34:54.930 --> 00:35:02.530 And the problem is, it is not under voluntary control. That's where the problem is, I think ADHD is not a willpower thing.

NOTE Confidence: 0.958051741123199

00:35:03.400 --> 00:35:08.730 There's something about the way people perceive things that if it's interesting to them.

NOTE Confidence: 0.947218418121338

00:35:09.250 --> 00:35:10.550 For whatever reasons.

NOTE Confidence: 0.911705911159515

00:35:11.710 --> 00:35:22.320 Then they can usually get into it quite well in anybody ever. See for evaluation of ADHD. I'll ask about what things they can focus on Will and they've all got a list.

NOTE Confidence: 0.916955828666687

00:35:22.980 --> 00:35:31.860 Sometimes it's a sport, yeah, sometimes it's making art. Sometimes it's making music. Sometimes it's reading, although there's actually something interesting about the reading.

NOTE Confidence: 0.79445207118988

00:35:32.390 --> 00:35:36.260 That often another student on time who said to me.

NOTE Confidence: 0.82508510351181

00:35:36.790 --> 00:35:37.610 You know.

NOTE Confidence: 0.899125695228577

00:35:38.190 --> 00:35:43.180 When they make an assignment for the things to read for the This Court of these courses that I'm taking.

NOTE Confidence: 0.914462149143219

00:35:43.920 --> 00:35:56.350 If it's something that it really is interesting to me if it gets my interest. I can read it and usually you have to slow down sometimes but usually I can remember pretty well, what I've just read.

NOTE Confidence: 0.935292840003967

00:35:57.440 --> 00:36:09.790 But he said if it's something that's just boring to me that I don't have any real interest in you know, and I gotta read it. I'll find that often. I've gotta go back and read it again and again because it just doesn't stick inside my head.

NOTE Confidence: 0.899128079414368

00:36:10.520 --> 00:36:20.230 I know what the words mean it's not that I don't know the vocabulary, but it's just my head doesn't process. It is it's it's like I'm licking the words that I'm not chewing.

NOTE Confidence: 0.93096387386322

00:36:21.780 --> 00:36:36.060 He's trying to talk here about what I would call the engagement of attention in order to be able to convert? What's being seen into working memory so that it can eventually be processed into longer term memory.

NOTE Confidence: 0.938646733760834

00:36:36.770 --> 00:36:52.040 And I think if you talk with people who have ADHD and you make that distinction between reading something that they're really interested in and Reading, something that is just really boring to them if it has no interest that you'll find that distinction.

NOTE Confidence: 0.931027293205261

00:36:52.870 --> 00:37:04.330 That when is something they don't have special interest in it that they find themselves off and having to go back and Reread. It repeatedly in order to get it encoded in working memory so they could hang on to it.

NOTE Confidence: 0.912428855895996

00:37:06.470 --> 00:37:27.460 So I have a friend actually who was diagnosed with ADHD as a child and one of the strategies that he used for class work was to try and find something about it. That was interesting so that way. He could focus on it is that is that something you guys use it like in the clinic is that something you'd recommend to people sometimes that will work sometimes.

NOTE Confidence: 0.880926072597504

00:37:28.080 --> 00:37:39.810 You know the people, you like college students will often will get engaged and sort of writing comments as they take their notes that are counter arguments to the arguments that are being added by the speaker.

NOTE Confidence: 0.902932524681091

00:37:40.960 --> 00:37:48.660 Sometimes they'll they'll draw a little sketch out the things being able to write things when you're listening.

NOTE Confidence: 0.918322503566742

00:37:49.520 --> 00:38:04.200 Is important in being able to get it down but there again short-term memory? Is a problem with a lot of these folks and some of them if they go to lecture in the instructor is speaking, too fast.

NOTE Confidence: 0.915203630924225

00:38:05.020 --> 00:38:13.230 Or if it's in a language where the professor's first language is not the language in which the person is listening that their most comfortable with.

NOTE Confidence: 0.91713684797287

00:38:13.760 --> 00:38:32.380 That often they start losing a lot of what That being said, and if they go stop to write something down and take notes on a particular concept or phrase that then they lose what else is is being said over the next couple of minutes, which makes it very complicated.

NOTE Confidence: 0.926094770431519

00:38:34.350 --> 00:38:43.730 So then for less publicly recognized symptoms such as emotion regulation and sleep problems? How well do existing at treatments help with those.

NOTE Confidence: 0.841643750667572

00:38:44.560 --> 00:38:47.360 Well, the fact is that?

NOTE Confidence: 0.922734320163727

00:38:47.860 --> 00:38:53.650 The the the nice thing about ADHD is that we do have medications that.

NOTE Confidence: 0.914598822593689

00:38:54.400 --> 00:39:14.910 Actually help a lot of the people with ADHD and we've got a lot of studies that demonstrate that for about 8 out of 10 people who

have ADHD if you given the right amount of the right medicine. It's helpful to them. Now it's important to be clear about this, the meditations. We have for ADHD cure nothing.

NOTE Confidence: 0.938221573829651

00:39:15.840 --> 00:39:21.790 It's not like you have a strep throat, you take an antibiotic and it knocks out the infection is much more like eyeglasses.

NOTE Confidence: 0.914384782314301

00:39:22.620 --> 00:39:41.620 I have a problem with my eyes. I can't read typewriter size print without my glasses. If I put my glasses on I can read it. About as well as anybody can take him off. I'm right back where I started the glasses do not fix my eyes. They just help me see when I bought him on in the same way the medicines. We used for treating ADHD do not cure ADHD at all.

NOTE Confidence: 0.908480405807495

00:39:42.460 --> 00:39:55.580 But for 8 out of 10 people is significantly improves it now for some people. It's huge how much the medicines work for them. Others it's substantial, but is not huge others. It helps a little but not that much in 2 out of 10 it doesn't do it damn thing.

NOTE Confidence: 0.902285933494568

00:39:56.720 --> 00:40:22.140 But the fact is that these medicines are very helpful for a lot of people if they get one thing that that's important in a lot of prescribers did not know about this either. The fact is that many physicians with possible exception of pediatricians. But many physicians have almost no training in how to recognize ADHD.

NOTE Confidence: 0.894206285476685

00:40:22.660 --> 00:40:54.050 The sense that we recognize that these days, or in how to work with a stimulant medicines that we used to treat it because what's unique about these medicines is that unlike many other medicines. Although not all medicines where you adjust the dose for the medication, according to how old the person is or how much they weigh or how severe symptoms are which is referred to serve the big prick IG approach to to prescribing and for many medicines that works quite well.

NOTE Confidence: 0.841502010822296

00:40:54.670 --> 00:40:56.420 But for the stimulus it doesn't.

NOTE Confidence: 0.930658936500549

00:40:57.320 --> 00:41:08.030 For example, in our clinic. We see little kids. You know 2345 years old, Elementary School Kids High School Kids College and University students and adults.

NOTE Confidence: 0.90736973285675

00:41:08.640 --> 00:41:12.740 Our youngest patient at the moment is 3 our oldest patient is 79.

NOTE Confidence: 0.870050430297852

00:41:13.720 --> 00:41:46.050 And most of the little kids are taking very small doses of the stimulant medicines that we use. No those who do the medicines. The ones that the brand names. People recognize would be like Ritalin Ritalin. Just a brand name for methylphenidate. The same way. Bayer is a brand name for aspirin, but we've now got a number of other medicines of that type and then the we had those since we've had methylphenidate since 1956 and then we also have the amphetamines, which we've had much longer.

NOTE Confidence: 0.955985486507416

00:41:46.100 --> 00:41:49.190 First amphetamines were developed in 1937.

NOTE Confidence: 0.889025866985321

00:41:49.900 --> 00:41:57.960 In the ones that people recognize the names like Adderall and Vyvanse.

NOTE Confidence: 0.878191947937012

00:41:58.690 --> 00:42:13.040 And Dex Adren and my day is so some of the other, but there are all kinds of different delivery systems. We've got but with the population that we see which across the lifespan. Most of the little kids are taking very small doses.

NOTE Confidence: 0.894250571727753

00:42:13.860 --> 00:42:21.200 But there are few of not many, but if you where we gotta go up into the almost into the adult dosing range to touch him because their bodies are not that sensitive to it.

NOTE Confidence: 0.866711020469666

00:42:21.970 --> 00:42:47.740 And if we give them that level of dosing for those exceptional kids. They respond to it quite well when the lower doses that usually give for kids of similar age don't do anything on the other hand, though among the adults. We see here. Some of them who are taller in fatter than I am and I'm not skinny.

NOTE Confidence: 0.885785639286041

00:42:48.370 --> 00:42:54.540 You know they're taking the effective dose for them is no more nude give a typical 5 year old.

NOTE Confidence: 0.909205257892609

00:42:55.780 --> 00:43:11.000 Yeah, so the dosing doesn't go by age or weight or symptom severities how sensitive is your body to it. Are there any markers we can use to predict how sensitive you are going to be or how well you'd respond to

them because you mentioned that people will respond some people will respond better than others.

NOTE Confidence: 0.939327716827393

00:43:11.610 --> 00:43:17.380 Yeah, it was some people respond better than others just because of the total sensitivity to stimulants.

NOTE Confidence: 0.918002426624298

00:43:17.940 --> 00:43:22.460 In some respond better to one type of stimulant than another.

NOTE Confidence: 0.905029892921448

00:43:23.200 --> 00:43:49.990 The main thing is that well first of all let me just say a little bit about the mechanism of action the way stimulant medications work is quite simple, they slow the reuptake of dopamine in those neural networks that are operating on dopamine, which happened to be most of the neural networks that are involved in executive functions are dopaminergic networks.

NOTE Confidence: 0.859234273433685

00:43:51.080 --> 00:44:09.250 And So what that means is that that think about the active sort of picture. The synapse and you've got an action potential coming coming along the Axon and comes down to the end of the synapse.

NOTE Confidence: 0.87205296754837

00:44:09.850 --> 00:44:23.040 Pre under the presynaptic side, then what is going to do is cause the release of microdots of the neurotransmitter in this case dopamine? Which will cross the synapse like spark plug.

NOTE Confidence: 0.92238050699234

00:44:23.680 --> 00:44:26.920 And hit Receptor buttons on the other side.

NOTE Confidence: 0.870169937610626

00:44:27.470 --> 00:44:42.090 An if you have enough of the micro dots of the transmitter chemical coming across vast and hit hit enough receptors, you're going to get a good signal.

NOTE Confidence: 0.886008203029633

00:44:42.990 --> 00:44:56.390 If you don't, it's just going to fizzle now. The other piece of that is that on the presynaptic side of the synapse. You've also got proteins cells that are referred to as transporters.

NOTE Confidence: 0.90877640247345

00:44:57.310 --> 00:45:02.710 And their job is to work like little vacuum cleaners so that when they?

NOTE Confidence: 0.876196205615997

00:45:03.380 --> 00:45:21.270 On the front of preset mapped excited when you get the release of a neurotransmitter chemical fractions of a second later they go and stuff, it back and clear it out of the synapse. If you didn't have that you'd never will get anything else done, but these are processes that happens, so fast.

NOTE Confidence: 0.902258336544037

00:45:22.050 --> 00:45:28.920 That there's no time to think about it, it's all done unconsciously.

NOTE Confidence: 0.922726511955261

00:45:29.480 --> 00:45:45.410 And we're talking about tiny tiny neurons and the fact is that the speed at which these communications take place is amazing in one thousandth of a second you can get 12 messages across.

NOTE Confidence: 0.887976825237274

00:45:46.550 --> 00:45:50.510 And so we're talking about a process that works rapidly.

NOTE Confidence: 0.894404590129852

00:45:51.260 --> 00:46:05.140 And a process that is not involving one lonely little neuron, which is what you usually see in diagrams in textbooks, but rather we now know a lot more about how these things traveling Cascades.

NOTE Confidence: 0.898164749145508

00:46:05.900 --> 00:46:36.630 The fact is that you've got to get in order to get messages through you've got to get it across hit the receptors sit on the receptors fractions of a second long, long enough to be able to get the action potential across and then it has to be the transporters have to suck it back in and now the mechanism of action for stimulant medications. Both methylphenidate and amphetamine have one mechanism in common they slow.

NOTE Confidence: 0.690198421478271

00:46:36.630 --> 00:46:37.660 That Reuptake,

NOTE Confidence: 0.904065132141113

00:46:38.280 --> 00:46:40.970 Back into the presynaptic side.

NOTE Confidence: 0.91646534204483

00:46:41.610 --> 00:46:44.830 Just by fractions of a second, but long enough, it'll sit there.

NOTE Confidence: 0.929162263870239

00:46:45.530 --> 00:46:47.310 And get the message across.

NOTE Confidence: 0.917638301849365

00:46:48.230 --> 00:47:04.290 And they did the difference between the 2 between methylphenidate and feta mean is that the amphetamine tends also to release somewhat increased amounts of the transporter chemical itself.

NOTE Confidence: 0.92188960313797

00:47:05.170 --> 00:47:13.400 From the presynaptic side and so the way that works is if you happen to be somebody who isn't getting enough of it released in the 1st place.

NOTE Confidence: 0.914348781108856

00:47:13.950 --> 00:47:34.710 And then you slow the reuptake it's not going to do very much of anything because you just didn't have enough at out there to begin with because the really simple to really get the signal across on the other hand. These are very sensitive mechanisms. And if you've already got enough of it out there and they start throwing more out there, you're likely to jam the system 'cause it's an inverted you curve.

NOTE Confidence: 0.815964877605438

00:47:36.020 --> 00:47:46.630 Yeah, this is better in about, very nicely by Amy Arnsten. Actually, who is still under deal faculty at the medical school and his very well described it.

NOTE Confidence: 0.895059525966644

00:47:47.230 --> 00:48:07.220 So those are the 2 message medicines that we have an it's something where you can't tell people don't come with labels on their forehead, saying I'm somebody who's going to work respond better to amphetamine or I'm somebody who responds better to methylphenidate. Basically, you pick one try it, see how it works, and if that doesn't work try the other one.

NOTE Confidence: 0.9272580742836

00:48:08.350 --> 00:48:33.660 So you mentioned previously the trainings of pediatricians and other characters of young adults and in one of your articles. You describe why young adults with ADHD are often when they are no longer in the care of their provider do not get the help that they need so do you have some suggestions on how these patients could be provided with more adequate care?

NOTE Confidence: 0.896737098693848

00:48:34.160 --> 00:49:04.470 Yeah, well the problem is this that if you have ADHD usually when you're a kid usually you're going to be treated by a pediatrician and some of the pediatricians are really quite sophisticated about this and quite good at being able to monitor medications and to work it out and to see that people get adequate diagnosis evaluations. Some not and the problem. Then is that if you've had a pediatrician who's been helpful to you.

NOTE Confidence: 0.93635880947113

00:49:04.470 --> 00:49:15.350 Then you go off to college or University. You may have difficulty in getting somebody there who would be willing to refill your prescription and these are schedule 2 drugs.

NOTE Confidence: 0.911069810390472

00:49:15.850 --> 00:49:45.920 And there are some good reasons why many physicians in many University clinics do not like to be dispensing schedule 2 minutes because they know very well that there are some people who get him and sell image or share them for people who don't. In fact have ADHD but they're just hoping to be able to allow themselves to stay up for a couple of all nighters to make up for the work, they should have done the previous 3 weeks or think that it's going to.

NOTE Confidence: 0.921037614345551

00:49:45.920 --> 00:49:53.250 Give me the Lake up in terms of being able to pass a test even though the medicine doesn't put any information in your head that's not already there.

NOTE Confidence: 0.907628238201141

00:49:53.990 --> 00:50:17.590 But as a result, University clinics around the country, usually will not start. Some students on stimulant medications. They usually ask them to get an evaluation elsewhere, then get started and then some. Some universities will then re fill the prescriptions. Once the diagnosis has been made in trial of medications been successfully completed.

NOTE Confidence: 0.927715241909027

00:50:18.160 --> 00:50:34.910 But there are some schools where they are reluctant to do that. And just that people ask people to get this taken care of privately because they're afraid they're going to be putting too much in the way of stimulant medication out on campus in a way that's going to cause problems.

NOTE Confidence: 0.918115675449371

00:50:36.150 --> 00:51:06.470 And so it's very important. I think for a person to who has ADHD was going off to college if they're going to be far enough away from their primary care doctors. The pediatrician who's been prescribing for them. There are two ways. It gets done. One is that sometimes they'll make arrangements for their primary care doc to continue to write the medication for them and to monitor with them and it will stop in and see him maybe once every 3 or 4 months when there.

NOTE Confidence: 0.90984845161438

00:51:06.470 --> 00:51:32.240 Common education or something and then have the prescriptions picked up by their parents or some other family member and then have them sent to them at the University. That's one way of doing it and the other way is simply to try to find a clinician in the community where

the school is who be willing to evaluate them and then prescribe for them, the medication that they need.

NOTE Confidence: 0.927642285823822

00:51:33.130 --> 00:51:55.140 But that's not an easy thing to do in a lot of students are you a little bit weary of How do I go about finding somebody and they'll hear about that? They've got friends who have tried and have not had a lot of Luck in finding somebody who really knows what they're doing with these medicines or who's not afraid that they're going to be getting in trouble for writing, too many prescriptions for stimulus.

NOTE Confidence: 0.950066030025482

00:51:57.120 --> 00:52:03.270 Yeah, it sounds like neither of those are ideal situations is that situation, getting any better or worse or about the same.

NOTE Confidence: 0.904288411140442

00:52:03.770 --> 00:52:18.690 Well, it hurt over 20 years I've taught the courses at the annual meeting of the American Psychiatric Association about ADHD often would talk with the psychiatrist Stuart paying extra money to take these courses.

NOTE Confidence: 0.928206443786621

00:52:19.480 --> 00:52:34.270 At the convention and ask him how much time did you have when you're in medical school and aurier residency and fellowship's learning about ADHD and the average amount of time range from zero to 20 minutes.

NOTE Confidence: 0.908152878284454

00:52:35.520 --> 00:52:48.180 No maybe a portion of a lecture about child psychiatry, but many am just have not gotten much information now. You know a lot of us are working pretty hard to try and get the word out.

NOTE Confidence: 0.905239880084991

00:52:48.750 --> 00:52:56.690 And they help to provide information accurate science based information that will be a basis for clinicians too.

NOTE Confidence: 0.884638249874115

00:52:57.260 --> 00:53:12.700 Take on is sort of thing, but the fact is that there's still a lot of doctors out there who just have not gotten adequate help in being able to appreciate the complexity of this disorder or.

NOTE Confidence: 0.897906899452209

00:53:13.220 --> 00:53:16.860 To learn to feel comfortable in doing the prescribing for it.

NOTE Confidence: 0.941903829574585

00:53:17.890 --> 00:53:27.030 So thank you so much for sharing all your expertise today. Do you have any practical advice to end off with for our listeners, especially for young aspiring researchers?

NOTE Confidence: 0.932597875595093

00:53:27.740 --> 00:53:40.120 I guess what I would say is I have found that for me at least doing research which in which combines clinical research with neuroscience is fascinating.

NOTE Confidence: 0.958822190761566

00:53:40.900 --> 00:53:44.120 You know there's so much that we're still learning about the brain.

NOTE Confidence: 0.914164364337921

00:53:44.780 --> 00:54:13.860 Many mysteries yet remain to be solved but I also think that it makes it far more interesting at least to Maine to be connecting that to what I can learn about these things not just from looking at peoples brains through functional MRI or DTI diffusion tensor imaging or other techniques. They're looking at them, but by actually engaging in conversation with them.

NOTE Confidence: 0.8731729388237

00:54:14.580 --> 00:54:35.020 When I started at Yale this cycle. It's IKEA, Skype Department dominated by psychoanalysts and so one of the things that taught me was to learn how to listen carefully to people, some of the theory wasn't all that good. But those clinical skills are important, and so I really think that if you can be working in a field of.

NOTE Confidence: 0.931976616382599

00:54:35.940 --> 00:54:44.530 Research, which involves other people if it's something where you can learn about it from talking with people who have these problems.

NOTE Confidence: 0.882800221443176

00:54:45.110 --> 00:54:49.470 That's a particularly rich mine in which to be operating.

NOTE Confidence: 0.927181005477905

00:54:51.540 --> 00:54:56.950 Well, thank you so much for being here and having us interview, you doctor Brown. It's been really great.

NOTE Confidence: 0.909645915031433

00:54:57.780 --> 00:55:29.530 Thanks, Emily. I appreciate the opportunity. It's a delight to be reconnected with Yale in its way direct as it is, and I think the work that you're doing in the Journal and pulling out information of the wide variety of things that you do is something that's a very valuable contribution. Thank you well. That's all we have for today. Thanks for training into this

episode of the Journal of biology and medicine podcast join us. In 2 months for our coverage of the June 2019 clocks and cycles issue.

NOTE Confidence: 0.875570476055145

00:55:31.110 --> 00:56:04.170 So thank you to the school of Medicine for being a home for YJBM and the podcast. Thank you to the Yale Broadcast Center for help with recording editing and publishing our podcast and thank you to the YJBM editorial board, especially the editors editors in Chief Helen and Fatima and the deputy editors for this issue, Kavita and Patreece. For more information on YJBM in our podcast. Please visit medicine.edu.medicine.yale.edu/YJBM be sure to check out our Journal by searching Yale Journal of biology and Medicine at pubmed.com.

NOTE Confidence: 0.908685982227325

00:56:04.720 --> 00:56:19.780 We'd love your feedback and questions so feel free to tell us your thoughts by emailing us that YJBM at yale.edu if you enjoyed our podcast. Please share a podcast on SoundCloud or Apple podcast. See you in 2 months for the next installment of the YJBM podcast.