

Welcome to Nimble Youth. The podcast designed to provide expert insights and valuable resources for parents navigating the complexities of their child's mental health. I'm your host, Matt Butterman, and today we're gonna dive into the multifaceted world of ADHD medications, a topic that affects millions yet still remains shrouded by complexity and debate. According to the National Institute of Mental Health's research database PubMed, attention deficit hyperactivity disorder, ADHD, is diagnosed in approximately seven point six percent of children in The United States with fifty six percent of these children receiving prescription medications to manage their symptoms. Medication usage varies notably across age groups.

Among US high school seniors about twelve point two percent have used ADHD medications with initiation rates, varying by age, three point one percent before age nine, two point nine percent between ages 10 and 14, and three percent during high school years. The choice between stimulant and non stimulant medication also reflects significant trends. According to another study found on PubMed, stimulants were the most prescribed ADHD medication for children age 17 and younger, with usage rates ranging from sixty percent to sixty seven percent depending on the combination with other treatments.

Geographic disparities are also striking. In a study from Pharmacy Times in The U.S, ADHD Medication Treatment rates vary significantly by state. For instance, Mississippi has a medication rate of seventy nine percent among diagnosed children, while Nevada's rate is thirty three percent. Overall, sixty six point three percent of children diagnosed with ADHD nationwide are receiving medication. The study notes that these variations may be influenced by factors such as prescribing practices and regional educational policies. There's also a compelling correlation between ADHD medication use and academic performance.

Other studies found on PubMed have shown that medicated children scored on average 2.9 points higher in mathematics and 5.4 points higher in reading compared to their unmedicated peers. However, these gains, while positive, are not sufficient to close the achievement gap entirely. This brings us to a provocative question. Does higher medication usage in certain regions correlate with school funding models tied to test scores? Some research suggests that areas with financial incentives linked to student performance may have higher rates of ADHD diagnosis and medication prescriptions.

Untreated ADHD carries significant risks, including increased rates of incarceration, employment challenges, and strained relationships. What's unambiguously clear is that addressing these issues early on through appropriate treatment, which often involves medication, can lead to better long term outcomes. In today's episode, we're joined by Doctor. Gretchen Hoyle, a physician specializing in ADHD treatment. Doctor Hoyle will shed light on the importance of adequately treating ADHD. She'll discuss the rationale behind prescribing psychoactive medications to children and we'll explore the high stakes of leaving ADHD untreated. Stay tuned as we navigate these complex issues and seek to separate fact from fiction in the realm of ADHD treatment. Before we jump in, however, we remind you that the content of this podcast is intended for informational purposes only and should not be construed as medical advice. While we aim to provide valuable insights on pediatric mental health, it's important to consult with a

qualified health care professional for any concerns or questions regarding your child's mental well-being.

Always seek the advice of your doctor or other qualified health provider with any medical concerns. Welcome back, Doctor. Hoyle. We've already covered the initial diagnosis and ongoing management of ADHD. Today, let's dive a little bit deeper into ADHD medications.

I guess my first question for you is, why are medications considered the most effective way to manage ADHD, especially particularly compared to behavioral therapy or or, talk therapy? Yeah. So great question. So we know that medications are the most effective treatment for ADHD because there have just been thousands of studies with hundreds of thousands of participants in those studies that show that medication is the most successful way to reduce the symptoms of ADHD. And that sounds like a measurement tools like the Vanderbilt, questionnaire that we talked about in previous podcast, to be able to quantify what the symptoms are like for a particular child, or patient, in order to determine, like, how significant their symptoms are and whether or not we are making an impact on those symptoms with whatever therapy we choose to use.

Okay. So this is kinda like if you had, you know, if you had high cholesterol and your doctor drew your blood and looked at that cholesterol number and then said, well, that's too high. We need to put you on medicine to bring it down. Then they would use medicine for some period of time and then recheck it and see what the difference is. And so we are, you know, we're there's not a blood test for ADHD Right.

And or for the symptoms of ADHD. But we are you know, we do have these tools available to get an assessment of the patient's symptoms. Deepa typically, we do that from the patient's parents and their teacher. And these are 18 different items on this questionnaire, and they're and so the type of questions on there, are getting at the core symptoms of ADHD. So you're looking at, inattention.

So one of the questions would be, does your child have difficulty keeping their attention on what they're supposed to be doing? And so that question will be scored zero to three with zero being that's a never. One being that is, occasionally, and then two being often and three being very often. And so a lot of times when a child is coming for their initial evaluation, that question is scored as a, like, a two or a three. It's either often or very often.

That's usually what's, you know, happening with them. And so, if you imagine 18 questions, so scored zero to three, that means that 54 is the, you know, is the highest score that you can get. And, and so then we are able to use an intervention such as medication to see if, after the child has been on medication for some period of time, we'll repeat those questionnaires with the parent and teacher to find out if the total score has come down. And that is basically how we how we follow ADHD in a clinical setting. It's also how it's been studied.

And over those, you know, thousands of studies and hundreds of thousands of participants, it has been found that medication does the best job at bringing down those symptom scores to a place where we're, you know, considered therapeutic. So, where the patient is in a functional state when they're, you know, on their medication that makes it so that they can function at their very best. Right. So, I think in the last episode you mentioned that, talk therapy, while it can be helpful, it doesn't necessarily help the inattention and impulsivity effects of ADHD and that medication is the most effective treatments and you have the metrics that prove that. How exactly do medications, affect, or ameliorate, you know, inattention and impulsivity.

Yeah. So what's happening with these medications? You know, there's different types of medications, but the first line of medications is stimulants. And so stimulant medicines and I think it's always counterintuitive to people when they're, especially when you're thinking about a child who is, you know, has a lot of hyperactivity and, you know, like, why would you put them on a stimulant? And you're like, well, we're not trying to make them more active.

What we're trying to do is stimulate the part of the brain that is involved in executive functioning and self regulation. So when we talked about ADHD in a previous podcast, we talked about it as being like a disorder of executive functioning and self regulation, and that those functions are happening in the very front part of the brain, in the prefrontal lobe and prefrontal cortex. And, and so we need to turn the functioning on in that part of the brain, and that's what is being is what the stimulants do. So, they do that through a neurotransmitter, called dopamine. And so, you know, that we all have different lives, we all have lots of chemicals in our brain that regulate our thinking and our brain function and our body function and, and dopamine is one of those.

Those. Dopamine is sort of an activating neurotransmitter. And so, when dopamine is binding to neurons, especially in the front part of the brain, then it tends to turn them on so that there's more executive functioning happening in the brain. And so that helps patients and children, like, be able to, regulate their attention, especially to, like, non preferential tasks. So we just talked about how, there are some things that kids pay attention to automatically because they're very rewarding.

Right. But, of course, you know, most of school and, you know, most of life to some extent is someone else's agenda. That's not necessarily inherently rewarding to that person. And so, elevating dopamine in the front part of the brain is associated with being able to pay attention to things that are not something that you would necessarily pick to do for fun. And so, you know, the classroom setting is often like that.

And it also helps, the executive functioning helps regulate those impulses. So it gives your brain the chance to make a good choice Right. As opposed to, you know, making a bad choice. And so being able to control those impulses is a big, big part of treating ADHD. Certainly.

And then the medicines, you know, we think about a lot of times, it's like, oh, we're elevating dopamine. Well, we're not, we're not the medicine's not dopamine itself. So just for some precision here, like, the medicine is a chemical that reduces the natural clearance of dopamine

so that more dopamine is available between the nerve cells to be able to bind to the receptors that are available to it. And those and that process then turns on those neurons and makes them more active in the front part of the brain that's responsible for executive functioning. Right.

And so the stimulant medications clearly have this very positive benefit in terms of executive functioning. Mhmm. And yet, I know in your practice when parents come in with their children and you've made the diagnosis of ADHD and you discuss medications, there can often be a lot of resistance to putting the child on medication. As a physician, how do you address those concerns and, you know, make the case that medication is still the best option for the child. Right.

Yeah. And so that is the million dollar question for me. Like, how do I best articulate to folks the, you know, the benefits of doing medicine for treating this condition? And, you know, it really all kind of boils down to, you know, the risk benefit ratio. So the idea that, you know, doing any intervention is going to have, hopefully, some benefit and then also some risk.

And, and so it's always about trying to balance out those two things in a way that, you know, it maximizes the benefit and minimizes the risk. There are definitely side effects to these medicines, whether they're in the stimulant class or in a non stimulant class. And there's things that we, you know I'll talk through specifics with parents. But the overarching concept is that there are definite risks to not managing their ADHD in the most effective way possible. And so I will point out that like with young children, you know, let's say four year olds or, you know, four or five year olds where, you know, where there is some role, especially when their main issue is sort of impulsive hyperactive behavior.

There are some benefits to doing, certain types of behavior modification therapy and parent child interaction therapy and things that help children like, help us with the environment around the child to make it easier for that child to control those impulses and their behavior. But as we get, you know, into school age and a lot of what we're asking children to do is to, you know, pay attention to things that are non preferential tasks, then medication is really the best way, you know, to make that happen. And the the risk of having a child who, you know, meets the criteria for ADHD and as they're going through school, if if we're in the if we're making the choice, you know, to not manage that or if they are not because they haven't been diagnosed or because it just hasn't, you know, been something that's been addressed, then the outcome, you know, in the long term is pretty substantially problematic. So there's actually a better recent study that shows that ADHD actually affects life expectancy. Right.

And so you're looking at increased risks of, you know, accidents or risk taking behavior because of impulsivity as people get, you know, older and are able to drive and to do things independently. And we're looking at kids, you know, in all age groups where, you know, the risk goes up if we don't manage their ADHD. A lot of people who have ADHD that's untreated will try to self medicate. Right. And a lot of times that involves, you know, substance use that can, you know, lead to others can kinda lead down a road that most parents are very concerned about

and that, you know, that certainly bears out in the data that that's a very reasonable thing to be concerned about.

But generally speaking, you know, if you think about, you know, as parents, we have an opportunity when the child is young to do to put that child in the best possible position that we can to make them be able to be successful in the classroom setting, in the life setting because they're in a very rapid time of learning when they need to be able to acquire a lot of knowledge, have a lot of experiences, like, have this social back and forth with other kids and, you know, other people. And anything that interferes with that, that massive act, you know, accumulation of experiences and knowledge can really put a person on a different trajectory. And so we want them it's really all about making them as functional as possible, getting them to their maximum function so that they can make progress, progress, you know, throughout their lives, and so that by the time they land, you know, in adulthood, they've been able to have those experiences and knowledge and, and are at their most functional. Yeah. So, the lack of executive functioning for a child with ADHD, can at times, you know, be an existential concern.

Correct. And so it's important to get it treated early and get treatment started, whatever that may be. Right. So let's talk a little bit about the different types of medications, starting with the stimulants, which, as you mentioned before, are the most commonly prescribed, but they're not the only options. Tell me a little bit about the stimulants, the classes that you see and use.

Sure. So when I talk with parents about this, I tell them, you know, that there are two big chemical classes of stimulants. And keep in mind that both of these classes, they're in the stimulant category, so they work by elevating available dopamine in the front part of the brain that's responsible for executive function. And so the two big chemical classes of stimulants that we use for ADHD, one is the methylphenidate group. And so the types of medicines that are in that group are things that probably people have heard of.

Ritalin, which is their oldest medicine that we've, that we have available is in that group as well as, the there are long acting forms of methylphenidate such as Metadate, Ritalin LA, which stands for Ritalin long acting, Quilichu, which is a chewable version of methylphenidate, Focalin, which is a, you know, a close proximity to methylphenidate. There are medicines that come in liquid variety like Quilavant, which is also that same active ingredient. There are medicines that come in patch form for kids who, you know, can't tolerate anything in their belly. They can we can put it on as a patch. And so they're and that one's called Detrana.

And I'm giving you all of the, like, trade names for these medicines. But, typically, I'll tell parents when you pick them up from the pharmacy, it's actually gonna probably say on there methylphenidate because that's a generic name, and usually, that's what we're giving the presence of insurances Right. Cover. And so that is one chemical category of ADHD medicines, and the differences between the medicines within that category is about delivery method. So we talked about, you know, whether you need to be able to swallow a tablet, or is it a capsule that you can open up and sprinkle on food, or is it a chewable, or is it a patch, or, a liquid?

There's lots of different ways to do that. That's the delivery method. And then there's also the duration. And so and so similarly, the second category of ADHD, it's like stimulant medicines, is the amphetamine based category. And that word, you know, I'll tell parents, I know that that word, you know, causes concern a lot because that can be, you know, associated with, you know, illegal drugs.

Uppers. Yeah. Correct. Yeah. And so, but in that category are some very effective medications for ADHD, and in that category includes Adderall, which is a commonly used amphetamine based, stimulant, and then Vyvanse and Dexedrine.

So those are and there are there are every, you know, every year that goes by, there are new medicines in each of these classes that have different nuanced things about either how they're delivered or how long they last or even how they act. But, ultimately, they're in one of those two categories of stimulants. And the way that I pick for any individual child, typically, I will start in the methylphenidate group. And that's true for, I think, most clinicians in that, you know, we have the most evidence on methylphenidate. So, Ritalin, that's been around for a long time.

And there is some evidence that there is a little bit better tolerance of methylphenidate in young children. And it also has just more options for me to pick how long I want it to last. And the duration is really important when you think about young children, mostly because, the side effect particularly and I know we'll get more into side effects, but the side effect of the appetite suppression is a really important thing in young kids because you cannot really it is it is problematic to suppress the appetite of a young child for, like, twelve hours. Right? So we are typically using medications that are shorter in that group.

And so I will start with the methylphenidate group. It gives me lots of options as to how long I want it to last and how I want it to be delivered. And then what will often happen over time is that we will have sort of used the medicines in the methylphenidate group as children get older, and then we may at some point move on to a medication in the amphetamine based group. And that is, you know, it gives us options for when we hit a place where the the in the medication that we were currently on, if the risk benefit ratio no longer supports that medicine because we're having specific side effects or just not getting to a therapeutic place, then we can switch to the other class. And a lot of times, that works great.

Right. So let's talk a little bit about some of the common side effects of, first of all, the stimulant medications and how do you address these side effects and maybe mitigate their effect? Right. So by far, the, you know, the biggest thing that the biggest conversation I have about side effects with parents is the appetite suppression, especially in young children. And so, you know, what winds up happening a lot of times is that my goal is to get them therapeutic, so into a symptom range that is appropriate for school.

So if we think back about the Vanderbilt scores, you know, we typically sort of my goal is to get them to a total score of about 18. So that means on all 18 of those questions, the average response is occasionally. So that tends to put them into a place within the bell curve compared

to their peers that makes them functional in the classroom. So, in order to do that, I typically need a medicine that's going to last throughout the school day and that means that it is active during the time that they would ordinarily be eating lunch, which means that there's a pretty good chance that I'm suppressing their appetite during lunch. Right.

So if I can get into a situation I mean, you know, there are occasionally, I will be able to get them therapeutic for their school day and it's not, it is not, you know, causing them appetite suppression during lunch. But I find that that is, you know, that's a tough needle to thread. I mean, it's just a really tight window there. And so the way to address that is to make sure that the child gets adequate calories at the beginning of the day before the medicine is active. And so getting a good breakfast is always important.

That's just good advice for everybody. Sure. And then, and then having the parents recognize the fact that once the medicine is worn off or is wearing off, that the child will get hungry. And so that sometimes looks like telling people, like, if they're gonna be picking their kid up from school at 02:30, they probably ought to have a snack, like, in the car. Right?

Because that is what I'm sort of going for is for that medicine to be wearing off that child to get hungry, and we can sort of replace those calories that were missed at lunch. Yeah. And then, of course, trying to get additional calories in, you know, for dinner or trying to get, you know, an adequate amount of dinner. And then the thing about stimulant medicines, especially with side effects is that, you know, depending on the child and their and their symptom profile, there are lots of kids that I have who are only taking the medicine on the days that they're in school. Yeah.

And so a lot of they're using it as a tool to be able to, you know, to do what they need to do academically, which means that if they're not on the medicine on the weekends or non school days, then, you know, a lot of times they can, catch up on calories in that on on those days. And I talk to my parents a lot about that. And that is part of why this, you know, is a chronic condition and we have you come in, you know, on regular intervals and weigh the child. We also check blood pressure. Some of these medicines can elevate blood pressure, so we're gonna be checking on that.

And it's the kind of thing where you need, you know, routine follow-up to see what those measurements are doing in order to then use the concept of your risk benefit ratio as to whether or not, you know, you're still in the right direction. Right. So appetite suppression seems to be a significant side effect of stimulant medications. But perhaps one advantage of them is the fact that you can use it as needed. Right?

Yeah. And, you know, when the kids are home during the weekend or, you know, even, summer break, you know, you don't have to use it every day. Whereas the non-stimulant medications, and I think you mentioned the class that that, included Strattera, Calvary, and Intuniv Mhmm. Those do have to be taken every day. Is that right?

That's correct. And that's definitely, like, helps me decide which medicine to use in which child. The non-stimulant medicines, so Calvary and Stratera specifically, also work on neurotransmitters. They're predominantly working on a different neurotransmitter from dopamine, so they work on norepinephrine. But that is also, you know, working in the, you know, executive functioning of the brain.

And so, it is helpful in helping with attention and self regulation and those medicines, but they do need to be taken every day. The other classes within the non-stimulant class are clonidine and Intuniv. And those are alpha two agonist medications. And so, that just means that they bind to a receptor that also helps regulate those areas in the brain that are, that are, related to intention and self regulation, reducing impulsivity particularly. But when you're in the non-stimulant class, it's almost like the benefit of that is that you're not having the same side effect profile that you are from the stimulants.

It also means that we can put, like, those medicines as opposed to the stimulants. The stimulants, because they work on dopamine and dopamine is involved in the reward pathways in our brain, that makes it so that the stimulant medicines fall into a category of medicines that are controlled substances. Right. Okay. So, then that means that there are some logistical considerations between the stimulants and the non stimulants.

The biggest one being that with stimulant medicines, you know, when you can only get one month worth of medicine at a time. Right. Okay. So that is just, you know, and so that means going to the pharmacy every month to pick it up. And with, and that also means that when you go pick up a stimulant, then whoever's picking it up is gonna be showing their ID.

I mean, there are things that I tend to warn parents about because sometimes if you get to the pharmacy and that's what's happening then, you know, it can be a little, like, off putting a little bit to be like, okay. What's, you know, what's happening here? There's some administrative hurdles. Yep. Going back to the non stimulants, are there any side effects to the non stimulants?

Sure. So this the non stimulants, they all of these medicines that work in the brain can have what I will sometimes characterize as just mood related side effects. And so, and this is true for stimulants and non-stimulants and basically anything that works in the brain. So as we talk about other medicines that are in classes that we use to treat anxiety and depression, then they will also have a similar, profile. But things like just, you know, irritability is in that category.

That's probably something we see more with the stimulants than with the non stimulants. We see it a lot when the medicine is wearing off, and so I need to warn parents about that. But then there are also, for generally speaking, we can think that the non-stimulants have less of a side effect of the appetite suppression. Although, I do think that there is some of that for some children, But the non stimulants are often a tool that we use for kids who are just not gonna be able to stay on a stimulant because their growth, you know, their weight and their growth is being affected enough that we are now like the risk benefit ratio does not support it. Right?

So, we need to switch to something that's not gonna suppress their appetite as much and typically the non-stimulants are in that category. And then there are just mood related side effects that are like some people will feel less social or they'll feel a little sad or more tired. I probably see more of that with the non stimulants than with the stimulants for, you know, for obvious reasons. Sometimes what happens though is that, we are using non stimulants in more of a way that is considered to be what we call adjuvant therapy, which means that we will use a stimulant in the morning and then sometimes we'll use a non stimulant medicine in the afternoon, noon, or evening, because they have sort of they have different, like, mechanisms of action and they also have different side effects. So the most common way to do that is to use one of the alpha two agonists in the afternoon, you know, when the child's stimulant is wearing off, you're no longer needing as much attention and focus.

But you may still need some help with impulsivity and hyperactivity. And, and so that combination is often helpful. And as it turns out, those alpha, two agonist medicines were originally medicines that were developed to treat hypertension. And then the side effect for stimulants can be, you know, elevated blood pressure. So if you're on a stimulant in the morning that has a tendency to elevate your blood pressure, we're using an alpha two agonist in the afternoon that helps to balance things out.

And so there are lots of nuances in how these medicines are used individually and in combination of, a therapeutic, you know, profile on what their symptoms are like, but then also make it so that the side effects are not reducing our ability to use it. Right. Yeah. So as a physician, you have a wide range of medications and some combination thereof to use. Mhmm.

But that also means you have so many factors to keep in mind. When you're prescribing medication for a child, how do you make that determination, which medication will work best for them? What are some things that would sort of clue you into the best medication for them? Right. And so by far, the most common scenario is that I'm presented with a young child with a new diagnosis.

And so I'm gonna typically pick one from the methylphenidate group and I'm gonna pick one that does not, you know, that is either an intermediate release or even sometimes a short acting one because I don't wanna suppress their appetite for too long. But I will say that and then I'll you know, I'm gonna need to pick something that they can, you know, that could be delivered into their system. So, you know, usually, I'm not picking something that can, only that has to be swallowed whole for young children. So I have lots of options in the methylphenidate group with medicines that come in capsule form that can be opened and sprinkled or liquid or chewable or patch or different things. But I would say that one of the biggest factors in my decision making process is that I think it's important for parents to know that insurance does get a say in this.

Okay? And so, and so most insurance plans will have a formulary. Like, they'll have a list of medications that they will cover for in each of these classes. And so it is helpful for me to be aware of each insurance company, like, what is on their formulary so that, you know, so that we

can get the medicine and be able to stay on that medicine. And so sometimes I think that this is, you know, frustrating to parents.

It's sometimes frustrating to me too. I mean, I think that sometimes the insurance companies have gotten a little more rigid with their, you know, ability to let me do something different. Sometimes that requires me to try things that are in their formulary first and see if those work, and sometimes they do. And then sometimes we have to move on to something that's not on the list of their preferred medicines. But that is just a part of our, you know, US health care chronic condition management Right.

Paradigm that we're in. They want the least expensive option Correct. That we should have. These. Right.

I mean, so they have gone to the manufacturers and negotiated, like, the prices for these. And so, and so it does get a say. The insurance doesn't get a say. So sometimes my parents will be like, oh, I just want you to pick whatever you think is best, and we'll pay for it out of pocket. I'm like, well, it's gonna be \$800.

Yeah. I mean, yeah, I guess that's just not practical. Right. So, and so that helps me make decisions. And then the other thing that helps me make decisions, which I think probably comes out of left field for a lot of parents, is that I need to know what's available based on, like, the, you know, the supply chain.

Right. Right? So, there have been, you know, a variety of different, like, medication shortages, you know, especially since the pandemic. But even before that, this was happening too where, like, you would have things happen in the supply chain that you couldn't get that medicine for a while. And, and so you do have to be sort of aware of what is available in the community, like, what or what you can get.

And that helps me decide what to pick. And a lot of times what will happen is you'll have one of them that becomes scarce for some supply chain reason, and then you'll switch to the next you know, the closest one to that. And then that one will become scarce because, you know, there's just a certain amount of need for these medicines. And so kinda being on top of that is an important thing, to do as a provider because, otherwise, you've got people dropping all over town and calling every, you know, pharmacy. And, I mean, it can get really tough with that.

And so, that also that that is a completely logistical problem, but it's the kind of thing where it does absolutely factor into what I pick. Right. So, I mean, I think it's fair to say, although this may be an inexact term, it's fair to say there's a a fair amount of trial and error in determining the right medication for a child. Mhmm. But there may be another way for you to sort of narrow down the possibilities of something called the, the gene site test Yeah.

Which is a genetic test that clues you into some of the family history. Talk a little bit about that and how it helps you. Yes. Yes. And so and so, you know, one of the things too that I will that

helps me make a determination, as to what medicine to pick is that I will ask about family history.

And if anybody, you know, who's related to the child is on one of these medicines and if it's been a positive experience or negative experience, that helps me sort of frame that, you know, that decision as well. But there are some really exciting emerging technologies in this, in choosing these types of medications. One of them is GeneSight. There are other vendors that do this type of testing. I'm just most familiar with this gene with GeneSight.

This is the one that I've been using for a while, and it's just the one that I'm most familiar with. But it's actually a cheek swab that you can do for the patients. So no, no blood required because we're really, really trying to not have to stick kids. Sure. For basically anything. Right.

We can get away with it. Yeah. So this is a cheek swab, and you send it off to the company, and they come back with a report that says, you know, these are of this class of medicines, these are the specific medicines within that class that are most likely to work as you would expect, for any individual person. Because whether or not a person responds well to a medicine, has a lot to do with their genetics. And that's in two ways.

One of them, you know, is the way the medicine moves throughout the body and how it's absorbed and whether it's metabolized quickly or slowly. And then, then there's also about, like, whether or not the medicine actually binds well to that receptor. All of that for any individual is determined by their genetics, and there are certain genetic markers that have been identified as predicting whether a certain medicine will work well or whether there's a pretty good chance that it will have, you know, unexpected effects sometimes. And then a lot of times, they will sort of land in that middle intermediate zone. But that information can be extremely effective.

It's not the kind of thing that I do right off the bat with everybody, just because the majority of the time, especially if, you know, the usual scenario is that I have a child, it's an elementary aged child who we have a new diagnosis of ADHD. I put them on a methylphenidate based medication, and that most of the time, that works great. Okay. So it's fine. And then we'll go over this process over, you know, with chronic care management where we're seeing them at regular intervals and adjusting the medicine dose or changing that if we need to.

But there are definitely folks whose medicine that I try the first time may not work great, and then we'll try one from another class, and that doesn't work great. And then we're looking at other potential medicines for other classes because we're treating other comorbid conditions. So anxiety and depression can be in this mix too. And once we start having, you know, multiple medicines in the mix, I do find it very helpful to have that genetic information if possible. Sure.

And so, because now it's getting more complicated and it's you know, it gives me some additional precision in making decisions, especially for medicines where, you know, the medicines that are the like, the nonstimulants, typically, I can tell pretty quickly whether they're gonna work well for a patient or not. But the other medicines take several weeks to reach what

we call steady state. And so, depending on, you know, how acute the problems are for that patient. I do wanna make as good a choice as I can, in the short term because once you commit to a medicine, it takes several weeks to know whether it's really gonna be a good fit. Right.

Right. So having additional information on the front end is super helpful. Sure. Sure. So this whole process of finding the right medication is very complex Mhmm.

Even for you as a physician. But certainly for parents, it can be head spinning. Sure. And so that brings up, kind of the point I'd like to conclude with, which is that it's very important for parents and caregivers to work with their physician in determining this medication therapy. Can you sort of, talk a little bit about the importance of that and Sure.

Its role? Yeah. Definitely. I mean, I would say, like, when I think that it is it is important to recognize this is a chronic condition, and it's gonna be the kind of thing that we're gonna wanna see regularly in order to make sure that we are, you know, doing the very best we can with that risk benefit ratio. And it also means that each time that I see patients, you know, the vast majority of the time, I'm gonna ask them the questions about their symptoms or ask the parent, sometimes the teacher too.

Sometimes as people get older, there's actually an adult screening questionnaire for people with ADHD that I can get more information about what their internal experience is with their ADHD and whether or not they're therapeutic on their medicine. So I think that all of those screening tools are important to use. And then also part of, like, the Vanderbilt questionnaire has the list of side effects that we ask about. And so it's basically going down a list and saying, okay. Do you think this medicine is causing you to have a headache or stomach ache or decreased appetite or trouble sleeping?

It makes you feel grouchy or shy or tired or shaky. Are you having ticks? Sometimes that's a side effect. Some people have lots of skin peeling or nail biting. And, occasionally, I'll have a kid who is actually having episodes where they are seeing or hearing things that aren't there.

Okay. So all of those things are things that I think is really important to ask about and check-in with, you know, with the patient at regular intervals to make sure that we're getting as much positive effect from the medicine and minimizing the negative effect. And all and just realizing that that process, what we are trying to do is make them, you know, as happy and functional and, you know, having as good an experience as possible for them in their young lives. But we are also looking to the future because, you know, part of building this little person and their little brain is making it so that they are able to get all of the knowledge and experience and information that they need in childhood to be able to function at their very best as an adult. And so even though a lot of times, it is a lot of effort on the parents' part to be coming in, you know, regularly and to be, you know, working on figuring out these medicines and dealing with side effects and strategies for, you know, alleviating those side effects, it's a process.

But overall, I strongly believe that it is worth it, and the evidence also bears that out. Sure. Sure. I think it's safe to say that close consultation with your health care provider is the key to making sure that you have the best outcome for your child. Thank you again, doctor Hoyle.

Next week, we're gonna be back with you. We're going to discuss the anxiety in young children, and we'll have it's a two point, two part series. First part focusing on younger children. And then the second part, we're gonna break it into at first I guess it's a three part series, I should say. The second part will deal with teenage girls.

Mhmm. And then we will be revisiting, for an episode, for, the current crisis with young men as well. Right. So, they're two sort of related but separate issues that we'll be breaking apart by gender. Until then, you can go to our website www.nimbleyouthpodcast.com.

You'll be able to see show notes from past episodes, see the transcript, see and read the transcripts, and they will also hear the recordings that we have posted. So, that way you won't miss an episode. And, we'll see you next time on Nimble Youth. Till then, take care and be well.