

## **Episode 11 - ADHD (Treatment)**

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**Guest:** Dr. Stephen Koesters, Division of General Internal Medicine, The Ohio State University

**Sponsor:** The Ohio Chapter of The American College of Physicians

### **Episode Summary:**

In this follow-up episode to ADHD diagnosis, Dr. Christopher Chiu interviews Dr. Stephen Koesters about treatment approaches for ADHD in both children and adults. They discuss pre-treatment assessments, non-medication strategies, medication options including stimulants and non-stimulants, and practical approaches to monitoring and managing treatment.

- [00:01:24] - Discussion of pre-treatment assessments
- [00:03:59] - Overview of non-medication treatment options
- [00:08:24] - Introduction to medication categories (stimulant vs. non-stimulant)
- [00:09:00] - Detailed discussion of non-stimulant medications
- [00:11:54] - Overview of stimulant medications
- [00:17:07] - Discussion of medication formulations for young children
- [00:20:44] - Follow-up care and monitoring
- [00:23:16] - Discussion of drug screening and monitoring
- [00:26:02] - Managing medication side effects
- [00:29:27] - Discussion of drug holidays
- [00:31:08] - Final management tips and pearls

### **Key Takeaways:**

1. Pre-Treatment Assessment:
  - Focuses on basic history and physical examination
  - Emphasis on cardiac screening:
    - Family history of cardiac issues
    - Blood pressure and heart rate monitoring
    - Physical exam focusing on cardiac assessment
  - EKG not routinely required but can be obtained if concerns exist
  - Assessment of current sleep patterns and appetite for baseline
  - Few absolute contraindications to treatment
2. Non-Medication Approaches:
  - School-based interventions:
    - 504 plans and IEPs for children
    - Communication between parents and teachers
    - Organizational support in academic settings
  - Behavioral interventions:
    - Cognitive behavioral therapy
    - Organizational strategies
    - Executive function training
    - Coaching support

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- Emerging digital therapies:
  - FDA-approved video games for specific age groups
  - Focus-training applications
- Practical strategies:
  - List-making and calendar usage
  - "Body doubling" techniques
  - Environmental modifications
  - Structured routines
- 3. Non-Stimulant Medications:
  - SNRIs (Selective Norepinephrine Reuptake Inhibitors):
    - Atomoxetine (Strattera)
    - Viloxazine (newer option)
    - Takes 1-4 weeks for full effect
    - Requires consistent daily dosing
  - Alpha-2 Agonists:
    - Guanfacine (Intuniv)
    - Clonidine (Kapvay)
    - Particularly useful for oppositional symptoms
    - May help with sleep issues
  - Bupropion (Wellbutrin):
    - Off-label use for ADHD
    - Particularly useful with comorbid depression
    - May have interactions with other medications
- 4. Stimulant Medications:
  - Conceptual Framework:
    - Similar to insulin dosing patterns
    - Consider timing of needed coverage
    - Match formulation to daily schedule
  - Two Main Categories:
    - Methylphenidate derivatives
    - Amphetamine/dextroamphetamine derivatives
  - Dosing Principles:
    - Start low and go slow
    - Begin with short-acting formulations
    - Transition to long-acting as appropriate
    - Consider age-specific formulations
- 5. Pediatric-Specific Considerations:
  - Age considerations:
    - Diagnosis rarely before age 5
    - Pill-swallowing abilities impact choices
  - Special Formulations:
    - Chewable options
    - Liquid formulations
    - Patch delivery systems
    - Crushable tablets
  - Practice tips:
    - Train pill swallowing with candies
    - Consider opening capsules when necessary
    - Match formulation to child's abilities

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6. Monitoring and Follow-up:
  - Initial monitoring:
    - More frequent early follow-up
    - Gradual spacing as stability achieved
  - Key monitoring parameters:
    - Weight tracking
    - Blood pressure checks
    - Growth in children
    - Side effect assessment
  - Practical approaches:
    - Use of patient portals
    - Telehealth options
    - School/work performance feedback
    - Communication with families/caregivers
7. Side Effect Management:
  - Common issues:
    - Appetite suppression
    - Sleep disturbances
    - Mood changes
  - Assessment framework:
    - Peak dose effects
    - Withdrawal effects
    - Duration effects
  - Management strategies:
    - Timing adjustments
    - Formulation changes
    - Dietary modifications
    - Sleep hygiene
8. Drug Holidays:
  - Appropriate for stimulants only
  - Consider for:
    - Weekends
    - School breaks
    - Summers
    - Managing side effects
  - Not appropriate for non-stimulants
  - Individual decision based on:
    - Patient needs
    - Side effect management
    - Family preferences
    - Activity schedules

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### **Transcript:**

*This transcript has been edited for clarity*

[00:00:00] **Christopher:** Welcome to Everyday Medicine. I'm Christopher Chiu. This is a podcast from the Division of General Internal Medicine at The Ohio State University, where I'm the Director of Education for

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the Division. This podcast is focused on primary care and aims to provide current information to medical professionals from experts in Ohio.

[00:00:26] We're also graciously sponsored by collaboration with the Ohio Chapter of the American College of Physicians.

[00:00:31] . And here again, I have Dr. Steve Koesters. Do you want to introduce yourself?

[00:00:42] **Steve:** Sure. Happy to be here again. I have been here at Ohio state for about 25 years now. And at practicing internal medicine and pediatrics in the academic setting. And I see a lot of ADHD as part of that. So I'm excited to be here to talk with you and share some of my pearls and tips.

[00:00:59] **Christopher:** And for those of you who missed our first episode, I encourage you to go back and listen to it. It was about the diagnosis of adhd in adults and children and this episode is going to be focusing on treatment. So to remind people when we talked .About Diagnosis, we looked at adults and children we talked about getting history getting collateral using some of the validated tools in our practice and Also looking at maybe some comorbid conditions, which we have to look at.

[00:01:24] So now we're going to move into treatment. So actually before treatment, I want to ask you, are there other types of assessments we would do, like a pretreatment assessment? I remember back in the day we used to do like EKGs for kids. Can you talk about some of these things?

[00:01:37] **Steve:** Yeah, happy to. Pre treatment assessment is really pretty simple at this point in time. It really is just a basic history and physical. You're going to focus on a couple things. Again, we talked about under the diagnosis topic, we want to make sure there are no comorbid conditions. So we were talking more about like depression, anxiety, but obviously we're going to look for any physical things as well.

[00:01:54] Any other conditions that are going on that might be mimicking or causing symptoms that we would need to address instead. And then we want to look for things that. Would make a potentially harmful to treat with ADHD medications and such. So we're going to look at their blood pressure.

[00:02:07] We're going to look at their heart rate, their weight and look at some of the kind of pretreatment. What's their appetite like, what's their sleep pattern like, do they have issues with headaches or stomach problems or things like that, that we want to be aware of? Because a lot of these are going to get into what we're going to monitor for.

[00:02:21] For side effects of when we're treating with medications. The big one of course is cardiac and people always ask what exactly do I need to do for a pre treatment assessment, it's actually not much, a good history will really meet most of what you need to do. I would liken this to doing a sports physical.

[00:02:38] A lot of times we're going to ask him, is there any, concerning family history? Is there any thing that kind of catches our attention for, early cardiac death or someone who, uses pacemakers at an unusual age and any of those kind of red flags we think of traditionally.

[00:02:52] And then we're going to do a good exam. We're going to listen for a murmur. We're going to listen for anything that sounds unusual. Obviously, we're going to look at their blood pressure as well, as I mentioned. And if all of that is very normal, that's probably the end of the story. Now I will say I'm pretty liberal with grabbing an EKG if there's anything that doesn't seem right.

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[00:03:08] Or if they're an adult and they're old enough to have problems, sometimes I'll use it as an excuse to grab a baseline ECG, but it's not required. And without any other red flags that show up, you really don't need to do anymore.

[00:03:18] **Christopher:** Are there any absolute contraindications that you come across during this assessment that will help you make your recommendation on the treatment options?

[00:03:25] **Steve:** It's pretty rare. Obviously, if you have something that's undiagnosed, if you detect something on exam that needs further evaluation, you're going to hold off until you've thoroughly investigated that. If they have a marfanoid habitus and you need to check that out before you, prescribe anything for them, obviously you're going to do that first. But off the top of my head. I can't think of any absolute contraindications.

[00:03:44] **Christopher:** Let's move on to treatment options. And I'd like to start off with the less known treatment option, which is the non medication treatment options. Cause I think people often overlook this and don't realize that you can manage ADHD sometimes without medications. Will you be able to talk a little bit about that?

[00:03:59] **Steve:** Yeah, there's actually quite a few different things that have been tried for ADHD. Now, to be clear, there really aren't any head to head studies about how effective, non medication based treatments are. What I can say to cut to the chase is medications have been proven quite effective, and the general consensus are They are often more effective than the non medication based treatments.

[00:04:19] However, there are a lot of times where we want non medication based treatments. There are people who refuse to take a medication or have intolerable side effects or where controlled substances are just not appropriate. And so we're looking for alternatives. And then I guess what I would say is, even if you're using a medication, a lot of times the non medication treatments can be helpful and you want to think about them.

[00:04:39] They may add a little bit that the medication can't. So let's break that down and kind of kids versus adults. For kids, I would say a kind of collaboration between the parent and the school is really critical. So as a doctor, you aren't necessarily directly involved in that, but making sure that the parent and school are in good communication can really be helpful.

[00:04:58] That gets into whether the child may need any support at school, a 504 plan, IEP... those kinds of things. And, an attentive parent and an involved school system will probably do more for you than almost anything else because medications won't solve everything. If you look into kind of teens, adults, there's been a lot of studies on cognitive behavioral therapy, organizational strategies to help with executive function, coaching and things like that... I guess what I'd say is, I think we generally think of these as likely effective and at the same time, those are hard things to quantitate in studies and there really haven't been head to head studies to know whether, executive function training can replace a medication or whether it's just a nice adjunct. What I would say is if a person is inclined to look into it, I think likely be helpful.

[00:05:43] And if they have not gotten the response you think of for medications, I think it's extra helpful to consider those kinds of things. One last thing I'll point out is there's a new video game that came out, that has actually been approved for, I believe 8-11 or 8-12 year olds to help treat ADHD.

[00:05:59] I have not had any direct experience with this yet. I just wanted to highlight that it's a sort of an emerging digital strategy. I think the idea there is more to train focus and the best way I can think of this conceptually is to me, it's the opposite of using your cell phone and maybe, that kind of trains us to flip

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and like scroll and change attention, every 10 seconds. I think it's games that are designed to help maintain and sustain attention strategies. I'm curious to see where that goes. I don't think it replaces medications yet, but it's an interesting concept.

[00:06:27] **Christopher:** So you have an adult who really doesn't want to do medications, but it recognizes that they're having issues or a child and a parent really does not want this child to be on medications.

[00:06:36] Do you have a set spiel of certain things they can try at home, or do you normally refer out? And if you refer out, who do you refer to?

[00:06:43] **Steve:** Yeah. There are quite a few resources out there. Lots of books that have been written on these topics. One I can think of off the top of my head is the Book of Lists.

[00:06:49] A lot of us as we grow up, whether it's because our teachers and parents coached us, or we've just problem solved along the way, we've developed a way to organize ourselves. We keep a list. We keep a calendar and those organizational type strategies can be taught to some extent. Obviously, a five year old is probably not going to keep a detailed calendar.

[00:07:06] But by the time you get older, a lot of people do start to write things down. For example, I know my kids in school and I think it was in. Middle school, they started having a planner where they were supposed to be writing down their homework for what's due for which class, which day.

[00:07:18] And I think what they're trying to do there is teach some organizational strategies. So I think parents and schools can do this to some extent. I don't think it's something you can readily do in 20 minute office visit. Although you can certainly give them some tips and point them to some resources and books.

[00:07:33] There are counselors out there who can work with people for some of these skills. And then I know there's some courses for adults where you can do things like that too. I think it really depends on the patient, whether they're inclined to do that or not, but I would say you can definitely learn some organizational skills and I don't see a lot of downside to it if the cost is reasonable.

[00:07:49] **Christopher:** I had a patient tell me that there are these people who do live streaming of them doing housework then you can get your housework done at the same time as long as you have that on TV. I believe it's called "Body Doubling". Have you heard about any of that type of stuff?

[00:08:02] **Steve:** I have not, but that sounds fascinating. I know everything's on YouTube these days. And, it makes sense to me that, if you're doing it in conjunction with somebody else, it's always more fun to do something in a group than alone.

[00:08:11] **Christopher:** Excellent. If you don't have anything else to bring about non medication strategies, we can go on to medicines.

[00:08:15] **Steve:** I think it sounds great.

[00:08:17] **Christopher:** All right. I know there are a couple of different types of medications and I've often heard the breakdown as stimulant versus non stimulant. Is that how you like to think about medications?

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[00:08:24] **Steve:** Yeah, I think the broad classes really are stimulant versus non stimulants. Then within each of those are some subgroups we can talk about.

[00:08:30] **Christopher:** Let's talk about non stimulants first, because I feel like when we get to stimulants, a lot of people understand and know those, so let's talk about some non stimulant options that, that we may have for both our adults and children.

[00:08:39] **Steve:** Okay. The non stimulant options really are I guess I'd say there's maybe three different groups. I would highlight the SNRI... selective norepinephrine reuptake inhibitors. The one that's been around the longest is atomoxetine or stratera. And then there's a newer one called viloxazine. These are alternate ways to like attack that focus pathway.

[00:09:00] And I guess what I would say is they have some efficacy that's been proven. They are a little slower to work. They take one to four weeks to kick in. I think the newer one viloxazine is supposed to work a little bit quicker than that but they have to be taken consistently. They're not a take one day or take drug holidays, other days.

[00:09:17] And I think they're a reasonable choice for people who cannot tolerate stimulants. I have generally found them less effective myself, but that doesn't mean they don't have a role.

[00:09:25] **Christopher:** And we can use these in both adults and children, or have they only been indicated for adults?

[00:09:30] **Steve:** They can be used in adults and kids. Although I would have to look at the lower age limit for them.

[00:09:35] **Christopher:** Looks like it's 6 years old.

[00:09:37] **Steve:** And then obviously a lot of medications for kids, you have to think about, can they swallow a pill or capsule or those kinds of things? One other one I'd mentioned is bupropion or wellbutrin is commonly known actually has an off label use for ADHD. And so it might be one to consider in someone who has depression symptoms. That are appropriate for treatment and has some ADHD features as well.

[00:09:59] Again, usually not my first choice, but if you're looking for something that's a non stimulant or if they clearly have other depressive symptoms or comorbidity you're trying to treat, it may be one to consider.

[00:10:07] **Christopher:** So speaking of some core abilities, like so a medication like atomoxetine, do you have to worry about serotonin syndrome if they're already on an SSRI or is it contraindicated to do so in these patients?

[00:10:17] **Steve:** I guess what I'd say is I don't know that I would add it on. Just my gut feeling says I probably wouldn't add it on if that's what they're using already at the same time. Those are the kind of things I always recommend that interaction check, whether it's on your system or use something like Epocrates to check for interactions just to make sure. I feel like new warnings come out all the time that I have to keep up date on. So I'd be hesitant to speak on that.

[00:10:37] **Christopher:** Gotcha.

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[00:10:38] **Steve:** The one other group I'd mentioned are the alpha two adrenergic agonist. So that is guanfacine, commonly known as Intuniv and then clonidine and the long tank long acting version of that is called Kapvay.

[00:10:49] I do think these have a role particularly in kids. I haven't used them as much in adults. But I think it's more in specific circumstances. There is some suggestion that kids who have more of the oppositional defiant type symptoms, or maybe some of the insomnia type symptoms that aren't from stimulant medications, they have underlying insomnia may benefit from these kind of medications.

[00:11:10] They're usually dosed often in the evening, although depending on what formulation using, it could be given once or twice a day. They also take a little bit longer to work. A couple of weeks is typical for Intuniv and you want to consider tapering them when you stop as they can have some rebound effects.

[00:11:26] **Christopher:** One question about these types of non stimulant medications is, can they be used as adjunctive therapy to stimulant use as well for people with really uncontrolled ADHD?

[00:11:34] **Steve:** They can. Like a lot of things, if you can get by on one medication, I usually try to, and at the same time, there are definitely people probably more kids than adults, again, who benefit from a littler stimulant in the morning and a dose of Intuniv at night.

[00:11:46] **Christopher:** Alright, let's move on to stimulants. How do you like to think about stimulants the broad categories of stimulants and and how you start and use 'em in your personal practice?

[00:11:54] **Steve:** I like to think about stimulants a little bit, like I think about insulin for diabetes and initially that may seem like a weird analogy, but, when I think about it, we, a lot of us adult.

[00:12:05] Trained and kid trained have exposure to insulin where, there's short acting insulin. There's long acting insulin. There's that dose curve where it's going to be therapeutic in the system for two hours or six hours or 10 hours. Or if it's a depo form, it may be a pretty flat dosing of it.

[00:12:23] And when I think about ADHD, I always like to, as part of the history and kind of pretreatment assessment, try to figure out when did they really need that coverage of the medication? Is this a child who's going to be in school from, 9 a. m. to 2 p. m. or 3 p. m. And that's really the window of time we need.

[00:12:38] Is it a middle schooler or teenager who has a lot of afterschool activities and sports or has a lot of homework they need to do? Is it an adult who needs to be functional all day long? And I think you're going to end up tailoring a lot of the medications you choose. To that kind of window of time or when does a time where you're trying to have it be most effective.

[00:12:58] So the analogy of insulin is, people may breakfast, lunch, dinner, and we plan our insulin to cover those times with a little bit more therapeutic dose. We had mentioned the non stimulant medications. Those generally are once a day dosing or flat dosing. You don't have to match a window of effect.

[00:13:15] Most of your stimulants, on the other hand, will clear the system each night, so we're going to take a dose in the morning. It reaches a therapeutic level, and then we actually want it to clear the system. Sometimes we see side effects that they don't. So whether it's really functional for six or eight or 10 hours is really how I think about planning that.



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[00:13:30] **Christopher:** This might open a big can of worms, because it's gonna be pretty complicated. What are your favorite stimulant medications to go to? And does it change by age group or by formulary or by accessibility considering a nationwide back orders?

[00:13:44] **Steve:** Great question on the back orders. We'll come back to that one. It has definitely disrupted some patterns of prescribing.

[00:13:49] I will say, I think there's a lot of good generic options. So much like through the rest of my practice in medicine, I try to use generics when available. I would also say that, broadly there are the two categories of stimulants we mentioned, the methylphenidate derivatives and then the amphetamine or dextroamphetamine derivatives.

[00:14:07] And I think they both have their value. Statistically, kids respond a little bit more often to the methylphenidate derivatives and for adults it's vice versa. It's the dextromethamphetamine type derivatives, but both are useful in both. It's not that I only use one in, in one and only use the other and the other.

[00:14:23] What I would say is I do you have the adage of start low and go slow. There's no real good way to predict who is going to need what dose of the medication. And so whether it's, a 300 pound gentleman or a 50 pound kid, I tend to start a pretty low dose of whatever I start. And I usually use a short acting.

[00:14:41] I usually not use a time release to start with just to get a sense of how long it lasts. Does it work? What's the approximate dose they need? Do they get any side effects that come out practically speaking for school age kids? If you use a short acting, it's not going to make it through school day though.

[00:14:54] And so I almost always once I test them out on a short acting, I will change them to a long acting. With kids, the special caveat is, can they swallow pills or capsules or things like that? There are some chewable forms, but for the most part when you're getting to time release, medications are going to be in some kind of capsule or pill that needs to be swallowed.

[00:15:11] So I'll literally honestly in a child start with plain Ritalin, methylphenidate, two and a half, five milligrams, depending on the size of the kid, I might start at five is probably a typical a lot of times if the parents are comfortable with it, I'll give them some leeway to titrate.

[00:15:25] I'll say, hey, for the next week, I want you to try five milligrams in the morning. I would actually often with kids started on a weekend started on a Saturday or Sunday where mom and dad can watch the child, see how they respond, see what they think the impact is because the truth is, if they give it in the morning, send the kid off to school by the time the kid comes home, that effect is going to be gone anyway.

[00:15:43] So you're not really going to see it. And unless the teacher is very involved, you're not going to get the kind of feedback you want. But I'll give parents a little bit of leeway to start a low dose, try it for maybe a week. If they're not seeing any impact at all, I'm going to give them permission to double that dose or increase the dose to see how they respond.

[00:15:58] And then when we get a sense of what they need, I try to make a conversion to a time release formulation. I have the most experience with Concerta, which has now gone generic. Metadate CD, Metadate ER. There's a couple of versions of time release and methylphenidate. I guess the key thing there is even though they're all time release forms of methylphenidate, it depends a little bit on the

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person, how well they work and how they're released based on how that child or adult metabolizes them. The key pearl I'd throw in there is, let's say you start with the generic Concerta and it clearly doesn't go well.

[00:16:32] I would encourage you to assess what didn't go well about it before to saying Methylphenidate is not right switch to Adderall. Because I think sometimes it's the formulation that may cause it to peak a little quicker or last a little bit longer or taper off a little quicker and cause almost like a withdrawal type.

[00:16:46] **Christopher:** Moving back to the kids and the types of formulations you were saying that, you may go if the child's too young and they're unable to take a pill, you have other types, chewables and other things. Can you discuss what are these other options that we may have for our young children? And actually, like, how young do you treat if they're unable to swallow pills? How young are these kids?

[00:17:07] **Steve:** We actually didn't talk about that in our diagnosis one. So good time to highlight that. It is really tough to make a different diagnosis of ADHD for approximately age five. And so that may be a special case when we were talking about when to refer a child.

[00:17:20] If you have a really, challenging three or four year old. I would actually consider getting extra involvement there. But a lot of times we're talking school age kids when the diagnosis of ADHD comes out. And a lot of times it's right in that five, six, seven year old age group where kids are learning to swallow pills and tablets.

[00:17:35] One of the things I always talk about when we're making this diagnosis is, if a child has never swallowed a pill before, I always tell parents it would be helpful if they could learn and I'll tell them to purchase some Tic Tacs or baby M& Ms and practice swallowing them because they're sweet and they taste good and if you chew them, it doesn't matter.

[00:17:52] But that really will help you in the long run. There's just much more options, especially of the generics. If you can swallow some kind of tablet. There is chewable methylphenidate though. And that is generic. It's not a time release and that's the key. But again, when we're starting, when I'm having somebody figure out what dose is correct for them, that is one of the ones that I will use a lot.

[00:18:11] Several other formulations though, do come in, what makes them time release is often it's a coded capsule. It's a bead that can be a capsule that can be opened up and beads can be mixed in with other things. A child or an adult who's struggled to follow pills, learn to follow pills, it's going to make your life easier in the long run because it makes it easier to substitute and swap out medications. If you're having challenges, it is a much smaller list of medications that either are chewable or can be opened and mixed with something.

[00:18:39] But there are newer formulations coming out. When we talk about what new medications are coming out with ADHD, that's where a lot of the technology is changing. This is one that's in a liquid form, or this is one that can be patch for example, is a different one you can use for people who can't swallow tablets. So there are different forms for most of my patients, it's going to be a tablet they swallow.

[00:18:58] **Christopher:** Are there any nuances of prescribing especially with the other types of medications, whether it's Adderall or some of the other non methylphenidate medications?

[00:19:06] **Steve:** I think the key there really is the patient may respond a little differently to the methylphenidate versus the Dextroamphetamine type products. And so I do usually try probably more

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often than not with kids I'll try methylphenidate first. I may try the, dextroamphetamine types in an adult a little bit quicker.

[00:19:25] But I'll try to adjust the dose, titrate it a little bit, get a sense of whether it's, the dosing we're doing or whether it's the medication itself that they're having trouble with. And then based on how they're doing if they're not responding well, if we've tried some different doses or formulations and it's clearly not going to be a good fit, then I will jump ship to the other category.

[00:19:42] But I guess I'd say more so than memorizing the medications, which I think you can be difficult. And I will often, when I'm encountering a problem, I'll look up, okay, what are my other options or what haven't I considered that's similar but different. I would say have a system for having an approach, like having a framework for how to tackle it, I think is the key.

[00:20:00] To circle back around though, to the beginning of the question. I will say that a lot of times if we're needing to use one that is, chewable or crushable or things like that. There's a lot of options in the riddle methylphenidates and those are the ones that kids tend to respond better to. So my little pearl there is any of the immediate release methylphenidates, that's methylphenidate itself, Ritalin, Methylin, or also Focalin are crushable, chewable, and all generic. And so those are the ones I'll often reach for first for kids who can't swallow pills and need that.

[00:20:33] **Christopher:** Let's go with follow ups then. You'll start medications. You'll follow them closely. How close are you following patients after you start a medication? Because especially for children, they're in school. They'll probably have to be taken out of school to see you in clinic.

[00:20:44] For the adults, they have to take time off work to come see you. Will you do them by telehealth? Do you do other tests? So you said, you've done some pre treatment testing. What are the things you're following? Do they have to come cause you have to get blood pressures. Do you have to get UDSs? Like what does your followup look like?

[00:20:58] **Steve:** I think there's room to develop your own pattern with that and whatever you're comfortable with. I will say when I start a medication, I will follow them a little bit quicker. And as I've known them longer, if they're on a stable dose, if they're tolerating it well, then I'll see them less and less often.

[00:21:12] And I do have patients I only see once a year. I'm a big user of patient portals. And so I will have them check in. Obviously, if it's controlled substance, they're gonna have to request refills. But I think when you develop that relationship with the patient after a while, you may choose to only see them once or twice a year.

[00:21:26] And that's personal preference. Early on, what I would say is, I try to find that balance between bringing them back often enough or touching base with them often enough, but giving them a little bit of time as well. The physical things you really need to see them for a child is you want to see, are they gaining weight appropriately?

[00:21:40] That takes some time to do. So seeing them back a week after starting, you're not going to be able to make a meaningful assessment out of one weight that is a pound less or a pound more, than a week before. But three months later, if they've. Not gained any weight or if they're actually losing weight, that starts to matter.

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[00:21:55] And so I think that becomes important to check in after a while. I can't say I've seen a lot of trouble with blood pressures, but that's certainly one of those that you're going to check when they come back and make sure that they're not having any issues, especially if they're reporting any side effects that sound cardiac at all.

[00:22:09] A lot of what I will do is start a medication and then I will leverage a patient portal to have that patient check in with me, whether adult or parent of a child and tell me after a couple of weeks, how are things going? What have they noticed? What's going well? What's not? And then I'll often do some titration based on that.

[00:22:26] So if they're happy with what we started with. Obviously, I'm not going to make any change. And I may say, Hey, let's see you back in the office in a month or two then. And we'll just refill it until then and check in at the kind of two or three month mark. If they're having mild side effects, if they're having no effect at all, then I might raise the dose or we might convert from a short act to a long acting.

[00:22:44] And then again, once we have that, what I think is a steady state dose then I'll check in a couple months later, two or three months down the line. I think that's a great use of a patient portal. And you could certainly do that as a video visit to at the same time, I find a lot of these are pretty objective things. You could say, what have you noticed? What are the side effects? Are you seeing anything? And it's pretty easy to make a quick decision about something without bringing somebody in for a whole visit.

[00:23:07] **Christopher:** Do you do any follow up testing? I know a lot of adults that get UDS is like once a year or something like that. Is that something you prescribe to at least when they're on controlled medication?

[00:23:16] **Steve:** I think that's a great question. And again, part of that's going to come back to personal preference. The stimulants are controlled substances. Obviously, they need to be prescribed monthly or, potentially for 90 days. If you have a system that can do that, but it's very appropriate to check your OARRS or your local...

[00:23:31] **Christopher:** ...controlled substance database or something.

[00:23:32] **Steve:** ...controlled substance database to, to make sure that they're filling it appropriately. Tox screening is a little bit more challenging. And part of the reason is if you're going to use a tox screen, you need to know how tox screens work. It is like when we're screening people for other drugs of abuse, part of the reason you might screen a tox screen is to make sure they're not using anything else you need to know about. And if you do find that they're using something else or, and this again goes back to pre screening, you might screen them for alcohol use and other substances as well to get a sense of what they're using. So you can at least counsel them appropriately and assess whether they're an appropriate risk of patient to do that. But the key thing I'd say is methylphenidate is not on most drug screens. And so if you're going to use a tox screen and expect it to show up in the system, you may need to add that onto your tox screen, depending on where you are. And then there are certainly, false positive results, for example, bupropion can sometimes cause a false positive result for amphetamine.

[00:24:28] And so it's important to know tox screens pretty well. I don't think it's unreasonable to do a tox screen when you're starting for an adult. My personal practice is not always to get one every time or again, part of it depends on the length of the relationship I've had with the patient whether they're following normal prescribing patterns and using appropriately in and we're seeing anything that doesn't fit.

[00:24:48] So I, the key there is, I think this may be regulated by your institution, whether there's a policy that you have to screen, if you do just know the caveats of it. Methylphenidate not showing up on there,

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unless it's either added on or a special screen, if it's up to you, I think there's some room for personal choice there.

[00:25:07] The wisdom I like with tox screens is that we're not necessarily trying to catch people using things inappropriately as much as we are understanding what they're using and being able to counsel them on what other risks are taking when they do that. So I'd say keep that in mind with your use of tox screens.

[00:25:21] **Christopher:** And I think that's some of the newer discussions we've had here at OSU, especially with the new quote unquote legalization of marijuana and what we're going to do with that. So I think we have yet to see what full institutional policies. Weight may fall down on that. Back to some of the things that we see that you're monitoring for, say you're seeing excessive weight loss or poor weight gain.

[00:25:40] Is this a reason to stop or change the medication? Or are there ways that we can manage this? Can we say, hey, we're going to have you meet with our dietitian. We can put you on better diet plan because parents or teachers are saying this medication is perfect.

[00:25:55] They're doing straight A's now. Everything else, I really don't want to stop them. We found the perfect dose. We just can't get this kid to gain weight.

[00:26:02] **Steve:** Yeah, I think I guess to circle back to one other thing we didn't really highlight is that stimulants are effective.

[00:26:08] Now, they can certainly have side effects, but it's estimated that about Two thirds of people respond pretty quickly to stimulants and with some titration, about 90 percent of people respond. So it's a really high success rate. But if you look at it, you can certainly see side effects. So for example, appetite, we know that stimulants can decrease appetite.

[00:26:25] On that one, I'm going to ask you to go back and take a good history, understand how they're taking it when they're taking it. So for a kid, for example, and really adults too, we always say, make sure you get breakfast in your stomach before you put that stimulant in. If you take the stimulant before you eat breakfast or as you're eating breakfast, it may really kill that appetite and you may be more likely to see stomach aches or things like that.

[00:26:44] We do know that long acting stimulants, for example, even if you ate breakfast and take it right afterwards, sometimes that lunch appetites down a little bit, but. If when the medications wearing off, they make up for it. And I've had plenty of parents tell me, they never eat a big lunch at school.

[00:26:57] I asked him to eat a couple bites and the lunch comes home half eaten, but they eat like crazy for dinner. And their weight's okay. And all that kind of stuff. Then I think it's one of those, we let slide. It's also one of those, and we can come back to this about drug holidays, whether you use something like that.

[00:27:13] If it's other side effects, if it's, trouble sleeping, I think you reassess what you're giving, when you're giving the timing. Is it wearing off in time? I guess the three main kind of groups of side effects I see that you can think about before you give up on a medication. Is there something related to the peak dose?

[00:27:28] Is the, are you getting too high level that's bringing out a headache or a stomach ache or really more prominent symptoms? And is the formulation you're using hitting a peak that may be too high for

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them and just needs to be broadened out over time. If I gave you a huge dose of immediate release Ritalin and expected that to get you through the day.

[00:27:46] It's not going to get through the day. Plus, you're going to have kind of a big onset and a big withdrawal effect that may make you irritable or moody. So if the peak is too high, that can cause side effects. If the, and this is more of an issue with short acting ones, if the sort of withdraw, like a basic methylphenidate hits its peak and then clears the system in three to four hours.

[00:28:05] So if it spikes separately and then comes down really quick, we think we see a lot of those mood type side effects, irritability, rebound type symptoms, when it's just coming down so quickly. And again, that's where a time release medication may help you.

[00:28:17] The third category would be sort of duration side effects. That's more that can't fall asleep at night or seems to be having effects well into the evening when they're trying to do other things and wind down to get to bed. So I would say before you give up on a medication, think about is there a peak issue? Is there a withdrawal issue? Is there a duration issue?

[00:28:33] And think about the strategies for addressing the medication or make sure they have food in their stomach or can you change to a time release type medication and will that help solve the problem before you give up?

[00:28:44] **Christopher:** That sounds like really getting some more story. Everyone's a little different in trying to figure out like exactly what's going on cause it may be different from the other time you addressed the same issue. I recently went to a P I think last year and I went to ADHD talk and the expert there was also talking about making sure that maybe sometimes the insomnia we see isn't necessarily a duration effect, but actual withdrawal effect causing the insomnia and keeping that in mind. I think it's important to really to customize the treatment and do some shared decision making with the patient and possibly parents.

[00:29:12] You mentioned a little earlier about drug holidays. Can you tell me the concept of that? What is useful for is this when you're talking? Hey, don't take medicines on the weekends when you're not in school or summer vacation? Can you describe what your personal practices and what your thoughts are on that?

[00:29:27] **Steve:** Sure. Happy to. A drug holiday is essentially any time you take off the medication intentionally. So it may be a weekend, it may be a summer, it may be a holiday break. Most of the non stimulants, I think all the non stimulants do not qualify for drug holidays.

[00:29:40] So if you're using Strattera, for example, or Bupropion or Intuniv or Clonidine, those medications need to be given every day to have their full effect. So I would not take drug holidays with those. But if you are noticing that, for example, a teenager who is taking stimulants, but on weekends sleeps until noon, it may not be appropriate to take that long after medication at noon.

[00:30:01] Cause then they may have trouble getting to sleep that night. If you have a kid that despite your best efforts, just doesn't have a whole lot of appetite on their school days. Otherwise feeling fine, they're hanging in there, but you're trying to maximize the chance that they, get some good nutrition on the weekend. When you have a little bit more control over that, you may take the weekends off. Or if they don't really have anything going on in the summer, if they're high energy, but there's plenty of outlets for that and they don't really need that extra attention and focus, you might give them a break from the medication.

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[00:30:27] It doesn't necessarily make him work better. It doesn't really affect a tolerance or anything like that. So I think it really is that, parents discretion probably more than the doctor's discretion, but it is a strategy. Some people will use.

[00:30:37] **Christopher:** I definitely have the parent who's yeah, I have all summer. If I don't get them as medicines, I'm going bonkers because he can't get anything done. I can't get them to do any housework or pay attention to chores or anything like that. I definitely have those parents who say that.

[00:30:49] **Steve:** Yeah, I guess the key thing I would say is you don't need to take drug holidays if they're working and they're tolerating them well and you're not seeing any side effects that you feel like you need to make a change in the dose, it is perfectly okay to take on weekends when they're home with parents. It's perfectly okay to take during the summer or holiday breaks.

[00:31:04] **Christopher:** Any other management tips or nuances that you think our audience should know about?

[00:31:08] **Steve:** I don't know if I can give you one specific tip, but I guess the point of sort of the podcast and the talk I gave about this earlier in the year is I think it's great to have that framework. I like to teach you how to problem solve. Every patient is different, even if you've had great success with one medication, it doesn't mean that's the only medication you're ever going to use and so I feel like when I was learning about ADHD, when I was way back in residency, I really didn't have enough skills to understand, okay, if it's not working, what do you do?

[00:31:35] My gut feeling is you change a medication or can't use a stimulant, but as I've learned more about it, I think the nuances, if you take a good history, and this is like a lot of things in medicine, if you take good history, what is the problem? And, you kind of problem solve what is that a side effect is that we're not treating well enough. Is there something else going on? Is there a comorbid condition we missed? Is there something else we need to rethink about? I think if you think it through and use the framework of, all the other, tools you use in medicine to break down a diagnosis, I think it'll help you think through it logically and help you really treat the far majority of patients and as I said, if you really work on titrating these medications up to 90 percent of people respond, which is amazing. And I think anybody who's treated ADHD enough has had that moment where a parent comes back in or even a spouse comes back in and goes, Oh my God, there's so much better. They're like, doing so well in school now and they're focusing, they're paying attention and they've turned this whole different kid.

[00:32:28] **Christopher:** So it seems like your takeaway is don't be afraid of treating ADHD because even if you have to use a stimulant, it's very rewarding. Patients benefit so much. And it's rewarding as the provider doing that. Is that right?

[00:32:39] **Steve:** Absolutely. And I think the other thing I always like to say, and this is part of the reason I think I like primary care is I always feel like I'm practicing with the safety net. If I reach a point where I'm just not comfortable with things, there's somebody I can turn to. If I'm trying to treat this patient and things aren't going well, that may be the time you consider neuropsych testing or you refer them on to more of a specialist. And I do that for everything in medicine. If I am managing their cardiology problems that I reach a point where, man, this is just getting beyond my level, I pass them on. And I think that's part of the beautiful part of primary care.

[00:33:06] **Christopher:** I think that's a great thing to end our podcast on. I really had a great time talking to you, for people to go back to the first episode about diagnosis in this episode about treatment. I really feel like I learned a lot. And I hope everyone else does too. Thanks again.

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[00:33:17] **Steve:** Oh, happy to be here. Thank you.

[00:33:18] **Christopher:** And for the rest of your listeners, Thank you again for listening to another episode of Everyday Medicine, a podcast from OSU's Division of General Internal Medicine. Please consider subscribing to our feed on your favorite podcasting platform so you don't miss out.

[00:33:36] You can also get our show notes and transcripts soon from our Division web page at <http://medicine.osu.edu/GIM>. Have a good day. Bye.