

## Attention Deficit Hyperactivity Disorder: Effect of Ayurveda in Current Scenario

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### Abstract

ADHD is the most common neurobehavioral and developmental disorder of childhood, characterized by emotional problems, low self-esteem with inattention, hyperactivity and impulsiveness. Its incidence is 3-5 % globally. Conventional modern treatment with stimulant drugs lead to many side effects. There is need to develop alternative treatment with safe and effective medicine. Exact cause of ADHD is unknown but there are no. of factors which can contribute to the appearance and progression of this disorder including specific inherited genes, food additives, and environmental factors like harmful habits during pregnancy. Ayurveda includes herbal and nutritional supplementation, meditation, yoga and abhyanga for the treatment of physical and psychological disorder, therefore there should be some parenting tips with yoga for ADHD children to reduce stress like Suryanamaskar, Pranayam, Vrikshasana, Meditation and medicines suggested are MedhyaRasayana, Brahmi (Bacopamonnieri), Shankpushpi (as nervine tonic and mind soother), Sarpagandha (reduce hyperactivity). Some researches explored the effectiveness of massage and exercise therapy on reducing symptoms and medication doses in ADHD school age patients.

**Keywords**ADHD,

MedhyaRasayana, Matrabasti, Yoga



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## INTRODUCTION

*“Children are the world’s most valuable resource and its best hope for the future”*

John Fitzgerald Kennedy (American 35th US President (1961-63), 1917-1963)

Every incidence in the childhood has an influence on the adult life, so a healthy childhood is mandatory for expecting a healthy adulthood. These statistics definitely increase the responsibility of paediatric population. It is the most commonly diagnosed psychiatric disorder in children, affecting about 3 to 5% of Children globally and diagnosed in about 2 to 16% of school aged children. It is a chronic disorder with 30 to 50% of those individual diagnosed in childhood continuing to have symptoms into adulthood. It is diagnosed 2 to 4 times more frequently in boys than in girls. ADHD is a neurodevelopmental disorder characterised by persistent hyperactivity, impulsivity and inattention that significantly impairs educational achievement (i.e. school performance is often poor while having normal intelligence) and/or social function. DSM IV – revised criteria define three subtypes of ADHD<sup>[1]</sup>:

Primarily of the inattentive type  
(ADHD/I)

Primarily of the hyperactive –

Impulsive type (ADHD/HI)

Combined type (ADHD/C)

## MATERIALS AND METHODS

### Aetiology:

Exact cause is unknown but scientists believe that a no. of factors can contribute to the appearance and progression of this disorder which include –

- Specific inherited genes
- Brain injuries
- Sugar
- Food additives
- Environmental factors including heavy metal poisoning and harmful habits during pregnancy.

### Diagnosis:

ADHD can be misdiagnosed because of the soft definitions of its symptoms and because of the overlap with other behavioural syndromes. In all diagnosing ADHD relies on the subjective decision of the physician and reported symptoms from the parents of kids. According to the diagnostic and statistical manual of mental disorder (DSM-IV-TR), symptoms emerge before seven years of age. ADHD impacts school aged children and results in restlessness, acting impulsively, and lack of focus, which impairs their ability to learn properly. Key

presentation of inattention type includes nine criteria<sup>1</sup>:

- Carelessness with details of own things
- Fails to sustain attention in task
- Appearance of child as not listening
- Does not finish instructed tasks
- Poor in organizing tasks
- Avoid tasks that require sustained mental effort
- Loses things
- Easily distracted by extraneous stimuli
- Forgetful in daily activities.

Hyperactivity - impulsivity type ADHD have also nine criteria in which hyperactivity includes:

- Fidgeting and squirming.
  - Leaves seat when should be seated
  - Runs about or climbs excessively and inappropriately
  - Cannot play or engage in leisure activities quietly
  - Always “on the go” or “driven by a motor”
  - Talks excessively
- Impulsivity include –
- Blurts out answer before question is completed
  - Has difficulty awaiting turn
  - Interrupts or intrudes others conversations or games.

Correct diagnosis of ADHD can be made by a physician when there is presence of at least six of the nine behaviours described above in the inattention type or the hyperactive – impulsive type and this behaviour should come across “often” in front of surrounding peoples and to a degree which is maladaptive and inconsistent with the child’s development level.

Along with these there should be presence of these behaviours in two or more setting for at least past 6 months.

#### **Management:**

Conventional medicines in Allopathy include some stimulant drugs containing amphetamines and methamphetamine and other popular drugs are Adderall, Ritalin, etc. Most parents of kids suffering kids are concerned about the serious side-effects of these drugs and they should be because these drugs may be permanently altering the brain chemistry of kids and their side-effects like irritability, anxiety, sleep disruption and reduced appetite, sudden tics etc. are worsen the life style of kids. Therefore instead of conventional ADHD medication, there is growing trend towards natural remedies in ADHD treatment because these alternative treatments are usually safer and well tolerated.

**Management of ADHD as per Ayurveda:**

*Ayurveda* is a system of traditional Indian therapies that includes *dosha* pacifying treatment, herbal and nutritional supplementation, *Abhyanga* (Massage), *Yoga* (including Meditation) for the treatment of physical and psychological disorders.

- **Dosha pacifying treatment:**

In Ayurveda, ADHD symptoms may be correlated with *vatananatmajavikarasatva-anavasthitatva* i.e., there is vitiation of *Vatadosha* which simultaneously vitiates *Pitta* and ameliorates *Kaphadosha* therefore, drugs having kaphavatashamak properties may help in breaking the *Srotorodha* and digestion of *Ama* that leads to the proper functioning of system of body and brain. Since *Vata* and *Manaa* are interrelated with each other because *Vata* is responsible for vitiation of *Sharirika* as well as *Manasikadosha* so, *MatraBasti* can be used for *Vatadosha* pacification after giving drugs having *kaphavatashamak* properties.

- **Some herbal medicines for ADHD suffering child –**

The drugs used for ADHD should be known to minimize Catecholaminergic (i.e., dopaminergic and noradrenergic) transmitter functions and to have an antidepressant

effect. Commonly prescribed ADHD drugs stimulate the brain cells to release more of the neurotransmitters called dopamine and nor-epinephrine, which generally enhance a child's ability to control impulsive behaviors and concentrate but they also cause increased activity in the central nervous system (CNS). In *Ayurveda* some herbal drugs i.e., *Medhyarasayan* like *Brahmi*, *Mandookaparni*, *Shankhpushpi* (Nervine tonic and mind soother) and *Ashwagandha*, *Tagar*, *Sarpagandha* (reduces hyperactivity) can be used as follows:

1. Trials of ***Brahmi*** (*Bacopamonnieri* Linn.) have established its beneficial effect on Cognition<sup>2</sup>, its memory enhancing effect<sup>3</sup> and its effect on ADHD<sup>4</sup>. It is known to boost neuronal transmission and to increase the levels of certain neurotransmitters in the brain. It is important phytochemicals are Bacosides A and B that improve the transmission of impulses between neurons and also repair the synapses between nerves as well as damaged neurons.

2. Trials of ***Mandookaparni*** (*Centellaasiatica* Linn.) have established its beneficial effect on cognition and oxidative stress. It increases power of concentration and attention in children. It improves

intelligence, concentration, retention of memory i.e., have an anabolic and adaptogenic effect<sup>5</sup>.

3. *Ashwagandha* (*Withaniasomnifera* Linn.) has a Nootropic like effect<sup>6</sup> and also has anxiolytic and antidepressant activity.

4. *Tagar* (*Vallerianwallichii* DC) is known to have a beneficial effect on performance and alertness<sup>7</sup> as well as on GABA receptors<sup>8</sup>.

- **Abhyanga (massage), Yoga (Meditation) Exercise therapy:**

Medications and behavioral modification can manage the symptoms of ADHD, but they cannot cure the disorder. Massage and exercise therapy are equally successful and are significantly more effective for behavioral modification than medication alone in school aged patients. Numerous research studies support the use of regular yoga for kids with ADHD (Rojas 2005, Weber 2007). One study showed that yoga improves attention and behavior in school-age boys that were already stabilized on medication, compared to boys on medication only (Jensen 2004). Another study, randomly selected children with ADHD to practice either yoga or traditional exercise (Haffner 2006). The children who performed yoga improved attention and had fewer ADHD symptoms versus the exercise group.

Overall, yoga can have similar effectiveness to medication and better effectiveness than behavioral therapy for the treatment of children with ADHD. For relieving stress ADHD suffering kids can do meditation, *Suryanamaskar*, *Pranayam* (Deep breathing pattern), *Shavasana* (Lie down on floor in very relaxed position deepen breathe, it helps CNS to switch from a sympathetic mode, which is a “fight-or-flight” state, to a parasympathetic mode, which is a nourishing and restorative state). Furthermore, there are no side effects whatsoever except for improved behavior, better school performance and higher self-esteem.

- **Parenting tips and diet planned for ADHD suffering Child:**

1. Advise parents to make their child feel loved and make the environment cool and calm with careful monitoring of child's behavior and follow the diet planned by their doctor.
2. Give homemade protein rich food in morning to improve concentration and plenty of water
3. Avoid refrigerated food.
4. Give multivitamin and mineral specially vit. B<sub>6</sub> and B<sub>12</sub> rich food because vit. B<sub>6</sub> deficiency produces symptoms resembling

those of ADHD and it is also required for the production of neurotransmitters such as Dopamine (DA), Serotonin, Norepinephrin. Minerals like Zinc supplements can resolve hyperactivity and inattention symptoms of ADHD. It is also involved in the regulation of NTs especially Dopamine, which is the most important NTs in ADHD.

5. Limit watching time of Television and playing video game.

## DISCUSSION

By *Ayurveda* management, disease progression can be retarded and can be cured. In the disease discussed above, *vaat-prakopa* (vitiation of *Vaata*) symptoms are presented. So, *vaat-shamak* treatment is very helpful here with a rationale combination of *Medhya* drugs (nervine tonics) and proper parenting tips.

## CONCLUSION

A wide screening of these types of children is needed, so that a wiser and early step can be forwarded. *Ayurveda* therapies, specially yoga, *Medhya* drugs, and preventive measures are very helpful in ADHD children, which will bring ray of hope both for children and the society.

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