



ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) IN CHILDREN AND YOUNG ADULTS

Introduction

1. Medical Condition

ADHD is the most common neurobehavioral disorder of childhood and amongst the most prevalent chronic health conditions affecting school-aged children. The core symptoms of ADHD include inattention, hyperactivity, and impulsivity. Children with ADHD may experience significant functional problems that may continue as they enter adolescence and adult life. Some impairment from the symptoms is present in two or more settings (e.g. at school, during sport, at home). Recent literature also suggests that ADHD may be diagnosed or present for the first time in young adulthood.

2. Diagnosis

A. Medical history

The diagnosis of ADHD is essentially a clinical diagnosis, frequently initiated by parents, teachers or other significant adults such as coaches and trainers who deal regularly with young people. However these early anecdotal suspicions must be established and confirmed by experienced clinicians. In most parts of the world these include paediatricians, child psychiatrists or clinical psychologists. Obviously a record of the onset of symptoms is required and the DSM-IV or ICD-10 criteria outlined in the following section must be met.

B. Diagnostic criteria

These are in accordance with the DSM-IV criteria (see reference). The Connor scale has also shown utility in correlating the psychopathology in children with ADHD. (ref Journal of the American Academy of Child & Adolescent Psychiatry. 42(2):193200, February 2003.) The SNAP or other DSM IV based tool can also be used as rating scales. (REF) Some recent research indicates that objective diagnosis by PET (Positron Emission Tomography) or SPECT (Single-photon Emission Computed Tomography) may be of possible diagnostic assistance in the near future, but are not currently being used to diagnose ADHD. When ADHD first appears at a young adult age, diagnostic confirmation demands a second expert opinion.

*Medical Information to Support the Decisions of TUECs
ADHD*

C. Relevant medical information

See above.

3. Medical best practice treatment

A. Name of prohibited substance

Stimulants form the basis of the treatment of ADHD and these may include short, intermediate and long acting methylphenidate, or dextroamphetamine.

B. Route

Oral

C. Frequency

Methylphenidate Compounds

| Duration | Dosage Range | Generic Name | Examples of common Trade Name | Maximum Adult dose |
|---------------------|----------------|----------------------------------|-------------------------------|------------------------------|
| Short acting | 5-25mg BID-TID | Methylphenidate | Ritalin | 100mg/d |
| Intermediate acting | 20-70mg/d | Methylphenidate Extended Release | Ritalin SR | 100mg/d |
| Long acting | 18-72mg/d | Methylphenidate Extended Release | Concerta | 108mg/d |
| | 10-80mg/d | Long Acting Methylphenidate | *Biphentin | 80mg/d (60mg/d for children) |

*Not available in many countries

Medical Information to Support the Decisions of TUECs
ADHD

Amphetamine Compounds

| Duration | Dosage Range | Generic Name | Examples of Common Trade Name | Maximum Adult Dose |
|---------------------|--|---|-------------------------------|--------------------|
| Short acting | 10-30mg/d | Dextroamphetamine | [same] | 50mg/d |
| Intermediate acting | 10-15mg/d | Dextroamphetamine Spansules | [same] | 50mg/d |
| Long acting | 5-30mg/d child 10-40mg/d teen<75kg 20-60mg/d adult | Amphetamine /dextroamphetamine Extended Release | Adderall XR | 60mg/d |
| | 20-60mg/d | Lisdexamphetamine | Vyvance | 70mg/d |

D. Recommended duration of treatment

The treatment of ADHD is a long term treatment (possibly over years). Regular intermittent assessments every 3 to 4 months are useful during the period of initial stabilization on medication. It is highly recommended for any athlete on continued therapy with methylphenidate or dextroamphetamine to undergo an annual review by a specialist in the management of ADHD (see above).

4. Other non-prohibited alternative treatments

Strattera [Trade name: Atomoxetine] has been identified as a non-prohibited alternate treatment for some patients with ADHD. This medication is less effective than stimulant medication and has a different side effect profile which includes somnolence, sexual side effects and occasionally liver complications. In addition, this medication is not available in all countries. At this point, Strattera is considered a second line treatment for ADHD because of its lower efficacy and side effect profile. Strattera should not be tried as first-line treatment. As Strattera is considered a second line treatment, it is not necessary to demonstrate a failed trial of this medication prior to the acceptance of a methylphenidate or amphetamine for a Therapeutic Use Exemption (TUE). Otherwise, apart from some behaviour-modifying techniques, treatments with non-prohibited substances have not been shown to be effective.

5. Consequences to health if treatment is withheld

Untreated, ADHD is widely recognized as having detrimental effects on the quality of life and psycho-social development of the patient. Co-morbid psychiatric conditions may manifest if ADHD is left untreated.

6. Treatment monitoring

Measures of treatment compliance together with target outcomes should be undertaken every 3 to 4 months by an experienced clinician in the initial stages of treatment until a stable dose is found. Evidence of yearly reviews by the treating clinician must accompany a TUE application.

7. TUE validity and recommended review process

The recommended duration of a TUE for ADHD is four (4) years with an annual review by a specialist physician.

8. Any appropriate cautionary matters

Athletes are encouraged to follow the treatment plan prescribed by the treating physician avoiding self adjustment of medication. There is no requirement to cease treatment during competition period.

9. References

1. B.Corrigan Attention Deficit Hyperactivity Disorder in Sport: a review In Int.J.Sports Med 2003; 24: 535 – 540.
2. G.Hickey, P.Fricker Attention Deficit Hyperactivity Disorder, CNS Stimulants and Sport, In Sports Med 1999, Jan 27(1): 11-21.
3. Treatment of the School-Aged Child With AttentionDeficit/Hyperactivity Disorder by the Committee of Quality Improvement, Subcommittee on ADHD of the American Academy of Pediatrics in Pediatrics Vol.108 No.4 October 2001, 1033-1044.
4. Treatment of the School-Aged Child With AttentionDeficit/Hyperactivity Disorder by the Committee of Quality Improvement, Subcommittee on ADHD of the American Academy of Pediatrics in Pediatrics Vol.108 No.4 October 2001, 1033-1044.
5. Journal of the American Academy of Child & Adolescent Psychiatry. 42(2):193-200, February 2003. Connor, Daniel F. M.D.; Edwards, Gwenyth PH.D.; Fletcher, Kenneth E. PH.D.; Baird, Janette M.A.; Barkley, Russell A. PH.D.; Steingard, Ronald J. M.D.
6. CADDRA Practice Guidelines – 2008 (Canadian Attention Deficit Disorder Research Association).
7. Greenhill, L. Hechtman L. 2009. Attention Deficit Hyperactive Disorder, in Sadock, BJ, Sadock VA, Ruiz P editors, Comprehensive Textbook of

Medical Information to Support the Decisions of TUECs
ADHD

Psychiatry, Ninth Edition, Lippincott Williams & Wilkins, Chapter 42.1, p. 3560-3572.

8. McGough L. James.2009. Adult Manifestation of Attention Deficit Hyperactive Children, in Sadock, BJ, Sadock VA, Ruiz P editors, Comprehensive Textbook of Psychiatry, Ninth Edition, Lippincott Williams & Wilkins, Chapter 42.2, p. 3572-3580.
9. American Psychiatric Association Task Force on DSM-IV. Diagnostic and Statistical Manual of Mental Disorders: DSMIV-TR, 4th ed. Washington (DC): American Psychiatric Association, 2000; p. 538-95.
10. Pliszka S. Practice parameter for the assessment and treatment of children and adolescents with attention-deficit/hyperactivity disorder. AACAP Work Group on Quality Issues. J Am Acad Child Adolesc Psychiatry. 2007 Jul; 46(7):894-921.