

Child and Family Centre

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ADHD Medication Information

Medication was first used to treat children with behaviour disorders in the 1930s. To date it is the most common treatment for children with ADHD. As many as 90% of children with ADHD receive medication at some time. The majority of medications that are used to treat ADHD come under the class as psycho-stimulants. Medication is typically used in combination with some level of behavioural intervention or after there has been limited response on to behavioural interventions from parents and teachers.

The most common medications come from the psycho-stimulant methylphenidate. Names for these medications include Concerta, Ritalin and Metadate. Other medications include Adderall and Strattera. Strattera is a non stimulant medication which has been available within the last 5 years.

The American medical Association made these comments regarding the use of stimulant medication for treatment of ADHD. "More than 170 studies involving over 6,000 children using stimulant medication for ADHD have found that up to 90% will respond to at least one stimulant without major adverse effects if drug titration (typically starting with a small dose and moving up to a higher dose as needed for the individual) is done carefully". Adverse or side effects from stimulants are generally mild, short lived and responsive to dosing or timing adjustments. A small number of persons have difficulty in tolerating in any type of medication for ADHD due to side effects that do not respond to timing or dosage adjustments.

The behavioural effect of medications can usually be seen 30 to 60 minutes after taking them and last anywhere from 3 to 6 or 12 hours depending on the dosage and whether or not the drug is given in slow release form. The exception is Strattera which typically takes 2 to 4 weeks to build up in the blood stream before you see therapeutic effects. The medication is usually given once a day if using extended release forms or 2 to 3 times per day if using a fast release lower dose. If you chose to use medication as a treatment option you and your Physician would discuss which type and dosage would be most appropriate. Parents should keep in mind that adjustments in dosage and timing of medication is common. Most Physicians will start out with a very low dose of stimulant to see if the child has any adverse side-effects and then bring the dosage up to a level where there is a positive therapeutic effect.

How does medication work? We need brain chemicals (neurotransmitters) to help control and regulate our behaviour and attention. Because these medications are structurally similar to neurotransmitters within our brain, it helps regulate behaviour. They can make up for what is not there naturally, thus helping ADHD people improve their behaviour. Because ADHD is fundamentally a brain chemical problem the most effective treatment is to change the chemistry with medication. Unless the problematic chemistry is changed other interventions will likely be less effective. Therefore, it is important to keep up some level of behavioural intervention but what you would typically see is that once the person is on medication they respond better to normal behavioural methods.

Medication has beneficial effects for the majority of children who take them. Improvements are seen in their classroom behaviour and performance as well as in socialisation. Specific behavioural improvements include; reduction of class disruption, increased on task behaviour, increased compliance with teacher and parent requests, improved daily academic productivity, improved peer interactions, increased ability to work cooperatively in groups and decreased aggression. Medication typically increases an ADHD child's persistence on difficult or uninteresting academic tasks. Whilst Symptom reduction and improvement varies from person to person, but there is typically some improvement that may range from mild to outstanding. The beneficial effects of medication extend to domains of a child's life outside of school. Improved compliance with parents' requests, improved behaviour with siblings and increased ability to benefit from and enjoy recreational activities may also be present. Because there are individual differences in the degree of responsiveness that ADHD children show to medication, the effects need to be monitored carefully to make sure the child receives the appropriate medication and appropriate dose. Most of the beneficial effects of stimulants for children are obtained with low to moderate doses but this can vary from person to person. It is the Physician's goal to use the lowest possible dose that improves behaviour without side effects. Research has demonstrated that medication can be effective as the sole treatment for ADHD but if there are serious oppositional defiant behaviours or depression/anxiety or any other co-existing conditions, a combined approach using behaviour methods / counselling with medication is usually better.

There are some myths about stimulants and a fair bit of information (especially on the internet) about the evils of using medication to treat children with ADHD. Some of these include that stimulants lower seizure thresholds and lead to aggressive behaviour, that ticks are a common reactions, it sedates children, that it is addictive for children in adolescence and that it leads to greater risk of substance abuse. Regarding the latter, research actually suggests that ADHD children who take stimulants have a much lower likelihood of substance abuse as teenagers and adults.

Typically it is necessary to use medication long term (through many years of elementary, primary or secondary school). Medication is not something that is taken for 3 or 6 months and then the child suddenly gets much better and no longer needs to take the medication. The behavioural and academic improvements seen with the use of medication are typically there as long as the medication is given. This underscores the

importance of combining the medication with some level of behavioural treatment. Ongoing behavioural interventions may increase the possibility of tapering off or stopping the use of medication as children mature.

It is a very difficult decision for parents to make to consider the use of medication for treatment of their child's ADHD. Typically, a comprehensive psychological / educational assessment and consultation from a Physician will help parents make the decision one way or the other.

Factors to consider in making the decision to use medication include:

- What is the severity of the child's ADHD and how negative of an effect is it having on their overall academic and/or social functioning?
- What has been the child's response to behavioural intervention that has been put in place over an appropriate period of time?
- Are there any co-existing psychological or physical illnesses that might contraindicate the use of medication. Particular caution should be taken for any children that have associated anxiety disorder.

Parents must weigh all factors available, listen to the opinions of professionals and then make a decision. Typically if it is not too severe, some parents can decide to live with it as it is but accept the fact that there may not be significant improvement in the child's symptoms and that there will be lingering academic and/or social difficulties.

The benefits of medication must always outweigh any adverse effects that medication causes. Loss of appetite and insomnia are the most common adverse reactions to stimulant medication. Other reactions incurred irritability, nausea, dizziness, stomach aches, headaches, rapid heart beat, elevated blood pressure, rashes, anxiety, drowsiness, nail biting and sometimes social withdrawal. At very high doses, hallucination and psychosis has been reported. These are very isolated cases. Medication may worsen anxiety if it is present in a child with ADHD and stimulants can sometimes cause cognitive over focussing and some children may actually decrease their academic performance, these side effects are also rare.

Most side effects will disappear within a few days or a few weeks by adjusting the dosage. In some cases, it is necessary to stop medication altogether.

There is some evidence that Ritalin at very high dosage will lower seizure threshold in children with a history of seizures. However, studies have shown that stimulants can be safely used with anticonvulsant medication. Typically a Neurologist is treating a child who has co-occurring seizure disorder and they will take these factors into account before prescribing stimulants.

In some cases, children will develop motor and vocal tics as a result of treatment with stimulant medication. The majority of research has shown that mild to moderate dosage

do not cause increased motor ticks in most children. Physicians will usually either take the child off medication or use a second line treatment if tics develop.

In recent years there has been a lot of information in the media suggesting that there are numerous negative effects that are caused by medications used to treat ADHD such as suicidal or homicidal behaviour, physical and psychological addiction and increased drug use. In summary, this is not the case though it is the case that some stimulants are a drug that can be abused. Most physicians will have concern about prescribing to adolescents who have a history of substance abuse problems or in families with adults who have a drug problem.

As noted above there are differences in the way individuals respond to medications. Some children may not show a positive response or have an adverse response. Some children may respond positively in all the areas highlighted above and show no side effects while others may improve only on some areas and have adverse effects such that they can not tolerate medication. Some children respond best to one type of medication while others respond to another. As stated above, adjustment in dosage, timing and even type of medication may be necessary before assuming that a child is a non responder.

The use of medication to treat children in the 3 to 6 year old range is controversial. Typically, a smaller percentage of children in this age group will have a positive response to medication. There may also be a higher degree of side effects. However, this is not to say that use of medication for young children is completely out of the question. The factors referred to above in regarding severity and response to behavioural intervention need to be carefully considered. Some Physicians are reluctant to prescribe medication for young children with ADHD unless there are serious difficulties such as aggression that have not responded to behavioural intervention.

It is important to assess the effects of medication especially when beginning treatment. Typically there has been some assessment or baseline gathered as to the child's symptom level and severity. As noted, most Physicians will have a trial period where the child receives a low dose of medication and then it is moved up to the point where there is a therapeutic effect. The best way to measure response to medication is with parent and teacher report and with behavioural rating scales included for both parties. It is also important to note and keep track of any side-effects and how the child responds over time. If a child is on medication long term it is typically good to have some reassessment of the child's overall functioning at 6 month intervals to make sure that positive therapeutic effect is ongoing.

It is also very important to talk with children about why they are taking medication and what the positive effects might be. It is usually best if the Physician, Psychologist or other consulting professional provides some information to the child about both therapeutic and side effects that is appropriate to their developmental level. Some parents choose to talk to children on their own and some choose for the appropriate professional to provide this information to the child.