

## Webinar Transcript: Recognizing and Understanding Girls with ADHD

- [Susanna] The LD@school Team is very pleased to welcome our guest speaker, Dr. Laura Gerber, who's presentation this afternoon is entitled, Recognizing and Understanding Girls with ADHD. The Ministry of Education has provided funding for the production of this webinar. Please note that the views expressed in this webinar are the views of the presenter and do not necessarily reflect the Ministry of Education nor the Learning Disabilities Association of Ontario. During the presentation today, we will be tweeting. So, if you'd like to participate in the conversation on Twitter, you can send us a tweet by using our handle @LDatSchool or the hashtag #LDwebinar. So, that takes care of our housekeeping for this afternoon. So, let's get started. Please join me in welcoming our presenter for today, Dr. Laura Gerber. Dr. Gerber has been a consultant pediatrician in Burlington Ontario since 2003. She completed medical school at McMaster University and her residency training at the children's hospital of Western Ontario and the hospital for sick children. The main focus of her consulting practice is the assessment and treatment of children and adolescents with developmental, learning, behavioral and mental health issues. Dr. Gerber is particularly passionate about ADHD. She's a dedicated advocate for the recognition and treatment of ADHD across the lifespan. She's presented to a range of audiences, including family physicians and psychiatrists, fellow pediatricians, elementary, secondary and university educators, as well as parents. She's been a speaker at the National ADHD Conference and the Annual Scientific Assembly of the Ontario College of Family Physicians. In 2017, she was invited to be featured in the documentary about adult ADHD on CBC Television's The Nature of Things with David Suzuki. She's a founding member of the steering committee of Caroline Families First, an extending pilot project which examines the impact of high fidelity wraparound care on mental health outcomes in the community. Welcome Dr. Gerber, the floor is now yours.

- [Dr. Laura Gerber] Great, thank you. So, I'm gonna continue. There we go, hold on. There's always a bit of a hoopla for me here. Hold on one second. There we go. Did I do that correctly? I think I did. Can you see my screen?

- [Susanna] Yes.

- [Dr. Laura Gerber] Okay, just checking there. So, thank you very much for inviting me to speak and it's a pleasure to be here. And I think it's a very pertinent topic to most educators and I will try not to talk too quickly though I tend to speak a bit too quickly at times. Why does that not want to go? Hold on a second. There's always something here. So, now I've got, hold on. There we go. Is that working? There we go, okay, sorry. So, I'm gonna talk about girls with ADHD and thank you Susanna for the introduction. I think it went over so, me of this stuff. So, why me? So, I'm a pediatrician, as she said and I see kids, but also, their parents. And I see lots of adolescents for anxiety and depression who turn out that they really have unrecognized ADHD. I have a unique lens because I have ADHD myself and my three kids have it. So, I live and breathe it 24/7. And I wasn't diagnosed myself until after I'd finished medical school and residency. And in retrospect, there are lots of flags that I now understand that were missed along the way. And so, basically, it's close to home for me. I have a few disclosures in terms of relationships with companies that have asked me to do talks for them. And so, here's what



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we're gonna do. We're going to quickly review the stuff that most people know about ADHD and is likely more of a review for most of you guys, then we're gonna talk about why there seems to be a bit of an epidemic or that sort of the sentiment that we often hear. I'm gonna go through and spend some time going through some of the key concepts for understanding ADHD. That aren't necessarily things you would be familiar with but might help you to identify people in your realm who have ADHD. And we're gonna talk then specifically about girls and how they present differently and why it's important to identify them as well and look more carefully than we often do. And we'll just really briefly go through so, me treatment options just as a general overview. As Susanna said, if you can ask questions to the chat group, that would be great. And then we'll cover those at the end. So, getting started here. So, I usually, when I present in person, have people put up their hands to say what do they see first? And probably the majority of people see tigers first, but some people also, see the trees first. And so, the point being that we're looking at the same picture and seeing different things. Then again, here with this picture some people see the face first and other people see the lady with the umbrella standing underneath the Eiffel tower. And so, we're looking at the same kids. We're looking at the same presentation but depending on how you're looking at things and what your knowledge baseline, you may see something different when you look from a different angle. So, I'm hoping to do that for you and help you see ADHD differently. So, here are some myths about it so, that it's not a real thing. And that it's over-treated, and that all individuals with ADHD are hyperactive. And it only affects boys that it's caused by poor parenting or conversely what we often hear is there's nothing wrong with my child. He or she is just like me because often one of the parents is affected as well. My child will grow out of it. It's only found in kids disappears in adolescents and doesn't affect adults also, completely not the case that it only matters in respect to school. And that untreated ADHD has no consequences. And hopefully all of this you will feel differently by the end of the presentation. Very common one that we hear when we see kids in the office is that my kid can't have ADHD because he can play video games for eight hours straight, no problem. So, therefore, he can clearly focus for long periods of time and therefore he doesn't have it which actually is completely not true because we very often... It's quite characteristic of kids with ADHD that they can focus on things that they're interested in for an extraordinary period of time. ADHD can only be treated by meds alone and prescribing stimulants will cause drug abuse. That's also, a common one. And we'll talk about that later, but also, not true. Hold on, sorry. Okay, really important to know is that ADHD is actually extremely genetic and highly heritable is heritable as your height actually. And so, if a kid has been diagnosed with ADHD, we should be looking pretty carefully in the parents because there's at least an 80% chance that one or the other parent has it. And not uncommonly, actually both parents ended up having it. And I think that's because people with ADHD are quirky and they tend to click. So, not uncommonly, they end up together. Also, if a parent has it, then each of their children has at least a 50% chance of inheriting it. So, it's really very genetic and we should be looking carefully for that. So, going back to just the basics, what is it? So, the stuff that's probably known to you. So, most of us know Dennis, of course he's on the list. Tornadoes, wildfires, floods, hurricanes, and Dennis. Hyperactive and constantly moving and impulsive, we had a full and frank exchange of views and then I bopped him. Unable to listen attentively. Off-task and easily distracted. So, this guy says, "Maddy, aren't you meant to be studying?" She



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says, "I think you'll find trying to put my leg behind my head is more important." And that's, I think for most people, the core symptoms that they're looking for and those are the core symptoms, but we also, know that over time, well, that there's different ways that that can present which we'll go through, but also, over time, the symptoms do change but they do persist for most people through the lifespan. So, high productivity becomes much more muted and less obvious. Impulsivity will also, change, particularly through the adolescent years. And it's really the attention and focus stuff that is most problematic for the majority of people throughout their lifespan into adulthood. Common concept or common thing we'll hear is that there's four and a half million kids labeled ADHD based on a checklist of behaviors. So, often people are worried that we're making the diagnosis based on very little information. And certainly, that does happen sometimes, but it really is not that simple. And shouldn't be that simple. This guy says, "Remember the tools are meant to facilitate our work not to make it more complex or to replace you. The most important tool is your brain." So, sorry, frog in my throat. It's important to remember that a checklist is just a checklist. So, we should be looking a broader database of information in order to come to the conclusion that a child has ADHD. And we also, need to be looking very carefully for other things that could be mimicking ADHD. So, some statistics, so, 9.4% of U.S. children have been given a diagnosis of ADHD which is an increase from about 7.8% in 2003. It's the most common, neurodevelopmental disorder of childhood. And yes, it is real, which hopefully you will feel that way at the end. I just have to mute myself for one second and cough, I apologize. Sorry about that. It's allergy season. Okay, so, very often we'll hear from parents, what's with the epidemic or the rise in ADHD? So, I think that there are many pieces to explain that, and I think it's important to briefly touch on those. So, number one, we understand it better. So, we have better scientific ways of learning about it. We have better imaging. We have a variety of tools at our disposal that simply we didn't have in the past. So, sorry, I keep thinking I do it that way. So, specifically, around that, functional MRIs are those MRIs where we can see your brain lights up in different patterns, and we can see that all kids' brains, mature from the back to the front. And that's true for kids with ADHD as well. However, their brains mature at a slower pace than the kid without ADHD. So, the impulse control stuff comes from the back of your brain predominantly and that area is about three years later to mature. So, if you think... For most kids, we expect them to be having a socially acceptable level of impulse control around age six. For the kid with ADHD, that's probably going to happen more like age nine. And the motor cortex is the middle of your brain. So, the busy-ness, the hyperactivity, the motor restlessness that comes with ADHD, that can be about five years later for that part of the brain to mature or come along. And so, a reference point for that would be grade one, we expect kids to be able to sit at a desk for fairly, considerably longer periods of time. And for a kid who has ADHD, that just may not be in the cards until they're more like grade six. And then very importantly, the frontal lobe is the front of your brain where a lot of the executive functioning stuff comes from, a lot of the attention and focus and organizational skills. And that area of the brain, not for everyone but for some kids can be up to seven years later. So, if you think around age 10, we expect kids to start doing things more independently, hand on your ski trip forms, bring home your gym clothes to wash on the weekend, what do you need to do for your science project, and kids with ADHD simply aren't wired to acquire those skills as naturally and as intuitively and on the same timeline as



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what we expect. And so, that gap can create a lot of difficulties in terms of self-esteem and their inability to meet our expectations is so, ... It's really important for us to know that and understand that so, that we can put extra scaffolding and supports in place for them, for them to acquire those skills that won't otherwise fall into place naturally. And yeah, it's also, relevant for all kids, but for kids with ADHD like that area, the executive functioning stuff is probably not going to really mature till they're in their mid, or fully mature till they're in their mid 20s by which point, most kids have done their post-secondary schooling as well. So, PET scans are the other interesting tool that we have. So, they look at the rate of sugar metabolism, glucose metabolism in the brain. And so, people with ADHD are burning more fuel in their brains than others. And so, if we, for instance, did a puzzle, so, the person who does not have ADHD is doing a puzzle and their brain is utilizing glucose only in the areas that are required for that task. Whereas the person with ADHD, they also, are you utilizing the glucose in that area but there's also, a general buzz of glucose utilization all over the place in their brain. And so, in order to get this task done, it takes them more mental energy, more fuel. So, they run out of fuel more readily. Hopefully that makes sense. It's like leaving your gas, your car on idol rather than turning it on and off. Your gas tank isn't going to last you as long. And then in addition to understanding it better, our lifestyles simply are not ADHD-friendly, so, we don't get up at 5:00 in the morning and go out and work on the fields all day and get lots of exercise and stuff. So, awake is the new sleep, nobody's getting enough sleep. Weapons of mass distraction. So, we're all on these far too much of the time and younger ages. And I'm sure that as educators you guys see that a lot as well. We consume too much of this, not enough of this. We're generally over-scheduled, overworked, rushed everywhere, and we have a lot of difficulty finding downtime. And our kids are exhausted, and we're exhausted, and everybody is increasingly anxious. I think there's a lot of concern about anxiety in general in kids but particularly in the last year, obviously with COVID but I think it was a big problem even prior to that. And so, why does that matter? So, exercise helps ADHD symptoms, fatigue, lack of sleep, worsens it and anxiety worsens it. So, all of these factors together, plus like not eating well and not taking good care of ourselves, basically make the ADHD symptoms more evident, unmask those in a way that they simply weren't in the past. So, our society highlights the weaknesses that are inherent in ADHD. So, we know that it does not just affect kids at school, certainly for some kids that is a major issue but there are lots of very successful people who have ADHD and may not have struggled significantly in their academic life. We know it affects employment status and we'll talk about that a bit later, relationships in all sorts of different ways, legal problems and risk-taking, mental health is a big one and we'll talk about that in more detail. But to me, the most important thing I think is self-esteem and when families come to see me, that's a pretty significant question that I will ask them is like what's your sense of your kids' self-esteem because if the kid feels great about themselves and it's not causing significant impairment, that's pretty unusual but that's not as big of a... Or it's not as urgent as the kid who feels really badly about himself. And that's something that we need to sort out more quickly. So, how do we know if it's ADHD? Very good question. Not always easy. We know that there are lots of things that can coexist with ADHD. And so, part of having to get assessment is to look at all of those other possibilities and decide whether they're coexisting or whether they are masquerading as ADHD. So, up to 90%, but certainly 50% of kids will have a comorbid



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condition. And 85% of adults with ADHD have at least one comorbid condition. I don't know really any adults with unrecognized ADHD who have not struggled with some sort of mental health difficulties. So, point being it doesn't exist in isolation, and we need to look for all of those different pieces. So, I'm not gonna go through this in too much detail, but just in the children and adolescent group, there's more of the oppositional ticks, conduct, disorders, anxieties, that sort of thing. And then in the adults they tend to present with more complicated diagnoses and substance use difficulties and that sort of thing. Oh, I already said this 85% of adults meet criteria for comorbid condition. Two to 4%... Oh sorry two to four times higher incidents of motor vehicle crashes than in non-ADHD people. So, as kids get to that driving age, that's super important because they're like four times more likely to have serious car accidents than their same age peers. 35% don't complete high school and there's longstanding interpersonal relationship, difficulties that come from having ADHD which we'll talk a bit more about. This is an interesting chart showing all of these outcomes. I won't read them, but all of these outcomes that are significantly more likely to occur if somebody has untreated ADHD, I should clarify that. 'Cause it doesn't actually say that on there, but I'm treated ADHD compared to the rest of the population. And an interesting one is if we look at the population of adults with obesity and we actively screen them for ADHD, 40% of people with obesity and adulthood have ADHD, which is quite interesting. And the point being that if we treat their ADHD, all of these outcomes are significantly improved, or the risk of these outcomes is significantly decreased. Really interesting for, I think parents and educators is that kids with ADHD are much more likely to start smoking. So, about 20% compared to kids who do not have ADHD. And then if they start smoking, they're at significantly higher risk of then developing other substance use difficulties, down the road. So, the red bars are kids who have ADHD who smoke, and the blue is kids who do not smoke. So, once they start smoking their risk of all of that stuff goes much, much higher. And then super important because there's this concept that treating kids for their ADHD with stimulants will turn them into drug addicts which is completely the opposite of what the studies show. So, controls versus Medicaid ADHD is not much different whereas unmedicated ADHD, very high likelihood, 75% incidents of substance use disorders. So, I think that's pretty compelling and a very important reason to actually be treating the ADHD so, that we reduce the risk of self-medicating. Okay, so, girls, so, they're not as obvious. They do not present in such classic ways as Dennis, Menace and Tasmanian. And most often they will present with the consequences of the unrecognized ADHD. So, low self-esteem anxiety and depression. That's often the way that they will initially come to attention or where somebody might hopefully think of looking for ADHD. So, they're harder to detect. They're usually older at diagnosis. They often have more subtle symptoms or like physical complaints. They often have comorbid stuff going on by the time we find them, they're more likely to have low self-esteem than boys. And they're more likely to engage in self harm which is important to know as well. This is a really fascinating article that I found. And basically, it's a Canadian study. It shows from U of T shows that one in four Canadian women with ADHD had attempted suicide. And the lifetime prevalence for suicide attempts was much higher for women with ADHD compared to without so, 24% versus 3%. And men with ADHD were also, more likely to attempt suicide than men without. But women, the increased risk was considerably more magnified. So, I think it's important to know that earlier treatment of ADHD almost normalizes the risk of ending up with



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anxiety or depression in adulthood. So, therefore, that would also, modify these numbers, but that's pretty compelling information. So, some ways that girls will present. So, parents may describe them as spacey, forgetful, clueless, messy, withdrawn, anxious, or lazy in my mind when somebody describes their kid as lazy, lazy is ADHD until proven otherwise for most of us who are in the field because children are not inherently lazy, they want to do well. So, if they are not, then there's something in their way. From teachers a pretty common statement is something along the lines of you could do so, much better if you would just apply yourself or you're not achieving to your full potential. And that's important because you may have a gifted kid who's a straight B student. And that may actually serve as a bit of a flag that they're doing well enough but there's something that's not quite jiving for them. Kids will complain, "School is boring." Or "I hate it, or I don't wanna go." They may sometimes comment that there's zoning out, particularly as they get older, they may start to notice that, and lots of kids will present with physical somatic symptoms of their underlying anxiety that they develop with school attendance. So, headaches and stomach aches and complaining of being too tired is pretty common. So, this is important too, because I think we tend to think of girls as being inattentive. And certainly, inattentive ADHD is more commonly diagnosed in girls than in boys. Boys are usually more of a combined type. Although we call it all ADHD these days as all the same umbrella. We don't really use the term add anymore but in girls it looks considerably different. So, for boys, it's often outwardly observable and get some more into trouble but girls are often much more subtle. So, it might be fidgety restlessness, bouncing their leg, picking their nails. Nail biting rather than running around and it may present his sleep difficulties. And very often people are actually not very aware of their motor restlessness. I remember once a couple of years ago doing mindfulness, meditations with my kids and we were lying down on the bed. And one of my kids said, "Would you stop wiggling your toes your toes move constantly." And I had never noticed it before, but my toes move constantly, just ever so, slightly but all day long, 24/7. And I'd never noticed that but that's the restlessness. Girls with impulsivity tend to present really quite differently and more often than a verbal impulsivity. So, they might be the Chatty Cathy who should pay attention to their work instead of chatting with their friends in class the social butterfly, the drama queen. And a lot of times their most challenging area is often social stuff, because they may be inattentive to some of the social cues, but also, will tend to react impulsively. So, that'll get them into lots of challenging social stuff, as well as put them at higher risk of self-medicating as they go through. And often they will present with concerns about their emotional dysregulation difficulties which we'll talk about a little bit later. And then the attention distractibility, I sort of alluded to this, but this is more often how they will come to attention or present with their more prominent symptoms. And I was saying to Martin before we started that very often kids will present around age five, six... Oh, sorry grade five and six, they'll start to develop anxiety. And that will mask their ADHD because they're eager to please and they're hard working and they don't wanna stand out. And so, they'll work hard to fly under the radar and then they present with anxiety, and nobody can see the ADHD because they don't cause any trouble and they're doing okay in school. And so, it's really by looking at those earlier report cards, like from JK to say grade three, four, where you may be able to pick out comments that are more suggestive of the underlying ADHD anxiety. So, we already said this struggling more with anxiety in general, particularly for girls with ADHD, it's pretty much



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universal. And it's one of the ways that they'll cope I think is by being anxious and working extra hard to compensate, they will eventually often de-compensate and become more overwhelmed. And that's where their ADHD deficits may become more prominent. And I've already said that last point. Social media is particularly problematic for girls with ADHD, partly because they have low self-esteem to begin with. And that they're going to really struggle to meet those societal expectations for girls to be good and behave well and be organized and put together. And so, a kid with or girl with ADHD, it may really exacerbate those feelings of inadequacy with the social media streams that are coming at them continuously. Girls with high IQ are probably the hardest to diagnose like I said, because they don't necessarily have academic challenges that would flag, but if it's a kid who used to have straight As in grade one, and then by grade four is getting straight Bs and by grade eight is getting straight Cs. And by high school is struggling to succeed in the applied courses. Then that should be a flag that that kid is not meeting their potential, but it kind of evolves over time. And so, sometimes that's difficult pick up. Often, they present with psychiatric stuff and they're more socially awkward and struggling more that way. And they're also, more likely to have some OCD like rituals which I'll get to a little bit later again. So, why is this matter? So, it's really important on numerous levels but recognizing girls with that hidden ADHD is important so, that we can support their wellbeing in terms of self-esteem, socially and just their relationships with family members. Academically we wanna be able to offer them appropriate accommodations in order for them to be more successful. And I think just recognizing that their brains are not maturing at the same pace and recognizing the deficits that they have can lead people around them to have more empathy and recognize that they have lagging skills rather than being inherently lazy or unmotivated. ADHD is a disorder of initiation, not of motivation. So, that's important as well. Okay, so, again, how do we know? Okay, so, this is the area I like to talk about most. So, this is the stuff that is not well-represented on our questionnaires, our snap questionnaires, or Connor's questioners or whatever you've been asked to fill out which I know everyone is familiar with. This stuff is the more current understanding of ADHD that takes about like 20 years to kind of filter into our actual current questionnaire. So, I'm gonna go through some core concepts that I will describe in some detail, I'll use some personal anecdotes just to illustrate. 'Cause I think that sometimes examples can be useful. And my hope is that after we go through this stuff that you will be able to pick up and notice things in your students that will make you think about the possibility of unrecognized ADHD more often because you'll have a better understanding of it. So, we're gonna talk about executive functioning in some detail and specifically emotional dysregulation, cognitive flexibility, and working memory. We'll talk about slow processing speed, distractibility, and cognitive fatigue. So, executive functioning is a popular term and I think many people do not really understand what it is. So, executive functioning is the parts of your brain that work together coordinate to help you fine tune how you're doing things in order to function better in the world which sounds all very easy, but it's actually very complex. So, there are different domains. It comes predominantly from the front of your brain that area that is the latest to mature. And basically, there's the behavioral aspects of it. So, getting down to tasks without procrastinating, monitoring yourself, impulse control, controlling your emotions and then what we call higher order thinking skills. So, planning and prioritizing organization skills, including time management, the ability to be cognitively flexible



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and working memory which we're gonna spend some time on in a little bit. So, these are all executive functioning domains and people with ADHD have very significant difficulty acquiring these skills. It's like the conductor of the orchestra if you will. This is how I often explain it to people where you've got all the instruments can play well. But if your conductor is not on the ball then it's not going to sound good. Or similarly, the air traffic controller at the airport you may have everything else perfect. But if the air traffic controller in charge of it all doesn't know what he's doing, you're gonna have problems. So, for girls, they enter puberty earlier than boys. They tend to be more anxious than boys and they will often as a result, compensate for longer. And then that contributes to the later diagnosis. Whereas boys often not all the time but often are not quite as bothered by their executive functioning troubles. And their moms are very often working hard to compensate for them. So, they may only show academic problems when their executive functioning demands increase a lot as they get older into higher grades. And we've already talked about co-morbidities. So, emotional dysregulation is a really important thing to know about ADHD, which people mostly do not. So, people with ADHD are more emotional creatures. So, that might mean cry at the drop of a hat, sensitive take things personally, but also, angry, irritable short fused and all of the above, maybe in an hour. So, we have sort of... There's a bit of a volatility to those emotions where other people may be having an emotion range here to here. We have an emotion range here to here. So, if it's a good emotion, great if it's a bad emotion, it's bigger and worse than everybody else's. And we all have to learn how to regulate our emotions but when those feelings are bigger, and we tend to react impulsively then before we can stop and think we've sat or done something that has then not gone well. And so, that emotional roller coaster of big feelings and the reactions to that, it causes a great deal of difficulty in kids with ADHD often more so, than like the core symptoms. Often school it'll present as low frustration tolerance. And with girls that often be the oppositional symptoms and when hit puberty and girls are difficult to begin with those years are harder for kids with ADHD, self-harming behaviors, maybe their response to those big emotions and girls are just more generally emotionally volatile through puberty and estrogen may play a role with that as well. And it's interesting 'cause very often when a teenage girl is diagnosed with ADHD, everybody is quite gobsmacked by that. They didn't see that coming at all. So, sometimes it's a tough diagnosis because they just had no suspicion of it prior. So, causes lots of troubles in the impulsivity the low self-esteem that results, the problems with relationships, whether that's your teachers your peers, your parents, your siblings, kids will often because they know they don't manage their emotions well they'll often developing anxiety secondary to that. They may develop fear of abandonment because relationships have not gone well and friends who have ditched them, that sort of thing. It can make it difficult to problem solve or learn how to problem solve because their emotions get in the way a very often, very hard on themselves. And probably one of the biggest things is the increased risk events self-medicating in order to numb some of that. Poor cognitive flexibility is the other thing that is, I think more impairing for a lot of people than the core symptoms. So, people that HD have more difficulty, mentally shifting gears. So, that might mean that they can't transition well between classes or preferred activities to non-preferred activities. We tend to be just more mentally rigid and inflexible but the way we think about things about the way we do things and that can manifest in so, many different ways. So, it might be I'm going to have a giant meltdown



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because my socks don't feel right and I'm not going to leave the house until my socks feel right. And if somebody tries to get me to just accept the socks forget it. Kids will get really stuck on fare or perceived injustice. So, you know he got two jellybeans I only got one it's not fair. And you're like, "It's just a jellybean, let it go." But they can't. And two weeks later they're bringing up the jellybean again and you're like, "Oh my gosh, it was a jellybean." But really it was unfair that's what they're stuck on. Letting go of disappointment, that sort of thing can be really difficult or holding grudges, but it also, can be a good thing because they can hyper focus on stuff that they're passionate about or really interested in and to the exclusion of everything else. So, I like Legos, so, when I do Lego, you could give me like a whole pirate ship in eight hours and I'd be delighted and I could do that for eight hours straight, no problem. But if you try to stop me five pages from the end, not gonna be happy about that. So, shifting kids off of their video games for instance, your five minutes are up, well if they can finish that level, you're more likely to not end up in a fight than if they have a limit that somewhat arbitrary in terms of their completing things. And also, people can get stuck on things that are a distraction to them which I'll talk for a little bit later as well. But just that idea of sticky, rigid, and flexibility in the thinking is really quite characteristic for many, many people with ADHD. No, I just said all of that. There you go. Just that a lot. And the hyper-focus piece is really, really common. So, just an example here. So, if I have to do my taxes, horrible, horrible and I am so, not interested it's the most mind-numbing thing. So, my level of arousal or interest is very low and my performance is abysmal. And every year I tell myself, "Oh, this year I'm gonna do my taxes. I'm gonna keep my spreadsheet up month to month." Which is complete crock I will not do that, which I now recognize why because it's boring and I need to have enough adrenaline on board in order to do it. And I need a deadline. So, a bit of a deadline junkie, but then give me like I said, the Lego and I'm right there, I'm at peak performance. So, for people with ADHD, the difficulty really is the ability to attend to those things that are less interesting which is hard for everyone, but especially hard for somebody with ADHD. Okay, working memory is so, hugely important in the classroom. And I think very often, not something that even educators are familiar with, at least in my experience. So, working memory, people with ADHD have poor working memory and poor process or slow processing speed those are quite characteristic findings on a psych ed assessment. There are two kinds of working memory. So, working memory is basically your ability to hold things in your mind while you use them and manipulate them. So, it's like the post-it notes in your brain, if you will. And there's two types, there's auditory working memory. So, things you hear versus things you see, so, visual working memory. So, for instance, if you tell me a phone number and you verbally tell me a phone number, I cannot hold those 10 numbers long enough to write them down. So, I'll be like, "Wait, wait, wait, 905, okay, wait, wait, 637." But if you show it to me, I might hold that a little bit longer but still is gonna be a big problem. So, in the classroom we rely very heavily on auditory working memory. So, for instructions, that sort of thing. So, the kid with poor working memory, the teachers at the... Or the kids were at the carpet the teacher gives three instructions verbally, kid is supposed to go back to his desk. By the time he's got back to the desk, it's just evaporated from his mind. He has no idea what he's supposed to be doing. 'Cause he couldn't hold onto it long enough, but he already gets in trouble regularly for not paying attention. And so, he doesn't want to put up his hand 'cause he's gonna get in trouble. And so,



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he can't complete the three things he was asked to do, but not because he potentially couldn't do them, but because he couldn't remember them long enough to do them. So, that's an example of working memory difficulties. Whereas if they were written on the board, he might be able to do it without any problem or if they were on a sticky note that was placed on his desk, that sort of thing. And actually, so, like if you only have that many post-it notes you might be able to manage that. If you have this many post-it notes and your brain is that much more clutter, and there's so, many things that you have to be holding on to and it's sunny outside and you'd rather not be doing that 'cause the stuff on the post-it notes is really boring. Then you're really gonna be in a pickle 'cause you're saturated and you're not interested. And so, studies show that actually working memory is a more powerful predictor of learning than your IQ. So, if you could be like a genius but if you have poor working memory it's going to be infinitely more difficult for you to demonstrate the geniusness. So, it can present us for getting instructions, trouble holding onto auditory stuff, cognitive fatigue, just because you've got so, much stuff and you can't hold on to it. And often people over-prepare in the hopes of holding onto things long enough. Learning by copying notes over and over and losing your train of thought. One of my kids, my oldest when she was in grade three, finally somebody started to identify that she had trouble with her working memory. And I knew she had ADHD from when she was a kid for like SK because I was having difficulty retaining information. She'd need much more repetition before like say the word cat. She could decode the word cat. She turned the page. There it is again; she couldn't remember it 10 seconds later she'd need more repetition. So, anyways, that's pretty characteristic of poor working memory. But in grade three, start to do those math books where there's graphs, the math makes sense book and there's graphs on this page. And then there's questions on this page. And so, you have to read the question on this page, look at the graph and then hold onto the answer, move back to this page, see where the answer goes which really is measuring your working memory more so, than whether or not you understand a graph. But anyways, so, I asked my daughter she was having trouble with this. And I said like "What's going on there in math class?" She's like, "It's like I have all these stickers, but they don't have enough stick." And I was like, "Yep, that's it, that's it. 'Cause you just need way more repetition or it's just harder to hold onto those things." This is what these are what my notes like in medical school. So, this would be like the sixth or seventh distillation of something. So, I'd read the textbook and summarize and summarize and summarize and re summarize and distill it down in the hopes of it going in eventually. And so, that's all very fine and good but very time consuming, but much more effective than just reading the notes over and over. So, one of my problems with not having textbooks in our digital age is that it's hard to do, studying like this. Anyway, so, I ended up feeling much like this and I'm cognizant that I'm going to run out of time, and I could talk for three hours. So, problem, everybody, whether you have poor working memory or not, everyone's working memory is worsened when they're tired or when they're anxious. So, if you start out with great working memory, good, you might still be able to function. If you have ADHD, say, start with working memory at the 10th percentile, say you're on meds. They bring you up to functioning at the average but you're anxious now you're down to the 30th, you're tired now you're down to the 10th. And so, it really increases the impairment from your ADHD or almost like erases the benefits of meds. Hopefully that makes sense. So, we're processing speed. You can pick this up in conversation with kids or just



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listening to people. It's kind of that pregnant pause. You're talking to somebody, and you ask them a question and there's this pregnant pause and you're like, "Hello, hello. Did you hear me? Can't tell if you heard me, are you thinking? Do you not know the answer? Did you not understand the question?" And then finally it comes. That's poor processing speed. So, sometimes that long pause taking longer to formulate thoughts, cognitive fatigue because it's more difficult to process information at speed is coming at you slower readers, more difficulty with reading comprehension, difficulty with multiple choice tests, which I hated. But anyways, you can recognize those kids where you can tell they're just not processing things at the same speed or they have to stop mid-sentence and formulate the second half of their sentence, for instance. So, also, very common with kids with ADHD, multiple choice tests, I hated them. So, which of the blow makes you confused all of the above? Those below the blow, those above the blow, those above the above, all of the none. If you ask somebody with poor working memory what is eight plus six takeaway two, fine. If you bury it in a whole paragraph of gobbly goop, Sally with her red apples. And she goes to the store with the purple backpack, blah, blah, blah. And you have to actually pick out what they're asking you and you're a slower reader to begin with and then you have to hold it in your working memory. By the time you get to ABC, forgot what the question was. And you got to go back and start again. And so, that may have nothing to do with whether you actually know the material, but you will start to panic because everybody else is handing in their tests early and you're only halfway through. And so, that speaks to the importance of extra time for tests. Distractibility, so, there's invisible symptoms. Okay, I'm gonna tell an anecdote and get really cutting it short. Okay, I'm gonna tell an anecdote that I think is helpful. So, years ago, I'm going to my recertification course at the hospital for like a resuscitation certification stuff. And so, all of the pediatricians are sitting around this conference room where we're going to be practicing on all the dummies, et cetera. And I walk into the hospital and realized, "Oh, oh, I didn't take my meds. This isn't gonna be good." So, I sit down and the first thing we're watching this video of the heart and stroke guy talk about CPR and stuff. Well, his eyebrows are so, animated that I cannot pay attention to what he is saying because I'm so, distracted by his eyebrows. And then he's done, and the instructor gets up and she's got a clock behind her head with a red second hand. So, like visually I'm totally distracted by both of these things. And then after a while she's talking and I realized that one of the dummies is breathing, incredibly quietly but it is all I can hear. So, it's like so, quiet anyway. So, after 10 minutes I realized I'm not gonna learn anything. I can't do this. And so, I put up my hand, I say, "Excuse me, could you please turn off the dummy." And everyone around me laughs because they think it's so, funny that I would think that this dummy is breathing because of course it's not because they can't hear it. And I'm like, "No, no, the dummy's breathing." So, she comes around, sure enough, the dummies breathing. And for me it was so, debilitating that I'd heard this, and I gotten stuck on it. And everybody on either side of me or across from me, didn't even hear it. So, sometimes what we think should not be distracting maybe incredibly distracting to somebody else. I've had kids who have failed exams because of the buzz of the fluorescent light above their head. So, just to say if you were to fill out a snap questionnaire, you may not see that that's what's going on, but that may be a huge barrier. Hopefully that makes sense. Cognitive fatigue really relates to the increased brain energy, and it will present in so, many different ways, just being done at the end of the day,



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headaches are commonly triggered, just the fatigue that comes from getting through a day of school. Particularly if your ADHD is not being treated and processing speed and working memory get worse as you get more tired, as we've said. So, ADHD makes kids anxious and often affects their learning. And so, very often you do have a lot of difficulty figuring out what's what and teasing things out, but they commonly coexist and low self-esteem as I said earlier, probably my biggest concern. And okay, so, treatment. Really quick treatment. So, best outcomes are when we do all of the above. So, we want to not just do medication not just do behavioral management, not just teach executive functioning skills, and take care of our bodies and get enough sleep, ideally all of the above is associated with the best outcomes. So, very often people talk about like, well meds aren't really... We'll just watch and wait. It's not really bad enough to warrant meds. Medications when somebody is on the right med can make a 10 IQ point difference in their performance on a psych ed assessment. So, that's really important. And earlier treatment actually normalizes the risk of anxiety depression adulthood which I mentioned earlier. And we wouldn't tell a kid who can't see the blackboard not to wear his glasses or to get glasses that were only half the strength that he needed. These are just a couple of examples of patients that I had. You can look at them later when you look at slides, but basically the day before meds and day one of the meds. So, the very next day, that was the difference in his printing and this kid as well. So, couldn't really make sense of it. And then all my seeds have sprouted. They have grown roots, sorry, that was day six. So, these are examples parents brought to the office. So, stimulants, there are two families of stimulants, Ritalin, Dexedrine. Within each family we have once a day versions of them because the original versions only last for four hours and have some difficulties associated with them. So, we now have once a day versions that last anywhere from eight hours to 14 hours, you take them in the morning. They last through the day, they wear off. They do not cause addiction; every day is a new day. There's no associated withdrawal if they don't take them. And we can usually find an effective dose quite quickly because there's no accumulation day to day. It's like, this is today. It's gonna be the same tomorrow. And then we adjust the dose and I'm sure as educators, you've all seen that process. But all of the meds are effective. All five of these and the ones we choose depend on a variety of factors, but often you need to try a couple before you find the best fit but for most kids, we can find the best fit or find a good fit. That makes a huge difference in their quality of life. And also, it is not just about meds. So, exercise helps anxiety and fatigue makes it worse and cheesy, but true pills don't give skills. So, ADHD coaches are increasingly available, often not covered, but very, very helpful, and really, they teach executive functioning skills but all the stuff we already talked about in terms of taking care of your body is important. It's really important for kids to understand their ADHD and to revisit that periodically over time as they develop in their cognitive abilities to understand it improves. We need to help them with the social skills and emotional regulation, self-regulation skills as well as often, like do CBT or anxiety groups to help kids with the associated mental health stuff. And I'm a huge fan of mindfulness, although I'm not great at doing it regularly myself, but I am a huge fan of it. And if anyone has access to courses in mindfulness, they're fabulous. And I'm delighted to see that schools are teaching mindfulness to kids because it's very powerful. CADDRA is the ADHD resource alliance, and it has some excellent resources. So, their website is [caddra.ca](http://caddra.ca). And this is a list of one of the examples of different accommodations in different environments which is



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really helpful. And take-home messages. So, there are many negative outcomes associated with it, especially mental health self-esteem. We need to look carefully for it, especially in girls. Girls who present with psychiatric diagnoses should be screened and we shouldn't rely just on checklists. We should look for more general impairment in the other areas that we covered. And it's really important to look at the earlier years. So, like looking for those early report cards before the mental health stuff became an issue. Screening for learning disabilities, and really importantly that treatment really dramatically improves outcomes. So, if you take those meds and you don't have ADHD it might help you stay up and study tonight, but it is not going to change your life. If it changes the quality of life, then that's profound and we can significantly improve long-term outcomes. So, this is my little motto that I like. I have it on my desk at work. I get up every morning determined to change the world and have one hell of a good time. Sometimes this makes planning my day difficult. Okay if there are questions, I know I have really cut it tight but if there are questions, I'd be happy to answer them. Thank you for joining us and thank you for inviting me.

- [Susanna] All right. Well, thank you so, much for that informative and info dump of a presentation. I love it. So, we do have time for a few questions. I'm gonna keep us a little bit late. If you do have to leave for something, feel free to go. The webinar recording will be available soon. So, just jumping into the questions. First one, I think we've got a bit of a fan of yours here. Where does someone find someone like you with this specialty in ADHD?

- [Dr. Laura Gerber] That is a very good question. Not necessarily an easy question but I think it really depends on where you live, the CADAC is the advocacy group. They, I think have like listings of people who are comfortable with ADHD but unfortunately not all clinicians have the same level of expertise or comfort. So, it is not an easy question to answer. And also, CADDRA, I believe has... I think both of them have people listed in different areas, but because obviously Ontario is big, it's probably looking Googling and that sort of thing. And asking on Facebook, if there are people who are experts or have expertise in your particular area, definitely in the GTA, there's more in bigger centers but it's not an easy question, unfortunately.

- [Susanna] Understandably, yes. So, you talked a lot about how anxiety can mask ADHD and you're noticing the the female students that have this anxiety and maybe missing out on their ADHD diagnosis but when it comes to medication, is there one that takes precedence over the other? Should you medicate the ADHD first or the anxiety first?

- [Dr. Laura Gerber] That's actually a great question. And we started looking at it individually. I think that in general the philosophy is we will treat what is most impairing. However often, because they present with anxiety on first pass the anxiety might be the most impairing thing but treating the ADHD, if that is what's driving the anxiety predominantly, ADHD is much faster and easier to treat when it comes to medications, we can usually find something helpful very quickly. So, often I will choose to treat the ADHD if I feel that that is a significant driver of the anxiety but in general, it's treat the most impairing thing first. And for some kids, the anxiety might be so, impairing they can't walk through the school doors. So, that may be a kid where



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we have to bring things down to a more manageable level with anxiety meds first. Often kids end up with treating both with meds, especially if they're older and they're more complex in terms of their interplay of their other issues. So, both are fair game. I tend to treat the ADHD first if I can and then see what happens with the anxiety.

- [Susanna] And you mentioned you showed those examples of one day after medication, six days after medication what's the standard timeframe to start seeing effects?

- [Dr. Laura Gerber] So, we always or we should always start low and go slow because we don't know how sensitive one kid might be to another like two medications compared to another kid. And so, usually a week at each dose is adequate for kids to get used to it. And it's a matter of titrating to find the dose that is effective without encountering significant side effects. The main of those being that they have less appetite at lunchtime. So, in a smaller kid we might hit it out of the park day one because that dose will look the same each day. And so, whereas in an adolescent we're likely to be going to dose three or four before we're going to get to the top of the hill. But usually within a couple of weeks we can see that we're on the right track but in younger kids, sometimes it's like life-changing instantly, which probably educators of younger kids have probably seen that. But that's simply because the first dose happens to be the right one sometimes.

- [Susanna] Okay. Just to bring it back to the educator perspective, what tips do you have for educators who are trying to broach this topic with parents? That they've noticed that one of their students is maybe falling behind or showing some red flags, how do you explain that to parents?

- [Dr. Laura Gerber] Okay, so, it depends on whether or not the parents are likely to be resistant. If you have parents that aren't going to hear that information very well then obviously it's important to be, I don't know more subtle, I guess but I think for most people, the self-esteem is what really speaks to them. So, if I have parents were like, I'm trying to bring them on board with the idea of meds because I really feel their kid is suffering and they're really resistant to it. Usually, it's the self-esteem that is gonna be the most compelling piece of information. So, whether the kid is struggling academically, socially. If the kid doesn't feel good about themselves that's usually what's leads to parents in my experience. I hope that makes sense.

- [Susanna] Yeah, in a similar vein we have one participant whose daughter was with ADHD but isn't willing to take the meds. She's having a difficult time accepting the diagnosis. And doesn't like the idea of being on medication. How would you, I suppose, support her, and talk to her to show her that this is an important thing to do and it's a part of taking care of yourself?

- [Dr. Laura Gerber] And so, that's where I think it's important to understand those extra things that we talked about. So, the cognitive flexibility and the emotional regulation stuff, because if we tell a kid like, "It's gonna help you focus in school." They may not care about that. So, it's



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really important to frame the symptoms in a way that are relevant and important to the kid and to make sure that they understand their ADHD is probably the first thing. So, just that education point and that can be really helpful. Also, normalizing the idea of meds. So, just being matter of fact about meds in general I know so-and-so, takes them further asthma, so, and so, takes them for their anxiety, whatever, and that meds are not necessarily something to be ashamed of or for it to be a problem. But the other piece is just, this is what's gonna help. We can probably find that out pretty quickly. If we give it a try, it's not a lifelong commitment to it. So, giving meds a try for a month or so, it does not mean you have to take them for the rest of your life, but if you give them a try and they make a really big difference, wouldn't that be important to find out, and then you can make a decision based on both pieces of information. So, I think sometimes just focusing on that short term trial aspect of things, doesn't seem quite so, daunting. And the other thing is kids, sometimes their reluctance for meds is because they think they're going to have to swallow like a pill. And the reality is Concerta is the only one that actually has to be swallowed. The rest of them can be either sprinkled, chewed, or dissolved. So, there are other options available if the actual swallowing of the meds is cognitively barrier for the kid.

- [Susanna] Great. So, I think we've got time for one last question. We'll squeeze it in here. What tips do you have for parents who are trying to get accommodations for their children at school to address this very broad areas of deficit? The hardest question?

- [Dr. Laura Gerber] Well, it's hard in the sense that there's variation between school boards in terms of what accommodations they are willing to provide formally informally, that sort of thing. It depends on whether the kid has a co-existing learning disability or that sort of thing. I think that the asking for writing tests in a quieter environment and having extra time is probably the most universal stuff but that CADDRA website at the end there with the list of educational accommodations, that's a pretty solid list of things that are fair game to ask for from the school. But in my experience, there's some variability in terms of the school's willingness. Also, think that recognizing if the kid has poor working memory, like I saw Kelly Viola asked me a question on the chat group there of like what test formats are better than multiple choice? And exploring what formats are most accessible or easiest for the kid to manage would be important. So, not everybody has trouble with multiple choice tests. Some kids love them. And if they're not too anxious they may do fine with that. Other kids would do much better if you tested them orally or if their answers were scribed. I think if they have trouble with things like multiple choice tests, having extra time makes all the difference. If you don't know your stuff having extra time is not gonna help you, but if you know your stuff and you just can't regurgitate it in the time you have that can make all the difference in how you do. So, really exploring the testing formats that work best for the kid and having some flexibility around that because ultimately, it's the assessment piece that really is the most important piece, I think to figure out from an accommodations point of view apart from like the regular ones and sitting at the front of the class, might be great for some kids. It might be a huge problem for other kids because they're so, anxious about being singled out. So, I think taking a

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list of possible accommodations such as from the CADDRA website and then trying to figure out what would be the most helpful for your particular kid is a good starting point.

- [Susanna] Yeah, that's great. Well, that is all the time we have for today. So, we're gonna end the webinar at this time but if you have more questions for Dr. Gerber or LD@school in general, we do try to answer all questions. So, you can either email us at [info@LDatSchool.ca](mailto:info@LDatSchool.ca) or use our hashtag #LDwebinar on Twitter. And we will endeavor to get every question answered. And we're pleased to announce that we will be holding the Educators' Institute on August 17th and 18th this year. It will be a fully virtual presentation conference. It will include two keynote addresses, four interactive workshops, live Q&A, and lots of opportunities to learn. So, we hope that all of you will be able to join us as school boards have been notified about the tickets which are luckily this year completely free to educators in Ontario. So, if you are interested in attending, contact your school board, and see if they have tickets left for you, and if not, we will be announcing shortly how to get on a wait list. So, that is all we have time for today. And on behalf of the LD@school Team, I'd once again, like to thank Dr. Laura Gerber for her presentation, and thank all of our participants for being here for taking the time to learn. Please remember that we'll be sending you all the slides, a short survey and the feedback of the survey really helps us plan what we'll be presenting to you as webinars next year. So, if you do have the time to finish them, we would really, really appreciate it. We will be sending a link to this webinar recording as well in approximately three weeks, once it's being transcribed and close captioned for accessibility. So, look out for that email as well. Thank you again and enjoy the rest of your day.

- [Dr. Laura Gerber] Thank you.

