

# ADHD PLUS-MINUS TREATMENT PLAN

## + FOCUSED LIFESTYLE TREATMENTS

Dr. James Greenblatt, MD

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The plan below is part of a guide for practitioners to add elements (+) or remove them (-) from the patient's environment or lifestyle as treatment for ADHD symptoms. Biochemical individuality will determine the most important elements for each patient.

According to the 2012 and 2017 National Health Interview Survey, lifestyle treatments are becoming much more common in the treatment of ADHD, especially in individuals with comorbidities (Wang et al., 2020). Below is a summary of recent research for sleep support, exercise, and mindfulness treatments.

### SLEEP SUPPORT

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Studies show a high prevalence of sleep disruption and sleep disorders in individuals with ADHD across all age groups (Lunsford-Avery et al., 2016). Some researchers propose sleep issues as early predictors of ADHD (Um et al., 2017).

Common to children with ADHD are sleep latency issues, nightmares, restless leg syndrome, and sleep fragmentation, as well as sleep-disordered breathing issues, including snoring, apnea, and chronic mouth breathing (Hvolby, 2015; Wajszilber et al., 2018). Stimulant medication use can also be a cause of sleep issues, prolonging latency (Chen et al., 2019).

An intervention study of sleep hygiene and behavioural sleep counselling for children with ADHD showed significantly decreased overall ADHD symptoms severity and teacher-rated behaviour scores (Hiscock et al., 2015). Another sleep training study showed improved quality and quantity of sleep in children with ADHD (Keshavarzi et al., 2014).

Supplements including tryptophan and L-theanine have also been shown to improve sleep issues in children with ADHD (Galán et al., 2017; Lyon et al., 2011; Weiss et al., 2006). In children taking stimulant medications, melatonin improves sleep latency and sleep disruption (Bloch et al., 2014; Masi et al., 2019). Glycine improves sleep in adults with general sleep issues and may be helpful in an ADHD population as well (Inagawa et al., 2006).

### EXERCISE

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The connection between exercise and ADHD has been studied in both large population studies and in controlled interventions, showing improvements in attention, inhibitory control, hyperactivity, executive function, and performance in cognitive tests (Den Heijer et al., 2017; Hillman et al., 2014; Villa-Gonzalez et al., 2020). In one study, exercise also increased the response to methylphenidate (Choi et al., 2015).

Multiple studies suggest that moderate-to-intense aerobic activity is best, but others also show benefits to ADHD from mild and non-aerobic activity, including table tennis and yoga (Pan et al., 2019; Vysniauske et al., 2020).

Exercise works by triggering release of serotonin, dopamine and other catecholamines, and brain-derived neurotrophic factor (BDNF), a neuronal growth factor important for learning and brain plasticity (Mehren et al., 2020).

### MINDFULNESS

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Mindfulness-based interventions (MBIs) help develop the skills of non-judgmental awareness, attentiveness, and self-regulation. MBIs in the research typically consist of 8-12 weekly sessions with an instructor, with homework.

Several MBIs have been shown to improve ADHD symptoms including attention, hyperactivity, mood, quality of life, and reactivity in both children and adults (Cairncross & Miller, 2020; Mitchell et al., 2015; Poissant et al., 2019).

Interventions for parents of children with ADHD show decreases in "harsh" discipline practices and parental stress, as well as increases in parental self-regulation. These changes may be beneficial in decreasing dysfunctional parent-child relations and the development of externalizing behavior problems in children (Mah et al., 2020; Anderson & Guthery, 2015).

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## ASSESSMENT

### Sleep

- Initial sleep assessment should include sleep-focused interview with the patient and parents
- Assess for medical reasons for sleep disorders, consider a sleep study if more information is needed.

### Exercise

- Assess level of activity with the Activity Scale for Kids (ASK, age 5-15), the Commitment to Physical Activity Scale for Adolescents (CPASA, age 11-18), or other physical activity scales.

## TREAT

### Sleep

Begin with sleep hygiene principles (widely available)

Add sleep aids (adjust dose for age):

- Mg citrate powder, eg. Natural Calm (200mg bid, with breakfast, 30 min. before bed). Increase pm dose to 400mg if sleep not improved in 1 month
- Melatonin 1-3mg 30 min. before bed, with Mg
- Tryptophan 500mg 30 min. before bed
- L-theanine 100-200mg 30 min. before bed
- Glycine 1-3g 30min before bed

If no improvement in sleep, consider sleep medication.

Consider adding melatonin or using a non-stimulant ADHD drug if sleep issues coincide with starting a stimulant medication.

### Exercise

- Assist in creating activity plan that aims for 30-45 minutes, 4-7 days/week of moderate-intense activity.
- Aerobic or non-aerobic; consider sports, yoga, martial arts, biking, swimming, skipping rope, dancing, and tag. Emphasize activity that the child enjoys.

### Mindfulness

Structured mindfulness programs exist for children to adults, and some are being taught in schools. Find listings online for programs local to your patients (see [mindfulschools.org](http://mindfulschools.org)).

At-home practices are also beneficial. Simple exercises include the body scan, mindful breathing, walking or seated meditation, loving-kindness meditation, and others. Many apps and online games also teach the skills of mindfulness:

- Headspace has platforms for kids and for adults
- MindShift, Breathr, and Stop, Breathe, and Think, for teens (visit [mindfulnessforteens.com](http://mindfulnessforteens.com) for more resources for teens)

Encourage parents to be a participant in their child's/teen's mindfulness and to practice for their own emotional regulation. Parent and child may practice together, and talk about their experience.

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