



ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

Individuals with Attention Deficit Hyperactivity Disorder (ADHD) often experience behavioural and cognitive challenges, with evidence showing that those with ADHD may even experience greater cognitive benefits from a dose of exercise than those without ADHD¹.

Exercise has powerful effects on brain function and structure and can be effective for individuals with ADHD¹. Evidence suggests a positive association between increased physical activity and ADHD symptoms, particularly behavioural and cognitive improvements.

Currently, medication and behaviour modification techniques are commonly used to manage the symptoms of ADHD. Physical activity and exercise can help to support these treatments and can have multiple physical and mental health and well-being benefits for children with ADHD.

WHY IS EXERCISE IMPORTANT?

The mechanism behind the role of exercise for young people with ADHD can be due to the changes in brain structure, enhanced neurotransmitters and arousal regulation that exercise promotes².

Exercise may influence ADHD symptoms by increasing the availability of a particular neurotransmitter in the brain (Monoaminergic Catecholamines)³. Research suggests that exercise naturally stimulates the brain in a similar way to the medications commonly used.

Exercise may also be particularly effective for young people struggling with medication and/or behavioural interventions, as exercise also comes without negative side-effects⁴.

Young people who have ADHD can often experience reductions in executive function (working memory), behavioural inhibition, goal-

oriented activity, and emotional regulation. Regular, moderate-to-vigorous physical activity and exercise has been found to be associated with the following cognitive benefits^{1,2,5,6,7}:

- Improved brain processing speed
- Working memory
- Greater planning and problem-solving ability
- Reduced impulsivity
- Reduced anxiety
- Improved attention

Similar to the effects of medication, cognitive processes and behaviours return to pre-exercise levels once the exercise-induced effects on the central nervous system pass. Evidence suggests that both cognitive performance and memory storage and retrieval may be enhanced immediately after exercise.

IMPROVED HEALTH AND WELL BEING BENEFITS

Young people with ADHD are often less likely to participate in organised sport and regular physical activity⁴. This may be due to a number of reasons, ranging from difficulties associated with ADHD symptoms, which may make inclusion and participation challenging. Other barriers may include reduced confidence or interest due to difficulty with movement planning or motor skills, which are also common amongst individuals with ADHD. Whichever the reason, they are at the same risk as their age-matched peers for a multitude of negative health implications associated with inactivity.

From evidence, we know young people with ADHD will see the same gains in muscular capacity, strength, aerobic fitness, motor planning, motor skill development, etc. as their age-matched peers, which contributes to increased self-esteem and confidence^{3,8}. Therefore, participation in regular exercise can have a holistic effect on not only behaviour and cognition but we can see improvements in other skill deficits, as well as improved physical well-being.

There is now also increased evidence for exercise forms such as yoga for individuals with ADHD.

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TYPES OF EXERCISE RECOMMENDED:

- Regular varied exercise that the young person enjoys should be a regular part of daily life.
- Young people with ADHD should participate in the at least 60 minutes or more of exercise per day, and reduce their daily screen time in line with Australian Physical Activity guidelines for children and adolescents.
- Participation in sport and structured exercise can focus energies and reduce negative behaviours.
- Yoga 1-2 times per week can help regulate behaviours. Poses, breath control, mental concentration, and deep relaxation will positively affect mental states by promoting self-control, attention and concentration, self-efficacy, body awareness, and stress reduction⁹. The practice of yoga exercise elicits reduced activation of the sympathetic nervous system (active state) and increased activation of the parasympathetic nervous system (relaxation state) resulting in increased emotional self-regulation³.

RIGHT PROFESSIONAL

An Accredited Exercise Physiologist will be able to tailor an exercise plan that is safe and based on your individual needs.

**The role of exercise is not necessarily to replace medication and behaviour modification strategies, but to work as a complementing therapy. However, it has been noted in at least one study that children with ADHD who performed high intensity exercise most days of the week were able to reduce their medication intake³. It should also be noted that each individual will respond differently to exercise, thus benefits may vary.*

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