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Article: **Massage Therapy for the treatment of attention/hyperactivity disorder (ADHD) in children and adolescents: A systematic review and meta-analysis**

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Abstract

Objective

To summarize the current evidence on the effects and safety of massage therapy for the treatment of ADHD in children and adolescents.

Method

A systematic review of 8 randomized controlled trials (RCTs) and 3 case series studies was conducted with a meta-analysis of 4 of the RCTs.

Results

Pooled analysis showed that massage produced more improvement in ADHD symptoms in terms of effective rate compared to Ritalin (risk ratio: 1.39, 95%CI: 1.16 – 1.66; P = 0.0004). Individual RCTs suggested that massage was differed significantly from waitlist control in improving the conditions of anxious–passive (mean difference: −11.7; 95%CI [−17.84, −5.56]; P = 0.0002), and asocial behavior (mean difference = − 8.60; 95%CI [−15.87, −1.33]; P = 0.02).

Conclusion

Evidence suggests that massage therapy is beneficial for treating ADHD in children and adolescents.

 Attention deficit/hyperactivity disorder (ADHD) is one of the most prevalent of childhood neurobehavioral disorders, which has three core symptoms – inattention, [impulsivity](https://www.sciencedirect.com/topics/medicine-and-dentistry/impulsiveness), and hyperactivity. Individuals with symptoms of ADHD have been found to have strained family relations, academic problems, and negative social relations. About two thirds (63.8%) of children with current ADHD have one or more [comorbidities](https://www.sciencedirect.com/topics/nursing-and-health-professions/comorbidity), with behavioral and conduct disturbance (51.5%) being the most common, followed by anxiety (32.7%), depression (16.8%), [autism spectrum disorder](https://www.sciencedirect.com/topics/nursing-and-health-professions/autism) (13.7%), and [Tourette syndrome](https://www.sciencedirect.com/topics/nursing-and-health-professions/gilles-de-la-tourette-syndrome) (1.2%).

 The American Academy of Pediatrics (AAP) recommends the use of medications and [behavioral therapy](https://www.sciencedirect.com/topics/nursing-and-health-professions/behaviour-therapy) to treat ADHD symptoms.[8](https://www.sciencedirect.com/science/article/pii/S0965229918309154%22%20%5Cl%20%22bib0040) Both medications and behavioral therapy are effective at improving ADHD symptoms. However, medications produce symptomatic improvements in the short term only and some, such as [stimulants](https://www.sciencedirect.com/topics/nursing-and-health-professions/central-stimulant-agent), may have adverse side effects .In addition, medication therapy alone is insufficient to improve dysfunctions associated with ADHD.

 Behavioral therapy is strongly recommended for children and adolescents of all ages, as being effective and providing opportunities for communication between parents/caregivers and the children. However, it inquires high costs and very high family involvement.

 More than 50% of patients in the U.S. have used complementary and alternative therapies, like dietary therapy, herbal therapy, biofeedback therapy, attention training, homeopathy, acupuncture and massage.

 Previous reviews suggest that Massage therapy has beneficial effects on pediatric populations in the affective, physiological, and behavioral dimensions. This systematic review summarizes the current evidences on the effects and safety of massage therapy for the treatment of ADHD in children and adolescents.

This review includes studies that targeted children aged 18 or younger, diagnosed with ADHD , and Massager Therapy used as intervention.

Massage was defined as the manipulation of the soft tissues of the body by hands in order to produce effects on the muscular, vascular, and nervous systems. There was no restriction on its theoretical basis or cultural practice. Massage could be delivered by therapists, parents, or other health care professionals.

 The research included studies that assessed improvements in the core symptoms of ADHD, including inattention, [impulsivity](https://www.sciencedirect.com/topics/medicine-and-dentistry/impulsiveness), and [hyperactivity](https://www.sciencedirect.com/topics/nursing-and-health-professions/hyperactivity), measured using validated rating scales. Other secondary outcomes included intelligence, school or academic performance, moods and behavior, family and social outcomes, quality of life, and adverse events.

The study used database from USA, China, Taiwan ,England and Switzerland.

Subjects ranged in age from 3 to 18 years, with more males than female participants.

A combination of different massage techniques were used, such as Swedish, craniosacral, manual lymph drainage and acupressure. The duration of massage intervention averaged 30 minutes, treatment period was mostly 1 month, with a frequency ranging from 2 times per day to once a week, with most being once a week. Most of the time, the manipulations were performed by therapists.

As of the quality of the assessment, in all of these studies it was found to be impossible to completely blind the subjects and manipulators. Hence, the domain was rated as high risk of performance bias.

Here are found effects of the interventions:

MT vs no treatment: Compared with the wait-list control group, subjects in the MT group demonstrated significantly better improvements in anxiety passive score and asocial score as measured by Conner’s Teacher Rating Scale; no significant differences in salivary cortisol level or Children’s Pain/Fear Thermometer rating Scale.

MT vs Relaxation Therapy: A single study reported that Western MT was more effective than Relaxation Therapy, as measured by Conner’s Teacher Rating Scale . Teachers also reported MT receivers spent more time on tasks in the classroom

MT vs methylphenidate: Analysis shows TCM massage therapy as more effective for ADHD treatment, had better rating on Conner’s Parent Scale improvement in hyperactivity.

MT vs exercise therapy vs no treatment: Positive effects in term of improved concentration, flexibility, mood, sleep and social functioning, as assessed by the nurse. MT group had better rating on Conner’s Parent Rating Scale at 6 and 12 weeks, and better Conner’s Teacher Rating Scale at week 6.

Higher effective rate in MT combined with sensory integration training vs Sensory integration training alone.

 Two studies reported adverse events. One reported that 1 subject in the TCM massage group exhibited aggressive behavior after the first week of treatment, which was controlled after the second week of treatment. One reported that 1 subject (2.6%) in the TCM massage group suffered from diarrhea.

 The results of this meta-analysis does mention some uncertainty and bias because of the inability to blind the participants, low methodological quality and large heterogeneity. However, upon the review is concluded that Massage has positive effects on the children and adolescents with ADHD. Studies reported reduction in asocial behavior, aggressive behavior and anxiety. Massage was found to be superior to exercise and relaxation therapy, enhancing the outcome of sensory integration training and even more treatment efficacy than the methylphenidate users.

 The Chinese database show positive effects of TCM massage, using acupressure along meridians. However it is interesting to remark that researchers are also arguing that there is little difference in effect between stimulation of acu-points and non-acupoint sites. A sham intervention is proposed to be included in future studies, with blinding of the receiver for accuracy of results. Some studies suggest that the reduction in aggression and anxiety might have been influenced by the relationship developed between the manipulators/parents/ therapists during administration of treatment, which is a great accomplishment either way, because of noted increase in the socialization of the child and furthermore , decrease of parental anxiety.

 Further studies are recommended.

Conclusion: Evidence suggests that Massage Therapy is beneficial for treating ADHD in children and adolescents.

Summarized by Irina Borges, LMT, CIMT, CPMT, ASD Touch Therapy