How to Use ADHD Medication Effectively

Every child's ADHD symptoms are different.

The most recent *Practice Parameters* update on attention deficit disorder (ADHD or ADD) from the American Academy of Child and Adolescent Psychiatry (AACAP) recommends medication as primary therapy for ADHD because it shows lasting benefits over behaviour treatment. In other words, ADHD medication works.

1:Facts About Medication and the alternatives.

Medication is the primary treatment of choice for ADHD. It is not the treatment of last resort when a person has tried everything else they can think of. Or at least it shouldn't be — a medical condition including uncontrolled seizures, untreated cardiovascular disease, or an unmanaged mood disorder. However, medication is the treatment of choice once these conditions are under control.

This is not to say that alternative therapies and behaviour management techniques can't help or that coaching isn't valuable. Those strategies offer non-specific benefits. Anyone – with or without ADHD – would do better in a structured, predictable environment than they would in a random, chaotic one. Yet the AACAP reviewed 82 studies that treated ADHD without medication, and none could demonstrate a detectable, lasting benefit on the core symptoms of ADHD: inattention, impulsivity, and hyper-arousal.

Effective safe ADHD treatment needs an ADHD professional expert.

2: Methylphenidate and Amphetamine(Ritalin, Concerta, Neucon OROS or Vyvanse)

There are only two registered stimulants, methylphenidate and amphetamine. There is no evidence that one is better than the other. So how do we know which medication to prescribe? One of the things that best informs the decision is a statistical calculation called effect size. It allows physicians to compare clinical experience and research done at different times, in different places. Effect size combines this information into a ratio that indicates how well this particular treatment works compared to all the others we might have tried.

Most medications have an effect size between 0.4 and 1.0 (robust effectiveness). The effect size of stimulant medications in research is pretty close to 1.95, and in research, again, the dose is usually not fine-tuned to the individual. When the stimulants are fine-tuned in dose-optimisation studies, they are at 1.7 or above.

The side effect profiles are the same. Nothing can predict who will respond better to which medication, but most people have a preference for one. Which molecule works best does not appear to run in families (e.g., if a child or sibling does well on methylphenidate, it doesn't mean a relative is more likely to respond to methylphenidate.) Children, unfortunately, occasionally just have to try both options and see which is more effective. In South Africa, the dosages of Vyvanse are limited to 30,50 and 70mg and therefore exclude younger children from trialling this alternative stimulant medication.

I have patients rate which medication they feel is best on a scale of one to ten. One is a nasty experience with no benefits and lots of side effects. Ten is the best result. Anything six or below is unacceptable, but the goal is between eight and ten.

It doesn't make sense to have multiple trials of different kinds of methylphenidate or amphetamine. One trial of the best medication of each kind is enough to determine which will work best for the patient.

3: Choose the Smoothest Formulation

Extended-release formulations are preferred because people with ADHD generally have a poor sense of time. 85% of adults and 95% of late adolescents with ADHD don't own a watch. It's much more convenient and more accessible for them to remember to take one pill that releases medication throughout the day than taking three pills throughout the day. Children at school benefit by not going to a school nurse or relying on a teacher to administer medication. Taking a "top-up dose at school may stigmatise a child who "needs medication" to learn!

Additionally, extended-release medications allow for privacy and confidentiality for kids who might otherwise have to take a second dose at school. In addition, patients report a more consistent, stable benefit: Extended-release formulations smooth out the rebound and the sudden drop off in medication levels that can make people weepy or irritable when taking an immediate-release formulation.

When stimulant medications are abused, 95% of the time, it's the immediate-release format; it's just one more reason to use extended-release.

4: Tailor the Dose to the Individual child

No test can predict what dose will give the optimal level of benefits with no side effects. Every patient's dose is determined by trial and error.

Genetic testing to measure alleles that metabolise a medication cannot predict the dose a person will need. Many paediatricians are trained to give a certain number of milligrams per kilogram of a patient's body mass. Still, there is no evidence that dose is affected by the size, age, gender, scale scores, or severity of impairment.

Here is what *does* determine dose:

- How it's absorbed by the GI tract (this constantly changes for kids under 16, so meds should be adjusted depending on your child's individual growth. Therefore follow up visits are essential to maintain practical benefit to your child.
- That molecule effectively crosses the blood-brain barrier (from the blood into the brain).
- The rate at which medications are metabolised or eliminated in urine.
- Vitamin C and citric acid block the absorption of medication – so they shouldn't be taken with juice or soft drinks.

Think about ADHD medications as you would getting the correct prescription for eyeglasses. Eyeglasses cannot be exchanged between others needing glasses. You and I cannot exchange glasses. We each need our prescription, the one that's right for us. The notion of high-dose prescription glasses versus low-dose is pretty nonsensical. We want the correct dose for us, and when we have the right prescription for us as unique individuals, we see 20/20, virtually without side effects. ADHD medication needs to be uniquely tailored to your child. Don't be influenced by " car park consultations" with other parents' options on your child's ideal medication and dose.

5: How to Recognize the Wrong Dose

The dosage range approved covers only about half of all people. Children, adolescents, and adults optimise at doses lower than the lowest. As many as 40% of people optimise at doses higher than those studied and approved.

Doctors have to stop looking at dosing from a high vs low dose perspective and focus on fine-tuning the dose to your child, not the average child.

Where Dosing Goes Wrong: Parents expect their child to feel stimulated or different somehow.

The Rule: The suitable molecule at the right dose should return a person to normative levels of functioning, not to some artificial "X-Men" state, with superpowers and without side effects.

If a person feels different, the dose is too high or too low. When the dose is incorrect, hyperactive kids tend to slow down and become "withdrawn", known as **ZOMBIE SYNDROME**. Other kids get stimulated with the wrong dose, called the **STARBUCKS SYNDROME**. If a patient is experiencing personality changes or feels revved up or slowed down, the dose is typically too high and needs to be decreased. My goal is not to give the highest dose that your child can tolerate but rather the lowest dose that normalises symptoms. Research shows that this "highest dose" is too high; the optimum is typically at least two dosage strengths weaker than this dose.

6: Working together to Fine-Tune the medication.

The goal is to fine-tune the medication according to the target symptom response. The aim of medication is to impairments of ADHD. Remember, your child has always had ADHD. The way they are is usual. As a parent, you may have no idea what is possible with medications, so it's essential to know what to look for, what will change, what won't change, and what your child gets from taking it.

From a parent's perspective, a helpful exercise is to list the things about ADHD that you want to get rid of that you don't like. There are many ADHD characteristics that people do like — the cleverness, the problem-solving, the creativity, the wacky, zany sense of humour — and the nice thing is, all of those things stay when medication gets rid of the things that a person doesn't like. What is it about ADHD that bothers you the most? The impairments that respond to medication are procrastination, distraction, finding it hard to stick with tedious tasks, impatience, impulsivity, and restlessness. Symptoms that are not as affected by medication include disorganisation, argumentativeness, and oppositional behaviour.

Stimulant medications, except Concerta, are influential within one hour – including all of the benefits and all of the side effects. There are no late-appearing side effects. Stimulants are fast-acting, so we could change the dose every day if we wanted to and the circumstance required a change. Children and some adolescents who cannot communicate the effects of medication need a week between dosage adjustments. In these cases, if you have to choose one person to give feedback, pick the child's teacher. She knows what typical grade-specific behaviour looks like and can help evaluate your child who is too young to report how the medication works.

7: Find the Lowest Possible Dose

My goal is to fine-tune to the lowest dose possible. We will, "Look at your target symptoms. Each time, when we raise the dose, you should see a clear, dramatic improvement in all your target symptoms and no side effects other than a mild, transient loss of appetite." So long as you see things getting better and better, we can keep increasing the dose without side effects ONLY IF your child NEEDS a dose increase.

At some point, though, when we may raise the dose and your child, or you will say, "There weren't any further improvements. Every other time we raised the dose, I could see improvement. This time, this dose and the previous dose seem the same." At that point, the previous dose is the lowest dose that gives your child 100% of what that medication offers. If your child is over 16, that dose should not need frequent adjustment.

Tolerance is **very rare** to the **benefits** of these medications; however, tolerance develops **very quickly** to their **side effects.**

8: Don’t Increase the Dose to Increase the Duration of Medication.

An increase in the dose will not increase the duration of the medication. We need to accept whatever the duration of action is at your child’s optimal stimulant dose. Increases past that will often tip your child past the “sweet spot” dose to the point where side effects are experienced. The increase in how long it lasts is minimal.

Remember that even though extended-release is marketed as once-a-day or 24-hours, the most extended duration is 10-11. Most times, medical aids will only cover one extended-release dose per day, so to have late afternoon and evening coverage, an immediate-release format for the second dose is prescribed.

9: A written report with dose changes at each consultation

Write everything down related to your child's medication and treatment. There is too much information to remember accurately. Even people without ADHD have trouble remembering all the information needed to maintain a treatment plan. Remember that the parent accompanying a child could have ADHD, too.

10: Aim to Cover the Entire Day, Consistently

The late afternoons and early evenings can be a frantic and often disruptive time in the life of an ADHD child and family. Providing a top-up dose of stimulant medication can be a life-saver for a vulnerable family.

After 14, many children need 16 hours of coverage per day. This requires multiple doses of medication throughout the day. Patients should use medication at all times and in situations with impairment from ADHD, including at bedtime. It’s more than just for school. Medication helps us be social, get along with family, do homework at night, and drive a car safely.

Most doctors don’t consider a follow-up dose because they are worried it will keep kids awake, but we know that a nighttime dose can help children with ADHD “switch off their minds” to calm down and fall asleep. After finding the correct dose, I challenge you and your child to nap on their optimal stimulant dose in the afternoon to prove that evening doses will not keep them awake. 95% of kids can nap on medication. You will then know that your child can take a second dose to cover all the time they need when that happens.

There is no basis for a medication vacation. For children and teens, I recommend that they take medication consistently. Since medication is practical in one hour, adults don’t have to take medication every day. They can use it for a specific task.

However, it is worth noting that people who have ADHD and don’t take medication have a higher risk of developing a substance abuse problem, being in an injury-producing accident severe enough to go to the hospital, having an unplanned child, or being involved in the juvenile justice system. On medication, the risks are the same for the general population.

11: What is available in the first and second medications trialled don’t work.

Fifteen per cent of people do not respond to or tolerate the two standard molecules of methylphenidate and amphetamine. The second-line agent is Strattera (atomoxetine). It has an effect size of 0.7 in elementary school-aged children. In high school students and above, especially adults, we see a barely detectable effect size of 0.44. Even the barely detectable benefit is found in only about half of people. So that’s why the American Academy of Child and Adolescent Psychiatry put it in a third-line or alternative category.

The third-line medications are Clonidine and Guanfacine(not available in SA). They work for about one in three people. They have a very robust effect size of about 1.3.

Other medications in the alternative or off-label group include Bupropion (Wellbutrin) and modafinil (Provigil). These are not FDA-approved. They are not studied for ADHD, but there is some literature on their efficacy if everything else has failed.

I’ve never had parents say, “Gee, I’m glad I waited a couple of extra years before trying medication.” It’s always the exact opposite. “What would my life have been like if I had known how well these medications worked earlier?” There’s an actual period of grief about what might have been.

These medications don’t produce an artificial state. They offer a return to normal functioning, often with no side effects other than a mild loss of appetite that goes away for most people. With these steps, physicians can help more patients have that moment.