Kendal Williams, MD (Host): Welcome everyone to the Penn Primary Care podcast. I'm your host, Dr. Kendall Williams. So one of the most common requests for topic that I get on this podcast is attention deficit hyperactivity Disorder. It's very common, patients come to our practices often asking us to assume the prescription of medications that have been prescribed in the past by a psychiatrist and maybe they're no longer seeing that psychiatrist and they ask us to continue them and even potentially adjust them. Or we ourselves are considering ADHD as a part of our differential and end up diagnosing somebody and starting them on therapy.

We don't often have enough support for this. And so this is a topic that a lot of people wanted to talk about. So as we always do, we brought experts on the program to talk about it. Dr. Shazia Savul is an attending psychiatrist at Penn. She is the medical director of the Penn Adult ADHD treatment and research program. Shazia, thanks so much for.

Dr. Shazia Savul: Thanks for having me here.

Kendal Williams, MD (Host): And I ask back Dr. Joseph Teel, who was on our previous podcast on depression. Dr. Teel is in the Department of Family Medicine and Community Health. He is the vice chair of clinical ops for that department. He is also the associate medical Director of operations for the primary care service line, and does a lot of work with the Penn Integrated Payer Program. Thanks for coming back, Joe.

Dr. Joseph Teel: Thank you.

Kendal Williams, MD (Host): So Shazia. Let's just start with, what is Attention Deficit Hyperactivity Disorder just as an entity, what's the sort of historical context for it?

Dr. Shazia Savul: Sure. Basically what ADHD is, it's a persistent and pervasive neurodevelopmental disorder which is characterized by core symptoms of inattention, hyperactivity, and impulsivity. And these are believed to be caused by disruptions in the circuits which regulate attention and the action hyperactivity and impulsivity.

To just give a historical context to this. It's not a new disorder at all. We believe that ADHD has existed for a very long period of time, and early descriptions of ADHD were given as far back as the 1700s when a syndrome of hyperactivity and intention was described, which corresponds pretty much to what we call ADHD today. Also, interestingly, in 1901, there was a disorder described called Defect of Moral Control, which was published in the Lancet.

And Dr. Joyce still talked about children who were more impulsive and had problems with attention and self-control. So by 1932, there was a condition called Hyperkinetic Disease, which was described, and It was said that their children, with this condition who have difficulty staying still. But then up to 1952, it was not recognized even by the DSM, which is the Diagnostic and Statistical Manual of Mental Disorders. When the second edition of DSM came about in 1968, it identified a condition called hyperkinetic Reaction of Childhood.

And then by 1980, the name of the disorder was changed from Hyperkinetic Reaction of Childhood. To ADD or attention deficit disorder. So ADD is basically a thing of the eighties. Initially it was believed that hyperactivity is not a common symptom of the disorder, and mainly it's about inattention. But then it changed over time. And in 1987, the term ADD was replaced with. That is attention deficit hyperactivity disorder which combined the inattentiveness impulsivity and hyperactivity all into one single type.

Then by 1990s DSM4 listed three types of ADHD the inattentive type, the hyperactive impulsive type, and then a combined type, which includes all of these three symptoms. So pretty much it has come a long way. but the, definitions have, developed in the last few decades.

Kendal Williams, MD (Host): How important is it to distinguish the various subtypes of ADHD when you're making a diagnosis?

Dr. Shazia Savul: So that's an interesting question because when you're diagnosing someone, there are two separate or two main categories of symptoms. You have to establish the symptoms of inattention, and then you have to establish symptoms of hyperactivity or impulsivity. But once the diagnosis is established does it really matter in terms of management? Not really, because any kind of ADHD will pretty much have the same, management.

However there are, further categories of ADHD, which are, identified, the other specified and unspecified types. So say for example, if somebody is not fully meeting the criteria for ADHD, but it is strongly believed that these are major concerns, which need to be. Then we can use the other specified or unspecified types of ADHD and that would justify managing such patients with, the usual treatment for ADHD .

Kendal Williams, MD (Host): So we decided on this podcast to just talk about adults with ADHD, but, all adults you described it as a neuro developmental

disorder. So my understanding is that anyone who's diagnosed as an adult needs to have had symptoms dating back to childhood. Right? It's not something you acquire as an adult?

Dr. Shazia Savul: Yes. At this point it is believed that it's a developmental disorder that starts during childhood, before the age of 12 years. Previously it was, suggested that the symptoms start before the age of seven years, but now the criteria has changed to establish the symptoms before the age of 12 years. Is the literature strong enough to say that there is adult onset ADHD also at this point? No. We only have a handful of studies which are not strong enough to support adult onset ADHD.

Kendal Williams, MD (Host): So Joe, you see children as well as adults. So you've probably more experience with making the diagnosis or considering the diagnosis of ADHD. What are some of the signs that clue you to think about it?

Dr. Joseph Teel: Yeah. For me it's really in many instances, concern that patients vocalize. every now and again, I might be, going through review of systems or kind of just, asking for probing questions about how the life is going or how work is just, as we normally would as part of a conversation and maybe I might uncover something that we dig into. But I think certainly for adults, at least in my experience, the majority of the time this is being raised as a concern. It usually is brought up by the patient independently after they've been noticing concerns either recently in life. Or they're reflecting on, concerns that have been persistent over the course of years.

And as we just, reviewed and heard the fact that the symptoms really do need to be present earlier in life down to 12. Many times this is a pattern that has existed that maybe they just never mentioned, perhaps they didn't have access to medical care or people swept under the rug if they didn't want to hear about it. And just when they're having this conversation, now it's coming to light and being brought up as a clinical concern patient

Kendal Williams, MD (Host): So how do you formally make the diagnosis of ADHD? Maybe Shazia, I'll put that to you.

Dr. Shazia Savul: Yeah. So in order to establish the diagnosis of ADHD ADHD have to establish that there enough problems with inattention. Or hyperactivity and impulsivity. So the DSM, which is the Diagnostic and Statistical Manual of Mental Disorders lists about nine symptoms of inattention and nine of hyperactivity and impulsivity. In order to diagnose adult ADHD, we need to establish five out of nine symptoms and in children. We need to establish six out of nine symptoms. The diagnosis in adults is a little bit easier to

establish as compared to the children. Also we need to establish that there is a impairment in function in two or more settings.

It could be at home, it could be at work in the community and that the symptoms reduce the quality of social, academic, or occupational function. And like we discussed before, the symptoms need to be present before the age of 12 years. so if you have all of these criteria, then we can make the diagnosis of ADH.

Kendal Williams, MD (Host): So I think there's two questions that come up for me, and one is distinguishing it from depression. Or, other life events that may be leading to attention and even maybe some hyperactivity. I imagine that's a challenge for you as well?

Dr. Shazia Savul: Yes, absolutely. There is a lot comorbidity that exists with ADHD. We commonly see symptoms of depression and anxiety which could either be secondary to the untreated symptoms of ADHD or they could, just be in addition to the concerns for ADHD. If we are seeing the patients, in their adulthood who didn't previously have ADHD diagnosed for whatever reason. Sometimes it can be a challenge to differentiate the symptoms of whether they're occurring from depression or anxiety, or they could be due to, ADHD. Because depression can mimic ADHD and same goes for the anxiety.

They can be inattention, distractability, forgetfulness memory problems in all of these conditions. What really helps us in these scenarios is the developmental, nature of ADHD and knowing that the concerns with ADHD they start early on in childhood. And having a history of persistent problems that have caused problems that have led to struggles throughout the course of a person's life is more suggestive of ADHD, versus, If someone is having episodes of these symptoms, or if the symptoms are of more recent onset, then it would suggest that it might be depression or it could be anxiety or other concerns.

Kendal Williams, MD (Host): So I think one of the challenges is distinguishing it between other pathologic entitires, if you will. Depression, anxiety, and so forth. I think the other challenge for me and Joe, maybe you can comment on this, is distinguish it from basically normal life. Folks that maybe ill-matched with their current job by personality, or maybe they do have some mild ADHD, and they were able to sort of accommodate through the life by their own life choices, and now they're put into a job that requires them to be heavily attentive, and they're being very challenged by that. So I'm, often trying to sort out, is this just a variation of normal or is it true ADHD? Joe, do you have any thoughts?

Dr. Joseph Teel: Yeah, Kendall, definitely agree. This is probably my largest challenge as a primary care provider in trusting concerns raised by, patients. certainly I can, take the history and have them reflect on, their early childhood and middle school years, high school and beyond. And to your point, I do find it very difficult to tease out what was maybe okay academic performance and. Performance in the job place up to a certain point. Maybe they weren't straight A students or, the standouts in their, classrooms, but probably may have been fine and average and there wasn't catastrophic failures or, severe persistent problems that would clue anybody in.

And then now at this point in their life, maybe they're, to your point in a new job or if they've reached a new level in their education. I see this in a graduate student who, has gotten through high school and college, and now they're maybe hitting, a level of work that they've never en entertained. And they're now questioning whether they are just hitting their academic, sort of threshold or whether there is something going on. these are long conversations and as much as we can try to stick to the diagnostic criteria, but I do find it very challenging to be able to really put your thumb on what is going on. Is it pathology or, just normal life?

Kendal Williams, MD (Host): Shazia, do you have any thoughts on that?

Dr. Shazia Savul: Yes. people with ADHD, they tend to have worse long term functional outcomes when compared to people who don't have ADHD. So overall, if you compared the two populations, then you find that people with ADHD generally have lower grades or they are less likely to attend college or in complete college, and they have low graduation. Or lower occupational functioning more difficulty professionally with the higher level of unemployment, job switching, financial stress more interpersonal difficulties at work. So that's something that is more prevalent in this population. But then your question as to whether somebody is now in an environment which is more challenging?

Is it that, or is it their symptoms of ADHD that are getting in the way? so in, in those those scenarios, getting the history more in depth, helps. For example, asking those people more in depth about why is it that they're having difficulties at their work. If they're getting, distracted, if distraction is what gets in the way of getting the task completed, or if they forget whatever the assignment was or, whatever appointment was. so if the, if it's actually the symptoms of ADHD that are getting in the way of their optimal job performance, then we would say that, okay, most likely that's what's going on.

Kendal Williams, MD (Host): A lot of the questions that physicians have

about the management of ADHD have to do with the medication. So I want to jump there because I wanna make sure we have enough time to really go over it. So, medications for ADHD are stimulants. I think everybody knows that. They come in two main forms and now three methylfedidate, which includes Ritalin, Concerta, and so forth.

The amphetamine versions, Adderall, Vivance and others. There's now, Atomoxetine, Stratera, out there as a newer agent, which is a stimulant as I understand, but maybe we can just talk about these and, how you start prescribing them. which do you use, how do you use them and so forth? Shazia, maybe I'll start with you.

Dr. Shazia Savul: Sure. when it comes to management of ADHD, we know that stimulants work the best and that's where we start. And when it comes to the stimulants, like you said, there are two major categories, the amphetamine formulations and the methylfedidate formulations. and also there are the non stimulant options. Such as you mentioned the Atomoxetine. There is another medication which is called Vilazodone or Ke l bri which is an SNRI, which just recently got approved for use in the adults in April, 2022.

So yeah, in adults, basically the long acting formulations are FDA approved for treatment in the adult population. The only non stimulus that I have FDA approved are the Statera. That is the Atomoxetine and the Kalbri. which one do we use first? Because the long acting formulations are safer, there is less risk for, tolerance and dependence or, less abuse potential. So it's better to go with the long acting formulations first. Whether it is amphetamine formulations or methylfedidate formulations doesn't really matter. There are some studies that suggest that the amphetamine formulations may be more effective in the adult population. So you could try that first, but even if you use a mehylfedidate formulation, you don't go wrong in that.

Having said that, do we use the shorter acting or intermediate acting stimulants in the adult population? Yes, we use them all the time. In fact, it may be easier for the patients sometimes to get the shorter acting formulations approved by the insurance versus the longer acting formulations. So yeah, you could basically start with any stimulant and you wouldn't go wrong with that.

Kendal Williams, MD (Host): Joe, you probably have more experience than I. how do you do this?

Dr. Joseph Teel: Yeah. Think I pretty much approach it, like, I don't wanna say like a primary care position in many ways, but I sort of have the small number of meds I tend to use, frequently, just like when we're treating hypertension, if

I'm picking ACE inhibitor, I tend to pick lisinopril and not Enalapril, and someone else picks an Enalapril. And so in this setting I on average will start with the amphetamines. Tend to choose Adderall as my initial go to. Tends to work well. Insurance coverage nowadays isn't too bad for the XR formulation, so I don't get too much kickback when I prescribe Adderall XR. And we'll usually start there as a first line.

Certainly if someone has had experience with these medications and they are asking about, the, different class. Concerta is kind of, the one I have used the most in terms of meth, authenticate, deriv. And so I kind of keep those two in my front pocket. Definitely may switch to Ivan or something else if someone's failed therapy or they are asking for something different. But I think Adderall in the extended release formulation is kind of where it all starts. And then, we'll certainly then think about a little bit of nuances, which we can talk about as like, in terms of, adding a second dose late in the day if needed. And kind of those intricacies of getting someone to where they are actually clinically feeling well and their symptoms are controlled and they're productive and happy with the outcome.

Kendal Williams, MD (Host): You seem to indicate that all of the extended release formulations, at least for the main drugs, are largely affordable, that there isn't a cost issue?

Dr. Joseph Teel: So for me I think that probably is true for some, but maybe not all. Certainly there are some newer formulations, that are still, non-generic. And, coverage is definitely more difficult. And some of these do come up a little bit more for kids, but I think I tend to just kind of keep a fairly narrow band and at least right now what I've personally noticed for like Adderall, as an extended release formulation. At least recently, and in the past, maybe even several years, don't, haven't gotten a lot of pushback. And so it tends to be an easy medication to work with, from an authorization perspective.

Kendal Williams, MD (Host): Shazia you mentioned that you start with a long acting preferentially because it's has lower risk of addiction and so forth. You said that both the methyl fedidate and amphetamine classes are roughly equal. What do you Choose when you start it? What's your favorite?

Dr. Shazia Savul: My favorite is Concerta. I think because it now comes in so many, generics. It can be easily obtained by the patients, even if they don't have insurance. So, and it works well. The effect sizes are almost the same as the amphetamine formulations. So, and it's well tolerated. So I start with the Concerta. If that doesn't work, then I would switch to the amphetamine formulations. And I like Concerta also because of the mechanism the brand

cons, Concerta, basically it has a capsule that has a controlled release mechanism.

So the medication is, in a very controlled manner, made available to the system in such a way that the level of the medication, it rises in a gradual manner. And then it remains in the system for a sustained period of time, and then it comes down. So just the delivery of the medication is such that it lowers the potential for abuse or tolerance or dependence. So it's just a safer medication in this respect.

Kendal Williams, MD (Host): So you have a patient on a long acting drug, and then maybe you want to add in a short acting. Joe, you mentioned this scenario, Shazia, when would you consider doing that?

Dr. Shazia Savul: Sometimes the patients tell us that the medication is wearing off too soon, so they take the long acting formulation first thing in the morning. It lasts for six or seven or eight hours, or it's supposed to last longer. It's supposed to last like 10 or 12 hours. But sometimes the patients that tell us that it's not lasting as long, it could be because they're fast metabolizers. It could be because of that particular generic that they're getting, it's just, not being effective for, longer period of time. But whatever the reason sometimes the patients will tell us that. the effect is wearing off. If that happens and they still need for coverage later on in the day, we could add a shorter acting stimulant.

So, sometimes I would add a shorter acting stimulant at three or o'clock or four o'clock, using caution, not to add the shorter, acting stimulants too late, in the day or in the evening because then it starts disrupting the sleep cycle.

Kendal Williams, MD (Host): I had a patient who was doing a part-time job and she felt that she needed it just when she was doing that four hours where she had to focus, as she was just working at home, but on Zoom and so forth. And so, she asked for the, short acting just to be used with that scenario so that then she felt the rest of the day she could manage without it. So I imagine there are certain circumstances where a short acting would be fine as long as it meets the patient's needs.

Dr. Shazia Savul: Right. And that's exactly how it is because the patients will tell us how long they need the medication for, or if there's a particular time when they feel that there is more need for the medication versus other times. And we customize the medications according to how it best addresses the patient's needs. Having said that, ideally, we would be prescribing medications to provide enough coverage so that the symptoms are addressed throughout the day. Because the ADHD is present all the time. It's not like it's present in certain

times of the day and not in the other times. So pretty much, we need to give the medications or prescribe the medications such that the symptoms are addressed for most part, during the day or the evening.

Having said that, the patients sometimes prefer not to take the medication, you know, this way. They would rather take it at a specific time or take more when they're studying or, So then we customize it according to that.

Kendal Williams, MD (Host): You both mentioned, Conserta, Adderall of Ibrantz and so forth. I wanna get a little bit specific on dosing because physicians really need sort of guidance on this. what is a high dose? So for you, Shazia, with Conserta, what's a high dose? And how do you dose it? Like, let's get very specific about it.

Dr. Shazia Savul: So, we have the FDA approved doses, right? So for Conserta we can prescribe up to 72 milligrams, which is FDA approved. Can you go beyond that having gone beyond that? Absolutely. If the patient is tolerating the medication, if the vitals are stable, the blood pressure's not increasing there is benefit, and then we could, push the dose beyond the 72 milligrams, but you really have to justify it. You have to document and justify that. Okay, the higher dose which is beyond the fda recommended limits, is addressing the patient's needs. They are tolerating it. It's not causing any problems. And sometimes if patients are prescribed higher doses, it can be challenging to get it approved through the insurances. But quite often we are able to, get those medications prescribed, or approved for the patients.

Kendal Williams, MD (Host): Joe with Adderall, how do you dose it?

Dr. Joseph Teel: Yeah. So for adults, typically I think in, average starting dose might be around 20. If someone was really maybe a little hesitant or sort of had a per to start at like the lowest dose. Certainly you could drop to 10. You know, it's I think maybe a little small of a dose for an adult. But I think starting around 20 is fairly typical for the XR formulation. And then kind of going up from there Titrating up to efficacy and I think usually you're not gonna really go past, 60 which kind of be you max. So it's, you have that, that 20 to 60 window for the XR formulation.

And then certainly if you are adding that second IR formulation later in the day, you may do that in smaller increments to Shazia's point earlier, not wanting to disrupt sleep later in the day. And maybe you just need to get them through that little end of the work day or the end of the school day where they're studying and wherever they are in their educational pathway. And so there you may just do a small, like 10 milligram, immediate release of Adderall or something like

that.

Kendal Williams, MD (Host): I think those kinds of practical questions are very helpful. I know those are the kinds of questions that I have. I mean, when you can read on the labeling what's recommended, but I wanted to get into those practical questions, because, oftentimes we don't know, exactly, how high we can be comfortable going. So I had a patient a young man who had finished college and he had done fairly well, not super, but had done pretty well, and then got a high powered consulting job and was forced to work in a way that he had never worked before with projects that he'd never been challenged by.

He really wanted to do well, and found himself struggling. So he went to a psychiatrist in New York and was placed on a I've forgotten which one, Adderall, I believe. And then began to over time, because these projects kept coming at him and he was working 80, 90 hours a week, he began to abuse it. And so he had come to me finally after all of this time, he had come back to live with his parents because he had a psychotic break, in the setting of neuro stimulant use. And was basically in the process of trying to get himself better under the care of Penn psychiatrist Shazia, you may have even cared for him to get back into work and so forth. And so I think this is the kind of scenario we all worry about, those of us who are in primary care that. This gets away from us a bit. Can we speak to the issue of addiction?

Dr. Shazia Savul: Yeah, absolutely. so these are controlled substances. So these are scheduled two which means that they do have an abuse potential or tolerance, independence potential. And whenever we are prescribing these medications, we have to make sure that we are prescribing to reliable patients. And that is no risk of diversion. And also, the patients are not likely to misuse the medications. Having said that, we do come across those clinical scenarios where the patients may end up taking the medications in a way that makes them physiologically dependent or they may take too much, sometime and especially if they're not sleeping well, that's a clue.

Or actually having insomnia can contribute to psychotic break in the context of, high doses of, stimulants. So, certainly not an uncommon scenario. When we prescribe these medications, we need to consult the patients to make sure that the sleep cycle is not disrupted. They are getting enough sleep at night. They're not staying awake. And they're not taking more than what's prescribed to them, because there is a risk of developing psychosis or mania. And if that happens, then it becomes more challenging to continue the prescription in such patients, a great majority of these patients end up not continuing the prescription because now there is risk that they may develop, mania or psychotic symptoms again.

But there are patients who have been successfully managed on mood stabilizers are given antipsychotics to manage the psychotic symptoms that may have developed. And after that chose to go back on the stimulants. There is a contraindication, which is listed that if there is a history of psychosis, to not prescribe the stimulant medications. So continuing the stimulants in someone who's had a history of, manic episode or psychosis in the context of taking the stimulant medications is risky. And, it can be done but it needs to be very carefully monitored. We have to make sure that the patient is stable. The psychosis Armenia has resolved, they're compliant with the mood stabilizers, and the doses of the stimulus that they're taking are not very high or the least effective doses they will be taking in these scenarios.

Kendal Williams, MD (Host): So there are situations in patients who have depression where I like to use Wellbutrin, because it has a stimulant property to it, and I know it has a value in ADHD as well. so I wanted to ask you about Wellbutrin, but I also wanna ask, can you add stimulants upon stimulants?

If you're using one of these more stimulating antidepressants, can you add. I know there were some studies about using Ritalin, for instance, with helping to activate patients from who were experiencing sort of apathetic depression. So I'm interested in sort of figuring out that whole world and that scenario.

Dr. Shazia Savul: Certainly when it comes to Wellbutrin, it's not FDA approved for treatment of ADHD. Having said that, there are studies which show very good effect of the Wellbutrin in managing the inner tension symptoms and just increasing the motivation and just improve the symptoms which are not only present or characteristic of depression, but of ADHD as well. We do use Wellbutrin off label for the management of ADHD in patients who have not tolerated similar medications. So it's not first line medication, but used all the time. And it's not as effective as a similar medication, but a lot of patients find, good response. Can it be combined with the stimulant medications?

Absolutely. You know, there are a lot of patients who are taking Wellbutrin for depression or for ADHD, but at the same time are also taking stimulate medications in combination with that. The same goes for SNRIs like, Venavacine. Or Cymbalta duloxetine, which, increase the levels of both, serotonin as well as norepinephrine and are similar to the stimulant medications in that respect because the stimulants increase the dopamine and norepinephrine. We use SNRIs off label for the management of ADHD because there is good effect. patients find, it, helps resolve their symptoms, both of mood as well as of ADHD. And, sometimes we combine them with the stimulant medications. so yeah, these medications, can be given in combination.

Kendal Williams, MD (Host): Thank you Shazia. Joe, do you have any experience doing that?

Dr. Joseph Teel: Yeah, I think, certainly in primary care, we see a lot of, I would say, like crossover or individuals with multiple comorbidities and it in this context, multiple behavioral health or psychiatric concerns. And so I think, parallels that we encounter a lot, I think might be that crossovers with things like. Chronic pain and depression or other areas where some of these in particular SNRIs are very helpful. And I think this is a, similar realm where you see the symptomatology of depression overlaid with some inattentiveness or focus concerns, or Kendall to your earlier point, perhaps, anhedonia is really a predominant, symptomatology and I think certainly the SNRIs are helpful there.

And I think again, obviously don't have nearly as much of experience as Jozy, but I certainly historically have had some very small number of patients who have been managed with both the SNRI and a pure stimulant, but certainly defer to her for complex cases.

Dr. Shazia Savul: I think, what we need to be careful about, in combining these medications is the side effects, right? So, we do monitor for vitals, the blood pressure heart rate those are clues that help us understand if the patient is having too much. Also, if the patient is now having difficulty sleeping at night and is staying awake or developing any kind of manic symptoms that tells us okay, you know, this is too much. But usually I found that a lot of great majority of patients tolerate these medications and very rarely do they develop those side effects.

Kendal Williams, MD (Host): So we didn't talk about Atomoxetine, Stratera, Shazi. What role is that playing in the management of ADHD now?

Dr. Shazia Savul: So, Atomoxetine is FDA approved for management of ADHD in adults. Basically what it does is that it's a norepinephrine reuptake inhibitor, so increases the levels of norepinephrine and also dopamine. Effect is, considered to be almost half of, the stimulant medication, so compared to the Atomoxetine, the are considered to be twice as effective. Having said that in some patients Atomoxetine can be very, very effective in managing the ADHD symptoms versus in other patients they may not have experienced any benefit from it. So it really depends in some patients that they can be a good response with this medication.

So if for any reason a patient is not tolerating the stimulant medications, atomoxetine is what, we would recommend or use also it's a good medication to use in someone who has a history of substance use because this medication does

not have any potential for tolerance or dependence. It's not a controlled substance, or not a controlled medication. So the difference with the stimulant medications is that the stimulant medications, when you take, Adderall or Concerta, it lasts for few hours and then it's out of the system. If somebody skips a few doses of the stimulant and comes back to taking the stimulant, it's still gonna work.

However the Atomaxadine is pretty much like the antidepressants. It needs to be taken every day and it takes about three or four weeks, for it to have its full effect. So in that respect, it's more similar to the antidepressants rather than do the stimulant medeication.

Kendal Williams, MD (Host): So this has been a very helpful discussion. I hope it is for the rest of the primary care community as well. Joe, do you have any closing thoughts on things that you think we should address?

Dr. Joseph Teel: No, hope it was also helpful for people. I think, just reflecting on my, challenges, which we talked about earlier, is really teeing up those subtle cases. I think are, the hardest part I think many of us face. And I don't think we have any magic words or perfect solutions there other than, really Shazia indicated, really trying to get into that history and kind of peel that onion apart to try to, as best as we can understand what's going on.

And I think personally, certainly when someone's presenting with concern, I think very pragmatically what ends up happening is, you try to, as much as we can nail down the diagnosis you may not feel like you are perfectly clear. But I think then many times, usually a practical trial of a stimulant or Atamoxadine, if you wish to choose that. I think usually it ends maybe resulting in a little more clarity, say if the person really responds well, maybe that can be helpful as a secondary sort of diagnostic test in some regard. And so that I think sometimes can be helpful, although it may be less scientific than, I'd ideally like to be.

Kendal Williams, MD (Host): So the two of you really helped me, I think, be more comfortable with these agents. Shazia, it appears that, with the safeguards you mentioned and the other things that you're fairly comfortable with these medications now that, in the right patient, they have low abuse potential and they're very effective, right?

Dr. Shazia Savul: Yes, exactly. And I think what gives us, sort of, clues is, how the patient is functioning. If it's a high functioning patient, you know, they're working, they're studying, they're doing well academically. They're making progress meeting their goals, then it tells us that, okay we are on the right track and this medication is helping them. And they will tell us, they will

tell us that it makes a significant difference in the quality of their life. On the other hand, if you see that somebody's pretty much stagnant, if they're not making progress, that they're kind of having difficulties, a downward spiral that would signal us that, something needs to be changed or maybe it's not as if to continue the prescription in such patients. So, I really go by how the patient is doing and how their function is, if they're doing well and making progress, that justifies continuing the medication.

Kendal Williams, MD (Host): I really want to thank you both. This has been a very helpful discussion for me and others I'm sure. So I do wanna have you back. we can tackle the children. we focused on adults in this one, but at another, podcast in the future, we can focus on the kids. so thank you both for coming and thank the audience for coming to the Penn Primary Care podcast. Please join us again next time.