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# Could pranayama and ekapadasana be an alternative modality in the management of Attention Deficit Hyperactivity Disorder in children ?

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### ABSTRACT

ADHD is the most commonly studied and diagnosed psychiatric disorder in children, affecting about 3% to 5% of children globally. The symptoms are frequently commingled with learning problems, oppositional conduct, and depression, which altogether compound the family's emotional burden. Mounting controversy over the widespread use of drugs in the management of Attention Deficit Hyperactivity Disorder in children, and possible life-threatening effects from its long-term use make it imperative that alternative modalities be implemented for ADHD management. Parents and children express desperation for interventions that will work, but without the adverse effects inflicted by the pharmaceutical management model. Research has proved that an effective alternative modality for treating ADHD in otherwise physically and mentally healthy children would be the regular dedicated practice of the ANULOM – VILOM PRANAYAMA PROCEDURE and the EKA PADASANA by the affected child above age 8-9 yrs and her/his parent, because it has been noted that children practice regularly only if accompanied by their guardians. The benefits are seen immediately, but last only until the procedures are practiced. Hence, to maintain the benefits, daily practice is essential. The results therefore depend on the dedication of the parents towards the child's improvement.

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Attention-Deficit Hyperactivity Disorder (ADHD or AD/HD or ADD) is a neurobehavioural[1] developmental disorder. [2] It is primarily characterized by "the co-existence of attentional problems and hyperactivity, with each behaviour occurring infrequently alone" and the symptoms starting before seven years of age. [3] ADHD is the most commonly studied and diagnosed psychiatric disorder in children, affecting about 3% to 5% of children globally[4][5] and is diagnosed in about 2% to 16% of school aged children.[6] It is a chronic disorder[7] with 30% to 50% of those individuals diagnosed in childhood continuing to have symptoms into adulthood. [8][9] Adolescents and adults with ADHD tend to develop coping mechanisms to compensate for some or all of their impairments.[10] 4.7 percent of American adults are estimated to live with ADHD.[11]

ADHD is the most prevalent behavioural disorder in children [12] and its symptoms

are frequently commingled with learning problems, oppositional conduct, and depression, which altogether compound the family's emotional burden. Particularly, since the dominant mode of treatment to date has involved the drug methylphenidate (Ritalin[R]), which acts on the CNS much like cocaine and has marked potential for severe side-effects and addictive abuse, ADHD has become a lightning rod for controversy. The scientific literature on ADHD is voluminous, with more than 4,000 peer-reviewed articles published since 1966 [13]. An intense debate has developed around the diagnosis, aetiology and the medical management of ADHD. Parent groups, consumer advocacy organizations and progressive physicians are calling for alternatives to methylphenidate and the many other potent stimulants which are used to treat ADHD, while pharmaceutical interests and physicians who are particularly oriented to prescribing pharmaceuticals attempt to defend the status quo (currently in the United States, between 1.5 million and 3 million ADHD children are most probably taking methylphenidate).

Psychostimulant medications are generally the first choice in the medication of ADHD. Currently, methylphenidate is the drug of choice; other first-line stimulants include dextroamphetamine (Dexedrine[R]) or a

mixture of four salts of dextroamphetamine (Adderall[R]) [14,15]. The second-line stimulants include methamphetamine (Desoxyn[R], the longer-lasting Desoxyn Gradumet[R]), or pemoline (Cylert[R]), which causes hepatotoxicity in about three percent of the subjects who are treated and can cause death. So, they must be closely monitored. In practice, the use of any of these stimulants is so fraught with uncertainties and potential complications, that only the most intrepid practitioners prescribe them with comfort [16,17].

The psychostimulants ought to be severely limited in their applicability, due to marked side effects and sometimes severe adverse effects [17]. Decreased appetite secondary to anorexia or nausea may occur, leading to weight loss. Insomnia may also occur, as can headache. Lowering the dose and changing the timing may eliminate these side-effects. Rarely, psychostimulants may cause tics to develop and cases of leukopenia and psychosis have been reported [18]. Methylphenidate (Ritalin), dextroamphetamine (Dexedrine) and Adderall are all classified as Schedule II agents in the U.S and are consonant with their significant abuse potential [18]. As the blood levels of the stimulant decrease over time, irritability may manifest as a "rebound" type of withdrawal symptom.

Some subjects are very prone to abusing stimulants and must be placed on non-stimulant, alternative medications. A subgroup with more depression and anxiety may respond better to tricyclic antidepressants (imipramine, desipramine) than to stimulants [19], although both can have major adverse effects, with desipramine linked to sudden death [18]. The antidepressant bupropion (Wellbutrin) can, like the stimulants, exacerbate an underlying tic disorder. This drug is also contraindicated in children with anorexia nervosa, bulimia, or epilepsy. ADHD subjects have a higher risk of moving into drug abuse [9] and there is now a trend towards placing ADHD children on Prozac[R], the withdrawal from which has been linked to violence and other possibly disastrous outcomes [18].

Certain non-stimulant medications can serve as allopathic alternatives in ADHD when stimulants have failed. Among these are the

alpha-adrenergics clonidine (Catapres[R]) and guanfacine (Tenex[R]). Both are less well validated than the stimulants and not as efficacious. Clonidine can cause sedation and dysphoria, and both of these drugs require blood pressure monitoring because they are also antihypertensives [19].

Mounting controversy over the widespread use of methylphenidate and possible life-threatening effects from its long-term use make it imperative that alternative modalities be implemented for ADHD management. For the afflicted individual, until the ADHD symptomatology can be recognized and brought under medical management, daily existence is likely to be severely compromised along with the lives of those around him (or her, although ADHD is more prevalent in boys by a 3:1 margin) [13]. Parents and children express desperation for interventions that will work, but without the adverse effects inflicted by the pharmaceutical management model.

An effective alternative modality for treating ADHD in otherwise physically and mentally healthy children would be the regular, dedicated practice of the ANULOM – VILOM PRANAYAMA PROCEDURE and the EKA PADASANA by the affected child above age 8-9 yrs and her/his parent, because it has been noted that children practice regularly only if accompanied by their guardians.

THE ANULOM – VILOM PRANAYAMA PROCEDURE: Prana breathed in through the left nostril represents the energy of the moon, which symbolizes peace and has a cooling effect. Hence, for the purification of the Nadis, the beginning of this Pranayama has to be made from the left nostril. It is performed with eyes closed. Hold and close the right nasal passage with the thumb and breathe in slowly from the left. Now, open the right nasal passage and close the left nasal passage with the middle finger and breathe out slowly from the right nasal passage. Now, breathe in from the right nasal passage slowly. Now, close the right nasal passage and open the left one and breathe out slowly from the left nasal passage and repeat the cycle. The child has to practice three cycles, once daily at a specified time, 15 minutes before meals / on an empty stomach and after urination. The regular practice of this Pranayama has the

capacity of cleansing all the innumerable Nadis in the body, which makes the body healthy, lustrous and strong.

**EKA- PADASANA:** Eka padasana or the one foot pose strengthens the arms and legs and improves coordination. The child stands on one foot, while the other foot rests on the standing foot's thigh. Both the hands are extended above and held in a namaste pose above the head for a tolerable period of time without pressure.

A child who is already taking medications should not abruptly stop medications, because this can lead to withdrawal symptoms and unnecessary problems for the parent and the child. Hence, the paediatrician (psychiatrist/physician) who had prescribed the medication should be consulted before taking any decision regarding drug withdrawal. The ANULOM – VILOM PRANAYAMA PROCEDURE and EKA PADASANA can be practiced by these children while on medications and on withdrawal too. Parents of children suffering from mental illness and respiratory and cardiac disorders should consult their child's doctor before starting to practice the anulom - vilom pranayama. Children with physical deformity should not (not be forced to) perform ekapadasana

#### Conclusion:

Anulom- vilom pranayama and ekapadasana could prove to be an effective alternative modality for treating children with ADHD. Experience shows that the right age to start would be 8-9 years and that either mother / father should accompany the child, in a happy, relaxed and loving mood, while he/she practices pranayama and ekapadasana in order to maintain adherence. The benefits are seen immediately, but last only until the procedures are practiced. Hence, to maintain the benefits, daily practice is essential. The results therefore depend on the dedication of the parents towards the child's improvement.

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