



# How to support children with Attention Deficit / Hyperactivity Disorder

## Medical Therapy

### **What are the effects of medical therapy on Attention Deficit / Hyperactivity Disorder (ADHD)?**

Long-term medical research has proven that medical therapy, together with behavioural therapy, are the most effective treatments for children with ADHD. Medical therapy is effective in reducing children's hyperactivity and impulsivity. It can enhance their attention so that they can study and work quietly within a period of time. It can also reduce their emotional reaction and aggressive behaviour, which helps to improve their interpersonal relationship.

Nonetheless, medical therapy has its own limitations. It cannot improve children's compliance, emotion regulation, social skill, academic knowledge or learning ability, and it definitely cannot enhance their motivation to learn.

Adequate training by parents and teachers, and collaboration among family, school and community can all help to improve children's behaviour and skill. Research suggests that multimodal approach is the best way to treat children with ADHD.



## **When should medical therapy begin?**

After doctors make the diagnosis of ADHD in these children, they will prescribe medication when necessary. Medication is recommended for children aged six or above when their symptoms are severe. Recent clinical guideline recommends that behavioural therapy should be the first-line treatment for children below six years old, whereas medication can be considered for those age four or above with severe symptoms.

## **What types of medication are there?**

There are two main types of medication: Central Nervous System stimulants (CNS stimulants) and non-Central Nervous System stimulants (non-stimulants). CNS stimulants are the most effective and commonly used medications. Their main component is Methylphenidate. Around 70–80% of children show good response to CNS stimulants. Ritalin, Ritalin LA and Concerta (brand names) are registered and commonly used CNS stimulants in Hong Kong. If children show poor response to CNS stimulants or intolerant of their side effects, doctors will consider using non-stimulants (such as Atomoxetine, brand name Strattera, which is a norepinephrine reuptake inhibitors) or other medication such as anti-depressant.

## **What are the effects of Central Nervous System stimulants and how should they be taken?**

CNS stimulants (e.g. Methylphenidate) increase neurotransmitters (dopamine and norepinephrine) in the prefrontal cortex of brain which enhance children's attention and self-control. CNS stimulants have rapid onset and their effect can be observed within one to two hours of intake. Effect of short-acting Ritalin last for three to four hours, hence it has to be taken two to three times a day in order to maintain children's attention. The effect of long-acting preparations such as Ritalin LA and Concerta can last for eight to twelve hours as there is control release of drug; hence, they can be taken once per day. Doctors will prescribe the medication and adjust the dosage according to the children's need.



## **What are the side effects of Central Nervous System stimulants?**

Side effects of CNS stimulants usually appear during the initial phase of drug use. Most of them are transient and mild. Common side effects include loss of appetite and weight, stomachache, headache, insomnia, mood swings, anxiety and tics. Other rare side effects include raise blood pressure and heart rate, arrhythmias, hallucinations, mental problems and growth suppression. Children with heart disease or epilepsy should consult their doctor for further evaluation before commencing medication. These side effects can be minimized if the drug dosage is stepped up gradually and is kept at an adequate dose. Children will not be addicted to the medication.

## **Which patients are more likely to have side effects?**

Pre-school children are more prone to side effects like mood swings, irritability and crying episodes. Children who also have Autism Spectrum Disorder have higher chance of experiencing side effects as higher dosage of CNS stimulants may be needed and their response to medication vary.

## **How long is the duration of medical therapy?**

The duration of drug treatment varies, depends on individual need. Most children need to take medication for several years and some may need it until adulthood. If the children's condition improves, parents may discuss with the doctor to consider reducing or stopping the medication, see if it can be discontinued for longer term afterwards.



## Are there any alternative to medical therapy?

Medical therapy is the most effective treatment for major symptoms of ADHD. It is fast-acting, safe with few side effects. Behavioral therapy, support from parents and teachers can help to improve the children's emotional, social and learning problems. Alternative therapies such as neuro-feedback training, special diet (e.g. diet excluding artificial colorings and additives, diet enriched with fatty acid, amino acid and iron), music therapy, massage and physical therapy are still under investigation with unproven efficacy. Hence, they cannot replace medical and behavioral therapy.

Parents should pay attention to some basic principles in choosing alternative therapy, e.g. scientific evidence of the therapy, its target symptom and patient group, and possible side effect. Children should not be deprived of the mainstream effective therapy while receiving alternative therapy.



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