

CAN WE TREAT ADHD NATURALLY?

Beyond Genes: Leveraging Sleep, Exercise, and Nutrition to Improve ADHD

ADHD is genetic, but it is also environmental — to a degree. You can't change your DNA. But you CAN change your eating, fitness, and sleep habits — all of which may have real, positive effects on ADHD symptoms. Here's how.



| By [Joel Nigg, Ph.D.](#) | ✓ [Verified](#) | Updated on April 8, 2024

[Click to Read 3 Comments](#) 



Dubbed “hyperkinetic disorder” 50 years ago, ADHD was first associated with hyperactivity and weak impulse control alone. Since then — and particularly over the last decade — our understanding of the condition has blossomed; we now know that its symptoms range from inattention to self-regulation to emotional sensitivity and beyond.

Growing in lockstep with our [scientific](#) understanding of [ADHD](#) is our knowledge about epigenetics — the study of how [lifestyle](#) factors like nutrition, exercise, and sleep exert real, physical changes on a person's DNA. ADHD is a genetic disorder, yes. But epigenetic changes to DNA do influence how strongly or weakly those ADHD genes get expressed in day-to-day life. (*For more on epigenetics, read Part I of this series [HERE](#).*)

In other words, genes aren't destiny. Though genes do significantly influence ADHD, environment also plays a major role as both a cause and a cure. In other words, families can positively impact ADHD symptoms by modifying their environments in three simple ways: through sleep, exercise, and food changes. Here's how to get started.

The Power of Sleep

Adequate sleep is a huge benefit to your brain and body. The positive sleep-health connection is well documented, yet sleep is too often neglected by children and adults alike — particularly by those with ADHD, who tend to view it as a “waste of time” or have trouble quieting their minds at night.

Restful, restorative sleep is a powerful tool for regulating mood and maintaining attention throughout the day. Adequate sleep also powers learning: brain-imaging studies¹ have repeatedly shown that the brain is highly active during sleep, consolidating and replaying the information it absorbed throughout the day.

[Free Download: [Sound Sleep Solutions for Kids with ADHD](#)]

Once established, bad sleep habits are difficult to correct. Children may exhibit behavioral issues surrounding sleep — becoming defiant at bedtime, for instance, or dealing with anxiety at night — that may frustrate exhausted parents as they work to enforce a proper sleep schedule. Older teens and adults may have a warped

circadian rhythm that makes going to sleep at night — and waking up early in the morning — exceedingly difficult. And people of all ages may sabotage their sleep by our ever-present screens, which disrupt the brain's natural light receptors that regulate hormone production.

Action Steps for Sleep

To get sleep habits back on track, follow these steps:

1. **No screens** — including those of your TV, computer, phone, and video game devices — in the hour before bed. In a pinch, you can download apps or purchase screen covers that replace your device's light with orange light, which is less likely than blue light to disrupt sleep. It is best, however, to fully avoid screens before bed.
2. Set up a **sleep routine**, lasting between 30 and 60 minutes, that occurs every night at the same time. It should be unpressured and unhurried, and end on a positive note that allows you or your child to drift off peacefully. For children, the routine can include a bedtime story or a special song with a parent. For adults, it can include taking a warm bath or shower, or drinking a cup of herbal tea while reading. The power lies in the repetition — if you do the same things every night before lying down in bed, your body will associate those activities with calm, restful sleep.
3. **Melatonin supplements** can benefit older teens and adults, in particular, who need to reset their circadian rhythm. Keep in mind that melatonin can interfere with the natural development of a young child's sleep cycle. (In fact, due to potential side effects, check with your doctor before starting a melatonin regimen.) Take melatonin a few hours before sleep to stimulate hormone levels to slowly rise before bed. Most people make the mistake of taking melatonin right before they lay down, which can lead to delayed sleep and difficulties waking up in the morning.

[4 Get-to-Sleep Products for Restless Kids]

4. Children with significant sleep problems may benefit from brief **behavior therapy programs** specifically designed to improve sleep habits. These programs are typically less expensive and time-consuming than traditional behavior therapy; in some cases, parents see improvement after just one session.

Bonus Tip: Students, review your notes two to three hours before bedtime to further stimulate learning. Some research² has also supported the idea of dispersing a unique, pleasant smell — like peppermint or lavender — while both studying and sleeping, since the resulting association may promote greater retention.

Exercise for Body and Mind

Studies³ suggest that sustained exercise may significantly decrease or even fully reverse the negative epigenetic effects of stress or trauma. Physical activity also promotes brain growth, improves brain efficiency, and strengthens learning abilities. Brain changes associated with exercise are most dramatic in the areas related to ADHD: executive functioning, attention, and working memory.

Studies suggest that exercise has a greater impact on ADHD symptoms than does food — a more commonly promoted treatment strategy. Three meta-analytic reviews^{4 5 6} in the last year have concluded that, while the body of research on exercise is still small compared to that on medication or therapy, the effect on some people with ADHD can be extraordinary.

Still, families struggle to maintain exercise habits when they feel strapped for time or motivation. Children with

ADHD may shy away from team sports — or prefer video games to playing outside — which can make it significantly more difficult for them to get an adequate amount of exercise.

Exercise Action Plan

Follow these tips to build an exercise routine to improve ADHD symptoms:

1. Aim for at least **one hour of exercise per day**, but remember: it doesn't have to be all at once. Research⁷ suggests that four 15-minute bursts are just as effective as an uninterrupted hour, and may be easier to work into a busy schedule.
2. Exercise should be **moderate to vigorous** — that means you or your child should be breathing hard, but not exhausted.
3. Aim for **varied activities** that involve muscle learning and coordination, not just aerobic energy. Studies⁸ show that martial arts, basketball, and dance have a positive impact on ADHD brains.
4. **Buddy up.** Working out as a family, or with a friend, increases the likelihood of sticking with a routine.
5. If you or your child can't stick with one activity, try another. Don't be afraid to **experiment** to find an exercise option that works for your family.
6. Encourage younger children to engage in **outdoor and imaginative play**. There's nothing wrong with indoor exercise, particularly for those who live in urban areas, but children are much more likely to be active independently when they're playing outdoors.
7. **Even a little is better than nothing.** Accept imperfection; if you're having difficulty sticking to a rigid routine, aim instead for small amounts of exercise every day.

[Free Guide: Health & Fitness Lifestyle Changes for Adults with ADHD]

Nutrition Changes for ADHD

Evidence shows that food has major epigenetic effects on the brain. A few key findings include:

- The brain is mostly fat, and the fatty cells around neurons are heavily involved in brain signaling. Decades of evidence have pointed to **omega-3 fatty acids** — found in fish, nuts, and other high-fat foods — as a beneficial nutrient for improving signal strength.
- Brain signaling also relies on **micronutrients like zinc, iron, and Vitamin D**. If levels of these nutrients are deficient — as they often are in children and adults with ADHD — focus, attention, and impulse control will suffer.

It's challenging, however, to establish food's exact effect on ADHD symptoms because the overall effect sizes for this treatment are very small. We do know that some individuals don't respond at all to nutrition changes, while others show vast improvements. There's no way to know whether changes in what you eat will affect you or your child without trying them.

Nutrition Action Steps

Most families begin with the low-effort strategies detailed below, then move on to the high-effort ones if motivation, resources, and results allow.

Low Effort

1. **Shop on the outer edges of the grocery store.** This is where you'll find fresh, non-processed foods to help your family reduce its intake of sugar, artificial additives, and simple carbohydrates.
2. **Eliminate or decrease caffeine**, especially for children. Adults may find that caffeine helps control ADHD symptoms, and there is some evidence to support this hypothesis. For children, however, the risks associated with excess caffeine consumption are just too great — particularly when combined with the high sugar levels often found in energy and soft drinks.
3. **Add cold-water fish or fish oil supplements** to your daily routine. It's recommended that children and adults consume at least 1,000 mg of omega-3 fatty acids per day. If you or your child eat fish or other [omega 3 foods](#) regularly, this amount is easily attainable. If not, try taking a daily fish oil supplement.

High Effort

4. **Check blood levels for common micronutrients.** Ask your doctor to test for mineral deficiencies with a simple blood test. If levels are low, talk with him or her about supplementation. Do not start supplements — particularly iron supplements — without first testing your levels, as excess amounts of these minerals can be dangerous when taken in supplement form.
5. **Eliminate trigger foods** including sugar, gluten, dairy, and food additives. Elimination food plans are tough to maintain — particularly for picky eaters and independent teens — and may result in a nutrient deficiency if not properly monitored. For best results, eliminate one food at a time (gluten, for instance) or work with a professional to ensure a balanced meal plan.

Creating Synergy

Sleep, nutrition, and exercise overlap and interact with each other throughout the day. Nutritious food creates energy for more intense exercise, for instance, while intense exercise better prepares the body for restful sleep. For best results, aim for *positive synergy* among the methods you find most effective and easiest to maintain.

This combination looks different for everyone. Applying all of these strategies simultaneously is too ambitious for most people. Instead, focus on the options that make the most sense for your symptoms and [lifestyle](#) — and remember that something is better than nothing.

In most cases, sleep, food, and exercise will not replace medication or therapy in a treatment plan, nor should they — they're most effective as complementary treatments. When used properly, however, they may result in a reduced need for medication, or less intensive counseling. No matter which path you pursue, it's best to balance professional care with deliberate healthy lifestyle choices in an integrated approach to treatment.

[Free Handout: Flavorful Fish Oil]

How to Treat ADHD in Children: Next Questions

1. What ADHD medications are used to treat children?
2. Is ADHD medication right for my child?
3. What are common side effects associated with ADHD medication?
4. What natural treatments help kids with ADHD?
 - What are the most effective natural ADHD treatments for kids?
 - What foods can help control ADHD symptoms?
 - What vitamins and supplements should my child take?
 - Does brain training help with ADHD?
 - How much and what type of exercise helps kids with ADHD?
 - What types of therapy help patients with ADHD?
5. What if the medication stops working?
6. How can I find an ADHD specialist near me?

¹ Duyn, Jeff H. "EEG-FMRI Methods for the Study of Brain Networks During Sleep." *Frontiers in Neurology*, vol. 3, 2012, doi:10.3389/fneur.2012.00100.

² Rasch, B., et al. "Odor Cues During Slow-Wave Sleep Prompt Declarative Memory Consolidation."  *Science*, vol. 315, no. 5817, Sept. 2007, pp. 1426–1429., doi:10.1126/science.1138581.

³ Kashimoto, R.K., et al. "Physical Exercise Affects the Epigenetic Programming of Rat Brain and Modulates the Adaptive Response Evoked by Repeated Restraint Stress." *Behavioural Brain Research*, vol. 296, 2016, pp. 286–289., doi:10.1016/j.bbr.2015.08.038.

⁴ Tan, Beron W. Z., et al. "A Meta-Analytic Review of the Efficacy of Physical Exercise Interventions on Cognition in Individuals with Autism Spectrum Disorder and ADHD." *Journal of Autism and Developmental Disorders*, vol. 46, no. 9, 2016, pp. 3126–3143., doi:10.1007/s10803-016-2854-x.

⁵ Cornelius, Colleen, et al. "The Effect of Physical Activity on Children With ADHD: A Quantitative Review of the Literature." *Journal of Applied School Psychology*, vol. 33, no. 2, 2017, pp. 136–170., doi:10.1080/15377903.2016.1265622.

⁶ Cerrillo-Urbina, A. J., et al. "The Effects of Physical Exercise in Children with Attention Deficit Hyperactivity Disorder: A Systematic Review and Meta-Analysis of Randomized Control Trials." *Child: Care, Health and Development*, vol. 41, no. 6, 2015, pp. 779–788., doi:10.1111/cch.12255.

⁷ Gibala, Martin J., et al. "Physiological Adaptations to Low-Volume, High-Intensity Interval Training in Health and Disease." *The Journal of Physiology*, vol. 590, no. 5, Jan. 2012, pp. 1077–1084., doi:10.1113/jphysiol.2011.224725.

⁸ Matthey K. Morand. "The Effects of Mixed Martial Arts on Behavior of Male Children with Attention Deficit Hyperactivity Disorder." *Hofstra University*, 2004.



The ADDITUDE Commitment

ADDitude collaborates closely with leading medical experts to publish accurate, clear, and authoritative content that millions of readers trust and share.

[REVIEW OUR EDITORIAL PROCESS](#)

[MEET OUR MEDICAL ADVISORY PANEL](#)



ADDitude verifies the factual accuracy of all new content.



Sources are cited for all scientific research and findings.



Content is periodically reviewed and updated to reflect new health insights.



We strive to feature diverse voices and experiences.

Your Privacy Choices

AdChoices

Copyright © 1998 - 2024 WebMD LLC. All rights reserved. Your use of this site is governed by our [Terms of Use](#) and [Privacy Policy](#). ADDitude does not provide medical advice, diagnosis, or treatment. The material on this web site is provided for educational purposes only.