

Yoga Therapy Treatment
For
Attention Deficit Hyperactivity Disorder

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Medical View

Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD) are two names used to describe the exact same childhood condition that is characterized by a persistent pattern of inattention and / or hyperactivity.

The medical community strongly believes that ADHD is a condition that exists due to neurological imbalances in the brain, where certain neurotransmitters, which help to send messages to the brain, are either lacking completely or are lower in quantity in people with ADHD. The explanation for the lack or decreased quantity of neurotransmitters appears to be genetic since children diagnosed with ADHD, often have family members with ADHD as well. However, at this time, medical research is unable to identify the chromosomes that may be responsible for the condition. They also state that brain development problems in-utero or immediately following birth may also contribute to later diagnosis of ADHD, such as a developing brain's exposure to radiation or alcohol. The medical world does not support the theory that food additives and refined sugar contribute to ADHD symptoms, but do recognize that artificial food colouring does increase hyperactivity in all children, not just those diagnosed with ADHD. Despite their belief that ADHD is a completely neurological disorder, researchers have identified people with ADHD as especially sensitive to sensory stimuli such as noise, touch, and visual cues. They can easily be over-stimulated, which leads to changes in behaviour that may include aggressiveness.

Analysis of condition

The medical world currently views ADHD as a mental disorder where symptoms appear prior to the age of seven years old and occur over a long period of time and in at least 2 different settings, involving impaired or diminished attention, impulsivity and hyperactivity causing affected children to act without thinking and to have trouble focusing.

Researchers in the medical world believe that children coping with ADHD may understand what is expected of them in social, academic and home environments, but are unable to follow through and function in these environments because they can't sit still, pay attention or attend to details.

Researchers have also found that ADHD affects an average of 5% to 15% of Canadian school aged children, with boys being diagnosed three times more often than girls, but for this, they have no explanation. In many cases, this disorder persists into adulthood, making it difficult for affected adults to integrate into social and work-related settings. Medical personnel believe that ADHD can not be cured, but can be successfully managed through the implementation of a individualized long-term plan where the goal is to help the child learn to control his or her own behaviour and to help the child's family create an atmosphere in which this is most likely to happen.

Symptoms of condition

Symptoms for ADHD have been categorized into three subtypes:

1. An inattentive type, whose patterns of behaviour include:
 - An inability to pay attention to details and therefore make careless errors
 - Difficulty sustaining attention in play activities and following instructions
 - Listening problems
 - Children tend to be unorganized, easily distracted, and forgetful and often avoid tasks that require mental effort.

2. A hyperactive-impulsive type
 - Fidget often and find it difficult to remain seated
 - Excessive running, climbing and talking
 - Find it very difficult to play quietly
 - Impatient, finding it difficult to wait for their turn or in a line, or allowing a question to be fully heard before blurting out the answer, so they often interrupt or intrude.

3. Combined type
 - A combination of the other two types and is the most common.

In addition to the previous symptoms, it is not uncommon for those with ADHD to experience other disorders such as learning disabilities, Tourette's syndrome, language and vocabulary problems, conduct disorder, autism, anxiety and depression.

Lifestyle assessment / contributing factors affecting condition

Since ADHD tends to appear commonly within families, the medical world concludes that this is a genetic disorder, though they have no research to support this theory and have yet to make a genetic or chromosome connection to the disease. ADHD however is most common among children whose mothers smoked tobacco or drank alcohol during pregnancy, as these pollutants can reduce activity of the neurons that produce neurotransmitters in the child's developing brain. ADHD is also common amongst children born to mothers suffering from difficult pregnancies or born with a low birth weight. Children that experience head injuries, particularly to the frontal lobe are at risk for ADHD, as are children exposed to toxins such as lead or PCB's early in life, as they interfere with brain development.

Medical treatments

Diagnosis for ADHD is evaluation based and generally performed by family doctors or pediatricians. Initially the evaluation is based on physical and behavioural characteristics and used as a process of elimination to avoid misdiagnosis for other traumas in their life, such as divorce, bullying or a recent relocation, interactions between medications or allergies. A doctor will also assess for extreme stresses such as depression or anxiety.

Once ADHD has been officially diagnosed, a treatment plan including medication and behavioural therapy is initiated. Medical treatments for ADHD include using stimulants several times a day and often include side effects such as decreased appetite, stomachache, irritability and insomnia. Stimulants such as Methylphenidate, Lisdexamfetamine or Dextroamphetamine help to filter out unnecessary distractions by stimulating the area of the brain that does not have sufficient production of neurotransmitters. Also used to treat ADHD is a medication called Atomoxetine, which helps increase the levels of a specific neurotransmitter known as norepinephrine which allows children to concentrate for longer periods of time. In 2003, non-stimulants were approved for treating ADHD, which have fewer side effects than stimulants, and antidepressants are used with caution because the Food and Drug Administration in the United States has determined they may lead to an increased risk of suicide in children and teens. Often individual children respond differently to medications, so a trial and error method of prescribing these various medications in various doses is necessary.

At this point in time, Ritalin is the most commonly prescribed medication for the treatment of children living with ADHD. Long-term side effects have been detected and research shows that early life use of Ritalin actually disrupts the development of brain cells in the hippocampus, a region of the brain critical to memory, spatial navigation, and behavioural inhibition. Damage can lead to memory problems, disorientation and depression in adulthood.

Behavioural therapy is often combined with medical therapy, as the medical community believes this makes the medications more effective. Strategies that have proven to work well for children with ADHD include creating a routine, getting organized, where personal belongings get put in the same place everyday, avoiding distractions, limiting choices, using goals and rewards and effective discipline and helping the child discover their talent. In addition, people with ADHD are encouraged to exercise regularly and maintain good nutritional and sleeping habits as well as to avoid caffeine, large meals and stressful activities.

Yogic view

Physical: structural alignment & doshic assessment

Ayurveda principles clearly access the symptoms of ADHD as a Vata imbalance. Understanding vata as the dosha which controls movement, activity and communication, where energy comes in bursts and presents with scattered qualities, along with the concept that ‘like stimulates like’ in terms of all doshas, it becomes evident any over-stimulation or aggravation to a child that is already vata imbalanced, will increase activity and therefore the symptoms of ADHD. Managing the child’s symptoms becomes possible by balancing their vata constitution.

Children diagnosed with ADHD possess classic symptoms of a vata imbalance, including an abundance of nervous energy and a tendency to fidget when sitting. They also have a tendency to move, talk and eat quickly and dislike cold and windy climates. Generally those with an imbalanced vata constitution have an irregular appetite where elimination often tends towards constipation, fast metabolism and difficulty gaining weight, all common symptoms of children diagnosed with ADHD. An attraction towards sweet foods and an inability to focus leads to snacking as opposed to planning for and preparing a complete meal, even into adulthood. In addition, children with ADHD share common physical traits, which coincide with a vata imbalance, including dry nails that tend to break easily and small eyes with dark circles, along with small, dry, rough lips.

Therefore, factors that contribute to a vata imbalance and ADHD include cold, over stimulating environments as well as cold, sweet foods and excessive activity.

To balance vata in terms of purifying annamayakosha. warm, dense, grounding foods should be a regular part of the child’s diet, making every effort to eliminate artificial sugars and reduce natural ones, as sugars tend to scatter our minds and once refined become difficult to digest, especially for a weak, vata digestive system. Annamayakosha would be better served by incorporating whole grains, root vegetables (squash, zucchini) and warm foods into a regular, established diet. Digesting all these grounding foods would be best complimented in a calm environment, with little stimulation to disturb digestion, such as watching television.

Asanas that assist in purifying annamayakosha for those suffering from ADHD include those that are grounding, stabilizing and calming. With the seat of vata being in the colon, seated postures are preferable. Though forward folds are efficient at calming the mind and turning awareness inwards, they should be done with caution as they also put pressure on the abdomen and strengthen vata. Standing postures ground and root the legs, which increase balance and mental alertness leading to a feeling of connectedness to the earth, physical, body and spirit. Those suffering from ADHD, often will benefit from standing postures as they often do feel a disconnect to their true self and others in their life, making it difficult to make friends and establish social and work relationships. Inversions should be used to balance vata and manage ADHD, as they stimulate udana vayu which controls speech and senses, which, when in balance can begin to filter what

the senses absorb and slow down speech and movement. Inversions also quiet the mind, which increase concentration. Twists should also be incorporated into a regular, daily yoga practice as a way to decongest and sooth the Childs nervous system and calm restless and hyper activity, followed by one or two balancing postures, held only for a few moments to increase focus and concentration.

Energy: Prana & chakra assessment

ADHD is definitely a condition of the mind, as science confirms that those suffering with this condition actually show lower levels of function in their cerebral cortex, the area of the brain that governs depression, alienation and apathy. Resting in the same region as Sahasrara, our 7th chakra that governs confusion, boredom and learning problems. Sahasrara also relates directly to our pineal gland, the one that controls our wake /sleep patterns by producing melatonin. These patterns are often disturbed and restless for children suffering from ADHD. When the vrittis of sahasrara are over stimulated, the Childs mind becomes congested and focus becomes extremely difficult. During this time of imbalance, the child is unable to filter out unnecessary stimulants, anxiety mounts, breathing becomes rapid and bouts of anger and frustration are not uncommon.

Pranamayakosha is therefore aggravated during times of uncertainly, shock and instances where a child may feel helpless or unaware as to what will happen next. Purifying pranamayakosha is possible through an established, specific daily routine and sleep routine. Going to bed at the same time each night, following a consistent nighttime routine will help. Engaging Mula banda during sessions of guided imagery involving warming thoughts would be extremely beneficial in aiding a child with ADHD achieve an uninterrupted, restful sleep. Breath counting is also essential to balancing sahasrara, ideally leading a child to a full count of 6 on each inhale and exhale. Grounding, non-stimulating, restful asanas will also aid in slowing down the activity in the child's mind especially those where breath counting is encouraged, such a bridge where the child can place her or her hands on the belly to feel the breath rising and falling, along with a supported or modified headstand to stimulate and clear the pineal gland, for a child that may not be focused enough to engage in the full posture. Encouraging yoga mudra during brief moments of meditation (1-2 minutes) will effectively reduce the melatonin production, therefore decongesting the vrittis of sahasrara, leading towards mental clarity.

Psycho-emotional: mental & emotional assessment

On a psycho-emotional level, stress related mood swings; angry outbursts and impulsivity are common among children living with ADHD. Their impulsivity and lack of patience leads them to often react inappropriately in social settings, making it difficult for them to make and maintain friends. Although naturally creative and spiritual individuals, children suffering from ADHD are so ungrounded due to their vata imbalance that they find it difficult to maintain focus long enough to actually complete any of their creative tasks. Chronic aggravation of vata, leads difficulty coping with stress and following

instructions. Children with ADHD often live with complicated school relationships. They also lack body awareness, confidence and the ability to play by the rules, therefore are less likely to play team sports or participate in physical activity, so are often left to amuse themselves, which, combined with a need for a busy, active body leads to impatience with self, others and their surroundings. Their scattered mind, emotions and lack of coordination make it difficult for these children to express themselves, their feelings of their needs clearly, creating feelings of helplessness. Purifying manomayakoska needs to involve grounding activities in supportive environments. Routines, steadiness and positive reinforcement are essential. Yoga asanas and principles fit all of those requirements by providing physical fitness without competition and a safe way to explore the physical self.

Wisdom: higher-self identity assessment

The ADHD brain is unable to sort through an overload of sensory stimuli, thus making it difficult to access the mental space in the brain necessary for introspection, therefore children with ADHD lack self awareness and although they are often of above average intelligence, they seem unaware of their condition and of their differences to other children. This leads to frustration with the world. Vijnanamayakosha is strengthened through yoga postures that create self-awareness and self-perception. As these children are also quite creative, their potential is often unfulfilled as they lack the focus to complete their tasks, therefore short, positive routines, such as sun salutations that establish order can be a very effective way of managing ADHD. These systematic patterns of movement help organize the brain and provide consistent reliable patterning along with the progressive challenges that ADHD people require to sustain long-term interest in an activity. Finally, padma mudra (lotus flower) should be included regularly in yoga practices and other daily activities to balance all doshas and higher charkas.

Bliss: spiritual issues assessment

Difficulty focusing and meditating make it hard for children living with ADHD to access their true self, although they are often highly intelligent and spiritual. The most effective way to embrace their bliss body and purify anandamayakosha for these children is to provide a quiet environment, which includes indoor and outdoor safe play. Their bedroom should also be quiet, warm in temperature and in paint colour to decrease any aggravation to their already high vata dosha. Warm baths may soothe their senses enough to provide glimpses into their spiritual self along with seated activities including painting and colouring that allow their creative nature to flourish while engaging the seat of vata, the colon. In essence, providing children living with ADHD an inviting place to feel secure and confident enough to do what they enjoy without excessive stimulants or judgments will bring them peace and bliss.

Healing program: yogic therapies

Annamayakosha

The key to balancing the doshas and the koshas for a child living with a hyperactivity disorder is a consistent routine, one which allows for a reduction of vata's airy and scattered tendencies, in a calming environment with little stimulants and distraction where room exists within the asana practice for challenge and progression.

A child's daily routine should begin in a warm room or climate with minimal lighting as the pineal gland has optic qualities that include sensitivity to light in an already hyper sensitive and aware child. Grounding exercise should be performed upon waking as vatas heightened period is likely coming to an end. Their asana practice should include forward, lateral and backbends to help kids coordinate their bodies in space. As well as balancing postures which children naturally gravitate towards (skateboards, swings, tumbling) as it excites the vestibular system, the inner ears vestibular system that allows them to judge their position in space and informs the brain to keep you upright.

In terms of annamayakosha, reducing vata and symptoms of ADHD requires consistency with warming and grounding asanas and diet and improve digestion for vatas weak digestive system. Repetition of these postures will put pressure on our pineal gland to positively influence our hormones and create balance and unscatter the mind. Asanas should be practiced in a warm room.

Morning practice:

1. Sun salutations should be practiced in the morning as they increase heart rate, improve circulation and warm the body, but also because they are composed of complex patterns of movement, made even more complex with the addition of breathing techniques. Downward Dog helps to balance the energy between the feet and the crown chakra, therefore increasing a connectedness to between body and mind. An ADHD mind requires this complex pattern to keep focus and maintain interest in the activity, as its crown chakra is out of balance and it most concerned with coordination.

2. Rabbit (Hare) because it is grounding and puts pressure on the colon (seat of vata), as well as sahasrara. A very calming pose because distractions are limited as eyes are closed and the head is to the ground. The crown chakra can then feel the support of the earth and the child can begin to establish his rightful place in the world.

3. Chair is heating and grounding. It allows the lower charkas to root and upper charkas to rise and brighten. In time mula bandha and jalandhara bandha can be added to the posture to retain the heat, needed to balance the vata dosha, focus, improves balance, connectedness to ground

Slow down and control actions in a non-competitive atmosphere

4. Bridge – grounding and warming. Calms the brain and improves digestion for vatas weak digestive system. Therapeutic for stress and therefore helps to calm the mind so scattered voices and stimulants can be separated and eventually compartmentalized.

5. Plough – calms the brain, stretches the shoulders and spine to improve flow of prana to the upper charkas. Reduced stress and fatigue often felt by children coping with ADHD as they rarely get a break from the distractions in their environment and mind. This is also a posture where progression is easily identifiable so it will keep the child's interest between classes and reward the child with a sense of accomplishment, which they are rarely able to feel, due to being too distracted to complete most tasks. Restores calm and clarity of mind after a long illness. It alleviates the affects of stress and strain by resting the eyes (avoid external distractions) and therefore the mind.

Evening asanas

1. Paschimottanasana – calms the brain and relieves stress and roots the lower charkas to the ground, while connecting the upper charkas in towards the body to establish a sense of connectedness to the body and the earth. Children living with ADHD need a place to feel secure in the world and often are unable to bring their focus inwards to nourish both annamayakosha and anandamayakosha.

2. Cobra – grounding, lifts upper charkas. Stimulates abdominal organs, relieves stress. Repeating the Mantra 'Thung' eight times establishes a connection to the crown chakra and influences the hormones (melatonin) secreted by the pineal gland to regulate, which further regulates the rhythms of the body, particularly wake and sleep patterns to aid in slowing the mind and preparing for and uninterrupted sleep.

3. Cakravakasana – to create space between the vertebrae and put pressure on the crown chakra. Also to create a connection between the body and earth as the knees remain rooted and the colon (seat of vata) reaches to the floor. This posture will also help the child to begin coping with distractions. By moving in sync with each inhale and exhale, the child may be able to gradually remain focused on their breathing pattern while rising from balasana to table, avoiding distractions along the way that their mind would otherwise be attracted to.

4. Salamba Sirsasana - supported headstand improves the function of the pineal gland by bringing additional blood flow to the brain, according to yoga master B.K.S. Iyengar. Practiced regularly, this posture widens your spiritual views and enhances clarity of thought. Increases your concentration span and sharpens memory. Calms the brain and helps relieve stress and mild depression
Stimulates the pituitary and pineal glands, improves digestion.

5. Savasana – allows the neck to dip to the floor to feel a soothing sensation in the back of the brain, when this area relaxes, move onto the front of the brain. From the crown of the head, the energy should descend down in a spiral action toward the bridge of your

nose and down to a point located at the sternum. When the energy reaches this point, the three layers and five sheaths that comprise your body come together and are intergraded into a single harmonious whole. – B.K.S. Iyengar.

Dietary & Nutrition Recommendations

Treating the mind and body of a child living with ADHD also involves supplying them with a nourishing diet filled with warm, dense foods. Annamayakosha will benefit from a diet of oatmeal with warm milk in the morning, followed by some yogurt and unsalted nuts. Lunch and dinner should be protein rich and include any of the following: eggs, cheese, warm whole wheat pasta, basmati rice, baked potatoes, grain breads and quinoa for warmth and grounding root vegetables such as tomatoes, pumpkin and carrots can be grilled or combined in hearty soups. Grounding and vata balancing spices like basil, oregano and ginger will also assist annamayakosha, especially when included in warm soups made from fresh root vegetables. Fresh fruits and juices served no colder than room temperature and fresh, hearty vegetables like beets and avocados also help to reduce vata. Caffeine, sugars and processed foods should be avoided as they congest the digestive system and scatter the mind.

Pranamayakosha

Pranamayakosha can be settled and soothed by some Nodi Shodana. Children will benefit because exercises that use opposite parts of the body can help learning difficulties and improve brain coordination and function and with the addition of Jalandhara banda – stimulates vagus nerve, which regulates sympathetic nervous system. Often children, especially those with ADHD may resist breathing techniques, but it's still encouraged to explain and demonstrate the process, as they will likely imitate. Nadi shodana is soothing, comforting and calming. It balances ida and pingala (both hemispheres of the brain) to promote wholeness and body, mind, spirit connection.

3-part breathing activates the parasympathetic nervous system, which activates in the lower spine with deeper breathing from the lower lungs to induce relaxation and stress reduction.

Manomayakosha

Activating Manomayakosha for children can be very easy and effective. Children love be noisy, especially those with ADHD, however we need to control their environment and provide them with the proper environment and guidelines. Kirtan is an excellent way to purify manomayakosha as it allows the child's muscles to move as they please, regardless of it being in sync. Simple repetitive mantras will also help to bring focus to the scattered mind and allow the child to push out unwanted distractions one mantra at a time.

Appreciated self-service can also be incredibly effective in nourishing manomayakosha in the treatment of ADHD. These children often experience difficulty expressing their

needs to peers and adults, but if we can provide them with a safe environment, which is warm, accepting and stable, they may be able to start expressing themselves to a receptive, consistent caregiver. From there, once patterns are established, the care giver, anticipating the child's patterns can make the necessary provisions for the child to help himself, leading the child to a time where he can gradually complete the task from beginning to end and experience the satisfaction of completing the process. This can be incredibly empowering for a child and an integral part of healing. These techniques should be used throughout the day and before bed, not just in yoga class.

Vijnanamayakosha

Vijnanamayakoska is best nourished through brief 1 minute mediations, either following an asana practice, or in a warm bath following a gentle massage with sesame oil, which can soak directly into the pores to balance vata. Protecting the crown chakra from unnecessary irritations is key to healing; therefore protect the head and ears from cold air, irrelevant noise and scattering, overbearing images such as television and video games.

Anandamayakosha

Anandamayakosha can be achieved by allowing the child to do anything that brings joy, particularly creative activities where they can sit and activate their vata seat, in a warm room painted in calming colours. As the child's mind and body begin to sync, concentration will improve and the child may finally begin to separate his or her physical self from their higher self. They will be able to move into adulthood with a greater sense of self and purpose.

The greatest fallout from any stimulant medication is lifelong dependency and possible side effects from long-term use. Yoga and healthy living are lifelong dependencies children can live with, and the side effects of long-term use are extremely beneficial.

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