PSYCHOSTIMULANT MEDICATION

ADHD is a medical condition due to brain dysfunction, which is considered to probably be due to neurotransmitter deficiency in the frontal lobes of the brain. This is the area responsible for impulse control and concentration. There are valid and well researched good reasons for considering a trial of medication in children and adults with significant symptoms of ADHD as part of management, particularly when there are also other coexisting conditions present. This should only be decided after a comprehensive and thorough evaluation.

Methylphenidate (Ritalin, Concerta XL, Medikinet XL and Equasym XL) and Dexamfetamine are the commonly used psychostimulant medications in the UK to treat ADHD.

The aim of the use of medications is to improve the child or adult's core ADHD symptoms of inattention, impulsivity or hyperactivity. There is usually a subsequent "flow-on" improvement to many of the other problems such as oppositional behaviour, mood swings and low self-esteem.

The aim of this treatment is to improve the person' focus, his/her ability to stay on task and also to reduce his/her impulsive and hyperactive behaviour.

Psychostimulants should always be used in conjunction with appropriate educational and other appropriate management strategies.

Psychostimulants are not able to cure ADHD but can provide symptomatic relief of the core symptoms for the duration of each dose. They should not be viewed as panacea but do create very significant improvement in approximately 90% to 95% of people treated. Improvement is usually seen within half an hour of the effective dose being given.

Careful fine-tuning of dosage and timing of medication, as well as regular follow up appointments to review progress, is essential for effective management.

Effective management aims to help a child achieve to his or her potential academically, behaviourally and socially. It aims to minimise the progression of the condition. In time many children outgrow the long-term need for medication particularly when they leave school, although a large number of adults also still need treatment. The initial aim of treatment should be to enable the child to achieve to his/her potential through school years cademically, socially and with robust self-esteem.

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When there are significant autistic spectrum difficulties, learning problems or conduct disorder or the presence of a poor socioeconomic environment, response rates to medication are somewhat lower.

It is not absolutely essential to have "holidays" off medication. However in milder cases particularly where the symptoms are not so problematic in the home setting but more so at school, it is not usually necessary to use medication at home. Some children benefit from a lower dose of medication or the occasional use of short-acting medication when they are on long-acting during the week at school. This is an individual decision and needs to be madein conjunction with the specialist. Many children however do not have much insight into whether or not the medication works for them. It is, mainly, those around them who notice. It can be stopped suddenly if necessary.

SIDE EFFECTS

Methylphenidate (Concerta XL, Equasym XL, Medikinet XL or Ritalin) is extremely well researched. Dexamfetamine is also well researched but to a lesser extent, however it has been used for a great many years in the treatment of ADHD. There are at least 150 well-documented studies showing the effectiveness of these medications and their relative freedom from side effects.

It is always important to put any side effects in perspective. Any medication for any medical condition – even those bought over the counter - can have possible side effects and preparations for ADHD treatment are no exception. Short term side effects may occur in the treatment of ADHD in up to 20% of those treated with medication. However, these can be improved or ceased by fine tuning/change of medication under specialist guidance. If they continue to be problem, treatment may need to be stopped under specialist guidance. It is important to note that there has been gross exaggeration, especially by the media, of their supposed side effects and copious myth and misinformation about them over the years.

As ADHD can be a significant long term condition, it is always important to balance any alleged or possible side effects against the complications and impairment caused by the ongoing condition of ADHD.

If medication is used, this is a decision for the patient and/or parent's with specialist advice after a comprehensive assessment and that it is always for a trial period. Because the medication works within half an hour of taking the optimum dose it is possible to ascertain within a very short period of time whether or not there are side effects, and whether any improvement in the condition outweigh this.

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Side effects only last as long as each dose of medication lasts. They are not permanent and often improve with time, so it is important for parents/patient to liaise closely with the specialist about this.

As stated in the British Medical Journal (2006 – D Coghill), these medications have been used for about 60 years. In the peer-reviewed journals, and in the adverse reporting systems there is no evidence of long-term side effects. However the popular press will often scaremonger about presumed side effects without foundation. Hence, it is essential that parents act as advocates for the child and take advice direct from their specialist and appreciate that this sort of misinformation, unfortunately, is likely to always be present in the press and amongst those whose views are not inkeeping with mainstream thinking in the treatment of ADHD. A multisite prospective study is in the process of starting in the UK.

Short-Term Side Effects

Appetite Suppression

- This is the most frequent side effect of Methylphenidate and Dexamfetamine.
- It often improves over the first few weeks although it can persist.
- If the appetite suppression is only at lunchtime and not in the evening then usually there is no weight lose and the situation is manageable.
- Any initial weight loss usually improves over the first few months.
- Appetite suppression is rarely severe enough to warrant cessation of medication.
- Medication is usually given towards the end of meals although this is not essential.
- If appetite suppression occurs then frequent snacks, eating late in the day or first thing in the morning may help.

Sleep Difficulties

- Giving medication in too high dose too late in the day can make it sometimes difficult for a child to switch off and settle at night.
- Very occasionally even a morning dose can make sleep difficult.
- Many children with ADHD have had sleep problems even before medication was started.

- If sleep difficulties persist then it is usually worthwhile changing to an alternative brand of the medication.

- "Sleep hygiene" measures such as avoiding television or computer work in the evening, using soothing drinks, soft music etc are sometimes helpful.

Abdominal Pain/Headaches

- These are occasional and usually occur initially in the first week or two and rarely persist.

- Often headaches have in fact been present prior to treatment because of stress and may improve once treatment is started.

Subduing or Blunting of Personality

- This occurs much less frequently with the long-acting preparations than it used to occur with short-acting Ritalin. However it can occasionally occur. It often improves with time or with minor dosage adjustment or change into a different brand.

- If persistent blunting of personality occurs then it is important for the specialist to stop the medication and consider other options.

- Blunting of personality is never permanent.

Rebound Effect

- In the late afternoon as the medication wears off, some children may experience a worsening of behaviour usually for half hour to an hour. There might be worsening of impulsiveness, hyperactivity or oppositionality.

- Usually with careful fine-tuning of timing of medication, changing to an alternative brand or using a small dose of short-acting medication in the late afternoon to "walk the dosage down", the rebound effect is minimised.

Tics

- Physical and verbal tics occur occasionally in children with ADHD without being severe enough to warrant a diagnosis of Tourette's syndrome.

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- Sometimes Methylphenidate and Dexamfetamine preparations can exacerbate pre-exiting tics rather than cause them. If this occurs it may be necessary to change to an alternative brand or preparation.

- The presence of mild tics at diagnosis is not necessarily a contraindication to using psychostimulant medication.

Unusual Side Effects

- Very occasionally itchy skin or skin rashes can occur. Sometimes the child or adult can become depressed although this is almost always in situations where there was preexisting depression or mood change. Rarely nausea can occur. There is no evidence of addiction to the doses of Methylphenidate or Dexamfetamine used for ADHD. Indeed effective management of ADHD lowers the tendency to substance misuse rate of some sufferers
.

Long-Term Side Effects

- As noted above there have been no documented long-terms side effects with the use of these medications.

- Growth retardation. There have been some studies suggesting that slowing of height has been a problem. This has not been proven in studies and in this and other such clinics experience, very occasional the height velocity slows down once medication is started and the child can always grow slightly below the initial growth velocity line. However, with the onset of puberty, he/she invariably catches up their height. We do not consider there is any evidence that height retardation is therefore an issue.

- Possible addiction. See above paragraph.

PRINCIPLES FOR COMMENCING AND STABILISING MEDICATION

Always start with the lowest dose of whichever medication it has been decided to use. Written instructions will be given by the specialist as how to gradually increase the dosage until there is an improvement in core symptoms, using the lowest effective dose.

Medication adjustments are usually made every two or three days depending on feedback from the parents and school or other family members. Because improvement is usually seen within half an hour of the effective dose being given it is usually possible to adjust the dosage fairly rapidly.

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Most clinicians will start children and adults with ADHD on one or other of the Methylphenidate preparations. Ritalin 10 mg tablet is the short-acting preparation. There are three long-acting preparations, Concerta-XL which has an osmotic pump release mechanism and thus the capsule must be swallowed whole. It lasts about 10 to 12 hours. There are two other long-acting preparations, Equasym XL which has a slow-release sprinkle mechanism inside the capsule and lasts for 9 to 10 hours, and Medikinet XL which lasts again 9 to 10 hours and which again has slow-release sprinkles inside the capsule but a slightly different release mechanism. There is no one preparation that is better than others, and the decision on which preparation is used is decided in discussion with the clinician. Factors taken into consideration include the duration of action needed and whether or not the child is able to swallow capsules whole.

Sometimes one or other long-acting preparations can suit an individual child better than the other.

Dexamfetamine is usually kept in reserve for situations where there are excessive side effects from Methylphenidate preparations, or lack of response. It is a four-hour duration preparation and thus a lunchtime dosage is necessary. Otherwise short-acting preparations are rarely used now.

Phone and direct e-mail advice is always essential and families are encouraged to keep in close contact with the centre following the commencement of medication, prior to the review appointment which is usually in two months after the initial consultation.

If side effects persist and appear significant advice should be sought from the consultant. Most side effects are transient and are responsive to minor dosage or timing adjustments.

If the medication does not seem to produce the expected or desired response, it may be that the dosage is too low, the timing needs changing, or that particular medication is not suitable or the right one for that individual. This can only be determined by trial and error in the management of ADHD. Alternatives will need to be considered. Sometimes the problem is that although the core ADHD symptoms may have improved, there are still residual difficulties with oppositionality or obsessions, or other coexisting problems, which need further management.

Once the appropriate dose is reached for that child or adult – which is something that is very individual and not a "one size fits all," an improvement is seen in concentration and distractibility, hyperactivity and impulsiveness almost immediately. More slowly, usually within weeks or the first month or two, self-esteem, academic progress, socialising problems and other difficulties usually start to improve.

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Ongoing monitoring and reassessment of the patient is essential to effective management. Medication should always be seen as providing a window of opportunity to allow educational and strategies to be more effective.

INSTRUCTIONS FOR STARTING MEDICATION

Medication:

	Time					
Step 1						
Step 2						
Step 3						

Use the **lowest dose** that is effective.

Please **phone/email** us within two weeks of starting medication, and at any stage after that if there are concerns.

Each step can be for a day or a week depending on how long it takes to get feedback from the child, family and/or school regarding progress.

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