

Dr. Loren Roth: This podcast is for informational and educational purposes only and is not to be considered medical or behavioral advice for any particular patient. Clinicians must rely on their own informed clinical judgments when making recommendations for their patients. Patients in need of medical or behavioral advice, should consult their personal healthcare provider.

Dr. Loren Roth: Good day, and welcome to the UPMC Western Psychiatric Hospital podcast series. I am your host, [Dr. Loren Roth, a distinguished professor and a senior psychiatrist at the hospital](#). Today's podcast discussion is about [attention deficit and hyperactivity disorder](#), and my guest today is [Dr. Brooke Molina](#), from the hospital, who I will introduce shortly. This podcast series presents innovative research and patient-centered programs at the cutting edge of psychiatry and the behavioral sciences, of special interest to diverse professionals and the interested public. Our hospital and clinics are the behavioral health psychiatric division of the UPMC health system. The hospital houses the wide ranging missions, clinical educational and research of this UPMC specialty hospital, and it's nationally-known Department of Psychiatry of the University of Pittsburgh School of Medicine.

Dr. Loren Roth: My desk today is [Brooke S. G. Molina](#), PhD. Dr. Molina is professor of psychiatry, psychology and pediatrics at the University of Pittsburgh, [director of the youth and family research program](#), and director of clinical research at the ADHD Across the Lifespan Clinic. Her outstanding research program, federally funded now for over two decades, includes longitudinal studies of children and adolescents followed into adulthood, treatment studies of behavioral and pharmacologic approaches, neuroimaging studies of brain structure and function, and their correlation with long-term symptom course, and the development of primary care-based strategies for the management of ADHD. Known especially for her mentoring prowess and its success, Dr. Molina received the outstanding mentor award from the American Academy of Child and Adolescent Psychiatry in 2016. Congratulation Dr. Molina, and welcome to this podcast. Perhaps we could begin this conversation by you explaining exactly what is ADHD.

Dr. Molina: Dr. Roth, thank you for having me here today. ADHD consists most simply of difficulties with paying attention, with impulsivity, and with hyperactivity. It typically starts in childhood, and often continues into adolescence, and into adulthood. And these symptoms inattention, impulsivity and hyperactivity start to cause difficulties as soon as they are noticed. Most often in kindergarten or first grade when the children start school.

Dr. Loren Roth: Do all children manifest all of the symptoms and problems you just mentioned?

Dr. Molina: There's some variability. Many children have all of those difficulties. Some children tend to have more of the inattention and less of the hyperactivity and

the impulsivity, might not even show the hyperactivity or the impulsivity and be mostly inattentive.

Dr. Loren Roth: And this is a disorder that can go over the lifetime you mentioned?

Dr. Molina: Yes, yes, definitely. We didn't use to understand that. Now we do. Now we appreciate that the symptoms for many continue on into adolescence and then into adulthood.

Dr. Loren Roth: Ah, I see. Again, is there a pattern to those symptoms, for example, or behaviors in adulthood?

Dr. Molina: Sure. Well, one point that I'd like to make that's very interesting is people including professionals often believe that the type of ADHD with which one is diagnosed as a child sticks with that child throughout life. What we have found in [our research](#) conducted partly here in Pittsburgh, led by Bill Pelham, this particular study, and Ben Leahy at University of Chicago, show that young children diagnosed with ADHD may change over time in how their symptoms present.

Dr. Loren Roth: I see.

Dr. Molina: So they might have all of the symptoms when their children, but then as they age they might lose the hyperactive component and we might not see it as much.

Dr. Loren Roth: I see.

Dr. Molina: And so yes it does tend to continue and cause problems for a long time.

Dr. Loren Roth: Well, you are a well-known person in this field and as you've mentioned, and I mentioned, you've been at this quite a long time and you're fundamentally a very well-known researcher in this field. So I would be interested to learn a little bit more exactly about the nature of the research that you have done that in effect permits you to mention and know so much about this disorder.

Dr. Molina: Sure, sure. Much of the research that we do and that I lead or co-lead depending on the study, is longitudinal in nature. So we've diagnosed large numbers of children with ADHD across a number of different studies and followed those children, hundreds of them, through adolescence into adulthood. And a group of them now in the Pittsburgh ADHD Longitudinal Study are in their 30's.

Dr. Loren Roth: Well, that is actually a bit unusual because these kinds of prospective studies are very much what is needed to make some of the lifetime course remarks that you've done. But I am interested in how successful you've been in retaining the

children, then as they grow older in the study, so that one can conclude that there's validity here?

Dr. Molina: Great. That's a key point you just made, and clearly you know about it. Which is that unless we can retain the majority of these children in these studies longitudinally, the findings are flawed. So we need to retain most of them in order to make statements that we trust.

Dr. Loren Roth: Wow.

Dr. Molina: About the long-term outcomes, so, across the studies we've managed to achieve, depending on how you count the numbers, 80 to 90% of the participants.

Dr. Loren Roth: Wow. So usually when you hear those figures, somebody says, "Well, Dr. Molina, what is your special sauce?"

Dr. Molina: Yeah. The special sauce is a fabulous, hardworking, dedicated team. And we treat our participants as important as they are. We try to get the message across to them about their importance, and we try to never take their participation for granted. One of the things, for example, that we have done, as we found over the years that we were receiving increasingly more calls for help and support and guidance. And our study was focused mainly on following these participants over time, but we couldn't ignore their requests for assistance. So there's not much out there for helping older individuals with ADHD. It's grown, it's developed over time, but in terms of resources to help them, how to find a job, how to get disability if they need it, those kinds of things. We received increasingly more calls. So we ended up actually setting up a website page to provide the information and we try to keep it up-to-date. It's a little challenging, but there's a lot of information, and we seem to get many inquiries about that page. Even though it's not something that we set out to do originally, it's a byproduct of our efforts to stay connected to our participants.

Dr. Loren Roth: And do you reach out to them periodically-

Dr. Molina: Often.

Dr. Loren Roth: ... to reassure yourself of where they are?

Dr. Molina: Often. And that's a big part of our research funding, is staying in contact with them. So if we're not interviewing them that year, let's say, we will give them a brief phone call just to check in. And if we can't find them, we persist.

Dr. Loren Roth: You find them?

Dr. Molina: Yes, we do.

Dr. Loren Roth: Somehow.

Dr. Molina: Yes.

Dr. Loren Roth: Well, I wonder if we could discuss a little bit more particularly about the adult manifestations and the kinds of disorders or problems that adults have. And I asked you that for clinical reasons since frankly, I've been at this long enough to know that we didn't always know just exactly what you're talking about. And I also know that as a clinician, sometimes when we have a difficult patient who we really can't understand 100% what's wrong with them or whether we're going in the right direction, often the issue comes up, even if there's no documented child history. Well, I just wonder if this could be another manifestation of this ADHD disorder. So I'm interested to hear, particularly in terms of both the manifestations and potentially even the treatment or the interventions that you would recommend for these adult patients.

Dr. Molina: Right. One of the tricky things about this disorder is that the symptoms may abate somewhat as the children age into adulthood. They may abate because they have truly decreased, but they also may abate because we don't see them as well. A good example is an interaction like this. So I'm going to pretend you're a patient. I'll ask you Loren, if you had any difficulty remembering things this past week, and you'll say to me, "No, no I didn't." And I'll think, "Okay, so you seem like you're pretty organized and the weeks gone fine and you didn't forget anything important." And then I'll say, "With whom do you live?" And you'll say, "I have a lovely wife." And I'll ask you, "Did your wife help you remember where you put your car keys or whether you needed to pay a bill this week?" And you'll say, "Oh yes, she helps me all the time."

Dr. Loren Roth: Wow.

Dr. Molina: So if one doesn't know how to ask the questions correctly, one can miss the symptoms that cause impairment such as the bills don't get paid and the phone calls start coming for unpaid bills. That's the impairment that happens from adults with ADHD that's often missed.

Dr. Loren Roth: I see. Well, best I know the main memory deficits that I have is in names. But frankly, that appeared about 25 years ago in my life and there's been no change.

Dr. Molina: It's good.

Dr. Loren Roth: So I've concluded I'm still with it.

Dr. Molina: Excellent. Excellent.

Dr. Loren Roth: Well, that's a very good. We would be interested a little bit more about the exact or recommended interventions that you mentioned. I mean, I do hear

some things about stimulant drugs and... What do you do for these people, whether it's drug or otherwise?

Dr. Molina: Right. Stimulant medications are effective, so we now have a compelling literature and good reviews in the literature of many studies that have looked at stimulant medications and they are effective. That's the first line treatment for ADHD in childhood and adulthood. And then there are second and third line medications that providers can turn to. In addition to the medications, there are also behavioral treatments or cognitive behavioral treatments, we often call them that these days. There are two strong studies out in the literature that have provided support for what is called a cognitive behavioral treatment for ADHD. And in this-

Dr. Loren Roth: As a primary treatment or to begin, or?

Dr. Molina: Yeah, it depends on the case. And this also depends a little bit on the particular provider and in what direction they're leaning and what treatment they're most comfortable with. And whether that patient can find the cognitive behavioral therapy or the appropriate treatment for the ADHD. So both of them are treatments that can be helpful. We provide those treatments in the ADHD clinic here at Western Psych, and often what will happen is then the medication becomes managed out in primary care, which can work quite well. The behavioral treatments focus around learning how to recognize what one's difficulties are on a day-to-day basis in a very concrete way, and almost as if one might have developing, as you mentioned, like memory problems for example. Clearly not your difficulty except for names, but we all know what it's like when memory starts to fail for people and they need to have some supports around them in order to ensure that things are done, get done.

Dr. Molina: Similar situation here is this is a chronic difficulty with staying organized, with being playful, with taking care of one's responsibilities that might be kind of dull or boring on a daily basis but need to be done. Things that aren't new and exciting often become boring to many of us, but we're able to rally around it and put things in place to get it done. We help the adults with ADHD put those structures in place.

Dr. Loren Roth: Well that sounds kind of a teaching and behavioral approach, and counseling in a way, and education.

Dr. Molina: Right.

Dr. Loren Roth: I think that that is a very, very good. I'm curious, how is it that you came to devote such a large part of your life, your academic life to this disorder?

Dr. Molina: Well, when I was in graduate school I was studying with Lori Chason at Arizona State University, and she was studying long-term vulnerability for addictions.

And I was fortunate enough to be the project coordinator for a study that she was doing, looking at adolescence and risk for later substance abuse among adolescents who had a parent with substance abuse problems. And then I came here to Western Psych because Bill Pelham was here at the time. And he is extremely well-known researcher in ADHD internationally as well as nationally of course. And he had just become interested in the possible linkage between alcoholism and ADHD. He and a colleague were just starting to take a look at that, and he was also starting to consider that we need some treatments for kids with ADHD in adolescents.

Dr. Loren Roth: I see.

Dr. Molina: I arrived, it was perfect timing. I had interest in adolescence, I had interest in addiction vulnerability, and I knew very little about ADHD. It was a perfect marriage, perfect research marriage, and then relaunched my newly developing interest in ADHD as a risk factor for substance abuse. So he and I began the Pittsburgh ADHD Longitudinal Study together. He soon left, and we still continue as colleagues and brought in from there, longitudinal studies, and imaging studies, treatment studies, and now we're out in primary care.

Dr. Loren Roth: Well, it sounds like a busy and continuing life. Here at the Western Psychiatric Hospital, do you feel that your work has been supported or are there certain features of the way one can maintain a career for such a long time at our hospital?

Dr. Molina: Well, it's a wonderful place to grow a career, especially from the perspective of collaboration. We have here as you know at Western Psych, an unusual number of scientists, junior scientists, experts, a wide range of skill sets in a wide range of content areas, and there's a tremendous emphasis on collaboration in this department and across other departments as well, which is reflected in my title in psychiatry, pediatrics and psychology. So I've been fortunate to be able to collaborate with many different people here and those collaborations are directly and indirectly supported in many ways here.

Dr. Loren Roth: Well I'm happy that you mentioned that because I do some interviewing for our medical school and of course over the years have been involved in recruitment of faculty such as yourself. And really, I do note that I think one of the strongest aspects of the overall success and the research we've done here is that this is a highly collaborative place. I'd like to ask you just one final question since when I've told people I was going to interview you, of course, they know your long-term ADHD work, but they also always mention that you are a whiz at mentoring. And since we all know as academics that you don't usually grow up entirely by yourself in the world of academia. So I would like to just in our closing here to say a few words about mentoring and why as I've watched and known you, it's such a joy to you to be a mentor.

Dr. Molina: Oh, thank you for mentioning that. It is. First of all, I resonate 100% to your point, unless we're on an island, none of us grows our careers by ourselves. We do it collaboratively in one way or another. And eventually the people that we choose to mentor will become our colleagues. So, wouldn't one want to develop and contribute to the development of those junior people in a way that will make them, help them, or facilitate them to be the best colleagues possible?

Dr. Loren Roth: And I think you pointed to an essential element because really to me, mentoring when it's well done is communicating to the mentee, "Won't you join me?"

Dr. Molina: Right.

Dr. Loren Roth: And sometimes even, "Won't you excel or even do better than I did?" And that really gives a feeling that you have that kind of support through the difficult times to continue and enjoy yourself. Well, thank you very much for talking with us today. I've certainly learned a lot about ADHD myself. And I wish you the best of luck in your continuing research with you and your colleagues. Thank for being our guest.

Dr. Molina: Thank you, Loren. My pleasure.