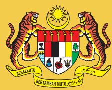
QUICK REFERENCE FOR HEALTHCARE PROVIDERS

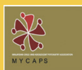
Management of Attention-Deficit/Hyperactivity Disorder in Children & Adolescents

(Second Edition)



Ministry of Health Malaysia

Malaysian Psychiatric Association



Malaysian Child and Adolescent Psychiatric Association

Academy of Medicine Malaysia

KEY MESSAGES

1. Attention-deficit/hyperactivity disorder (ADHD) is a common childhood neurodevelopmental disorder & often lasts into adulthood.
2. ADHD is defined as a persistent pattern of inattention &/or hyperactive & impulsive behaviour.
3. ADHD has a multifactorial & complex aetiology which includes both biological & environmental factors.
4. Any child or adolescent presenting with academic difficulties, behavioural problems, mood disturbances, interpersonal relationship issues, substance use or personality disorders should be evaluated for ADHD.
5. Assessment & diagnosis of ADHD requires obtaining information from multiple informants, including parents & teachers, as well as conducting a clinical examination & evaluation for co-morbidities on the individuals.
6. Psychoeducation, occupational therapy, parent training, school-based & behavioural interventions should be offered in ADHD.
7. Organisational skills training & cognitive behavioural therapy-based intervention should be considered in ADHD.
8. Medication should be offered to children aged ≥6 years & adolescents with ADHD if indicated.
9. Combination of pharmacological & non-pharmacological treatment should be considered when the symptoms persist & cause functional impairment.
10. ADHD patients need continuous care & long-term monitoring during their teenage & adult years. They have increased risk of co-existing psychiatric disorders both in childhood & adulthood.

This Quick Reference provides key messages & a summary of the main recommendations in the Clinical Practice Guidelines (CPG) Management of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents (Second Edition).

Details of the evidence supporting these recommendations can be found in the above CPG, available on the following websites:
Ministry of Health Malaysia: www.moh.gov.my
Academy of Medicine Malaysia: www.acadmed.org.my
Malaysian Psychiatric Association: https://www.psychiatry-malaysia.org

CLINICAL PRACTICE GUIDELINES SECRETARIAT
Malaysian Health Technology Assessment Section (MaHTAS)
Medical Development Division, Ministry of Health Malaysia
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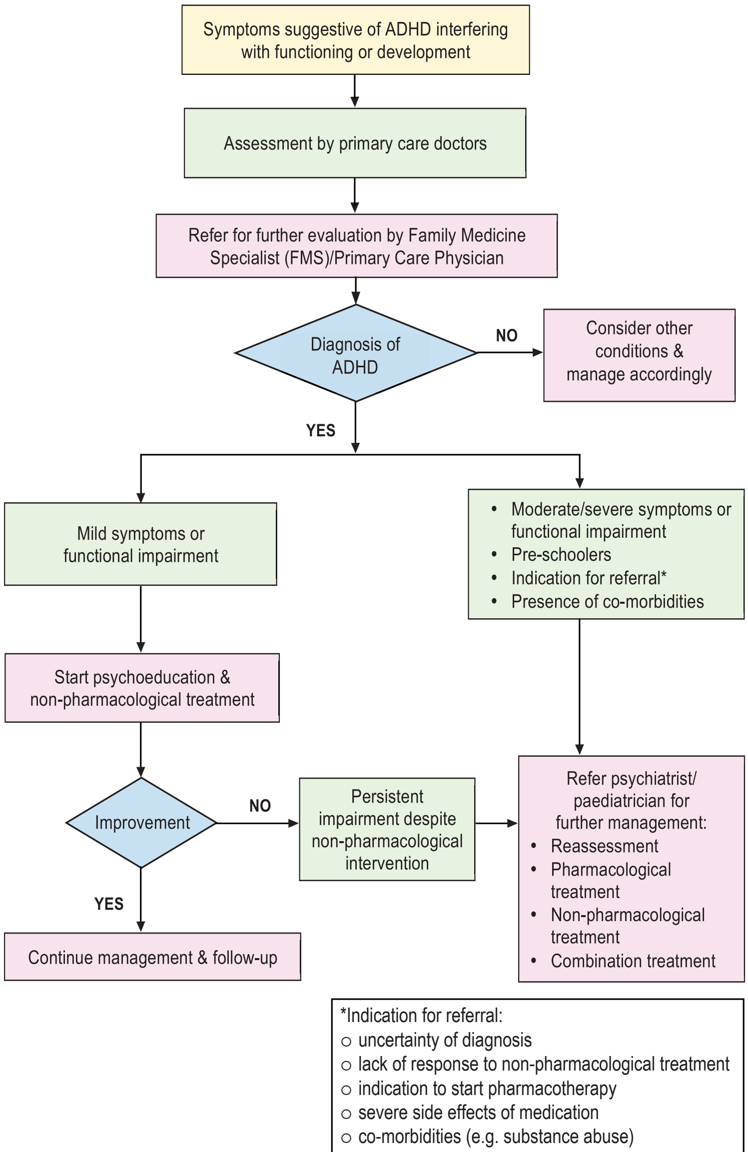
ALGORITHM: MANAGEMENT OF ATTENTION-DEFICIT/HYPERACTIVITY DISORDER (ADHD)



ASSESSMENT & DIAGNOSIS

- The evaluation of any child & adolescent for ADHD should consist of clinical interviews with the parents/caregivers & patient by obtaining information about the patient's school or day care functioning, evaluating co-morbid psychiatric disorders & reviewing medical, family & social histories.
- Behavioural rating scales are useful adjuncts to the clinical interview in gathering more information about the individual. It should not be used as the sole criterion for clinical diagnosis of ADHD.
- ADHD is diagnosed based on diagnostic criteria of Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) or hyperkinetic disorders from 10th Revision of the International Statistical Classification of Diseases and Related Health Problem (ICD-10).

The core symptoms of ADHD are:
- inattention
- hyperactivity & impulsivity

In order to meet diagnostic criteria, the core symptoms should:
- be persistent
- be pervasive (present in 2 or more settings)
- have caused significant functional impairment
- not better accounted for by other mental disorders (e.g. pervasive developmental disorder, schizophrenia, other psychotic disorders, depression or anxiety)

The onset of symptoms should be before the age of 5 years for hyperkinetic disorder or 12 years for ADHD.

SEVERITY OF ADHD BASED ON DSM-5 CRITERIA

Severity	Features
Mild	Few, if any, symptoms in excess of those required to make the diagnosis are present, & symptoms result in no more than minor impairments in social or occupational functioning.
Moderate	Symptoms or functional impairment between "mild" & "severe" are present.
Severe	Many symptoms in excess of those required to make the diagnosis, or several symptoms that are particularly severe, are present, or the symptoms result in marked impairment in social or occupational functioning.

- There is no diagnostic laboratory test for ADHD.

TREATMENT

As ADHD is a chronic condition, children & adolescents with ADHD & their families require long-term treatment & follow-up.

- The goal of treatment is to improve symptoms, functioning & learning. It also aims to increase the child's self-esteem & self-worth. The treatment includes psychoeducation, non-pharmacological &/or pharmacological approaches. In view of difficulties with diagnosis & special requirements of management, pre-schoolers (children below 6 years old) suspected of ADHD should be referred to a child psychiatrist or a paediatrician.

PSYCHOEDUCATION

Psychoeducation is an important component in the treatment of ADHD.

- Psychoeducation should ideally contain the following:
  - a good patient-healthcare provider relationship
  - disorder-related information e.g. symptoms, potential causation/risk factors & negative effects in the life course
  - treatment-related information outlining pharmacological & non-pharmacological approaches, particularly regarding the effectiveness & adverse effects of medication
  - barriers to adherence & coping skills
  - parenting skills

NON-PHARMACOLOGICAL TREATMENT

There are many non-pharmacological therapies available for individuals with ADHD including:

- Occupational therapy
- Organisational skills training
- Psychological intervention
  - Cognitive behavioural therapy-based intervention
- Family-based Intervention
  - Parent training & behavioural intervention
- School-based Intervention

PHARMACOLOGICAL TREATMENT

- Medication should be offered to children aged ≥6 years & adolescents with ADHD:
  - if their symptoms are persistent & causing significant impairment in at least one domain despite behavioural & environmental interventions.
  - along with evidence-based training interventions &/or behavioural interventions, if available.

- Methylphenidate (MPH) should be offered to children aged ≥6 years & adolescents with ADHD if medication is indicated*.
  - Atomoxetine (ATX) may be used as an alternative.
- If medication for ADHD is indicated in children <6 years old, it should be initiated by a child psychiatrist or a paediatrician with expertise in managing ADHD.

*refer yellow box above

In the MoH Medicines Formulary, only MPH & ATX are approved for use in the treatment of ADHD in children over 6 years.

COMBINATION TREATMENT

- Combination treatment (pharmacological & non-pharmacological treatment) should be considered in children ≥6 years of age & adolescents with ADHD when the symptoms persist & cause functional impairment.

PHARMACOLOGICAL TREATMENT

Drug	Minimum Dose	Maximum Dose	Titration & Timing	Common Adverse Effects
Methylphenidate HCL 10 mg Immediate-release (IR) tablet	Children over 6 years & adolescents: Initial 5 mg 1 - 2 times daily	Total daily dose 60 mg/day (in 2 to 3 divided doses), not to exceed 2 mg/kg/day	Increase by 5 - 10 mg daily at weekly intervals	Headache, insomnia, irritability, decreased appetite, xerostomia, nausea, increased heart rate
Methylphenidate HCL 18 mg, 27 mg*, 36 mg Extended-release (ER) tablet	Children over 6 years & adolescents: 18 mg once daily	Total 72 mg once daily	Increase by 18 mg at weekly intervals Administer in the morning with or without food	
Methylphenidate HCl 20 mg, 30 mg*, 40 mg Long-acting (LA) capsule	Children over 6 years & adolescents: 20 mg once daily	Total 60 mg/day	May increase 10 mg daily at weekly intervals Administer in the morning with or without food. For patients with swallowing difficulties, contents may be sprinkled on soft food.	
Atomoxetine HCl 10 mg, 18 mg, 25 mg, 40 mg, 60 mg capsule	Children over 6 years & adolescents: ≤70 kg: Initial dose 0.5 mg/kg/day once daily	1.4 mg/kg/day or 100 mg, whichever is less	Increase after minimum of 3 days to 1.2 mg/kg/day May administer as either a single daily dose or 2 evenly divided doses in the morning & late afternoon/early evening	Headache, insomnia, drowsiness, hyperhidrosis, xerostomia, nausea, decreased appetite, abdominal pain, vomiting, constipation
	Children over 6 years & adolescents: >70 kg: Initial dose 40 mg once daily	100 mg/day	Increase after minimum of 3 days to 80 mg/day May administer as either a single daily dose or 2 evenly divided doses in the morning & late afternoon/early evening May increase to 100 mg/day in 2 - 4 additional weeks to achieve optimal response Take with or without food Swallow capsules whole Do not open capsules	In adolescents: Erectile dysfunction, ejaculatory dysfunction, dysmenorrhoea

*not listed in MoH Medicines Formulary

ADVICE FOR BEHAVIOURAL MANAGEMENT

General advice for parents

1. Remain calm & in control.
2. Schedule one on one time, at least 10 to 15 minutes every day, with your child to let him/her know how important he/she is to you.
3. Individuals with ADHD benefit from frequent feedback. Notice your child's strength & praise him/her regularly.
4. Model the behaviour you would like to see from your child.
5. Use schedules & routines.
6. Post lists & reminders for the routines in places they will be seen.
7. Discuss the behavioural goals with your child.
8. Discuss the behavioural target(s), expectation & feedback with your child's other caregivers so that he/she receives consistent message.
9. Target 1 to 2 behaviours that you want to change at one time.
10. Give directions one at a time & track your child's response.
11. Use desired activities (screen time/play) as privileges/rewards for success on behavioural targets.
12. Ensure regular mealtimes & good rest for your child & yourself.

Younger Children

1. Routines are very important. Balance higher energy & quieter activities throughout the day.
2. Use visual prompts in the order of routines you would like him/her to learn (e.g. steps to get ready for bed).
3. Choose your battles - ignore minor misbehaviours.
4. Give choices but limit the number.
5. Use & reinforce "rules" (e.g. keeping hands to self) immediately before venturing into a community setting.
6. Prepare your child before an outing (e.g. crowded areas, in the car).

School-age child at home

1. Include homework/study time as a part of the family routine in a venue free from distraction.
2. Check your child's school schedule every day & help him/her organise the homework into doable portions.
3. Help your child use a system (e.g. labelled folders for each subject) to get the homework back to school.
4. Plan brief breaks between the homework portions.
5. Use the activities your child enjoys as incentives for getting work done (homework & chores).
6. Consider getting one to one help for your child's schoolwork.
7. Help the child to be mindful of his/her deadlines.
8. Communicate with your child's teacher about homework, grades & behaviour.
9. If your child is still struggling at school, consider working with the school & special education unit for inclusive assistance in the mainstream or in an integrated special education setting.
10. Invite peers one at a time to reduce stimulation & encourage appropriate social behaviours.

SPECIAL POPULATION

Transition

Transition is the period from adolescence to adulthood. Optimising services during childhood & transition to adult health care improves treatment & prognosis of individuals with ADHD.

Adults

Adults with childhood ADHD, compared with those without ADHD, had higher risk of:
- academic difficulties
- psychiatric disorders (e.g. mood, anxiety & personality disorders)
- substance & alcohol use
- legal issues
- problems in other areas of life (e.g. low self-esteem, low work functioning)

Adults with ADHD who received treatment in childhood have better long-term outcomes compared to those who did not.

MANAGEMENT IN PRIMARY CARE

Patients with ADHD can be managed in the primary care facility if the condition is mild. Those with moderate to severe ADHD should be referred to a psychiatrist/paediatrician for further management.

Non-pharmacological treatment of ADHD can be initiated by FMS. They can provide patients & family with psychoeducation & general advice on family- & school-based interventions. Patients can then be referred to an occupational therapist for further interventions.

MONITORING & FOLLOW-UP

Clinicians should provide regular follow-up for individuals with ADHD. During the follow-up, emphasise treatment adherence &, monitor the effectiveness & side effects of medication when prescribed. The following should be monitored during follow-up:
- height & weight
- vital signs
- loss of appetite
- rebound hyperactivity
- sleep
- worsening behaviour
- mood changes
- stimulant diversion

- Children with ADHD are eligible to get additional support e.g.:
  - registration for Orang Kurang Upaya (OKU) with Social Welfare Department (Jabatan Kebajikan Masyarakat)
  - special needs education under District Education Department (Pejabat Pendidikan Daerah), including inclusive education in the mainstream setting examination & classroom accommodation (e.g. extra time, reduced distraction)