

Options for Medication Management: Rx and OTC/Natural Treatments

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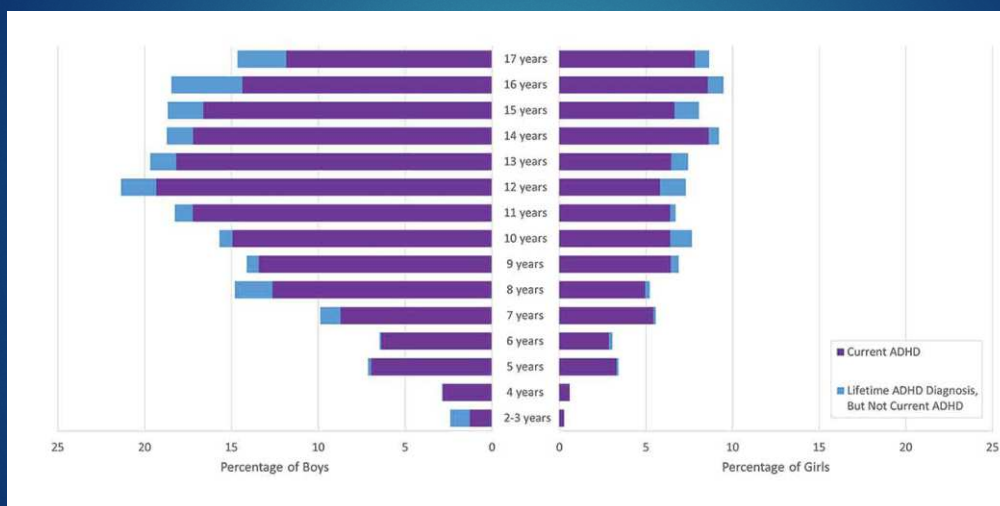
Disclosures

- ▶ I have no conflicts of interest to disclose

Objectives

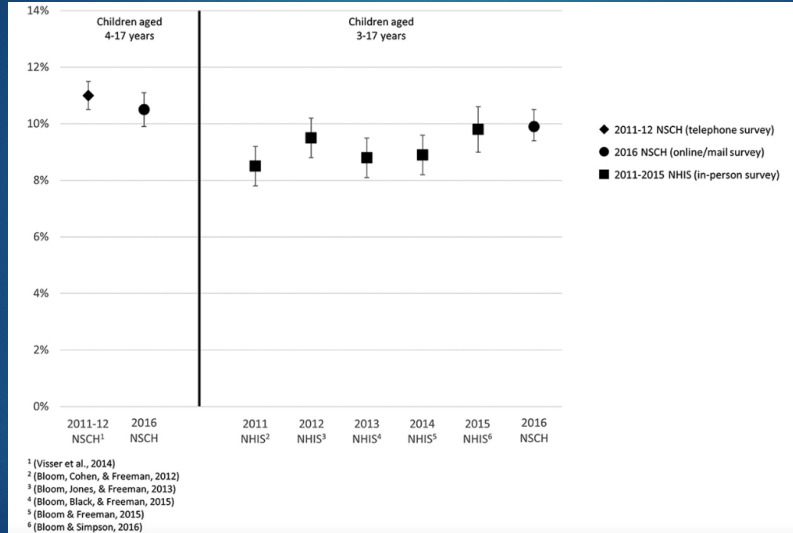
- ▶ Describe the prevalence of ADHD
- ▶ Understand different levels of evidence for therapies
- ▶ List options for prescription medication
- ▶ Describe alternative and complementary medicine
- ▶ List the various alternative and complementary therapies used to treat ADHD

How Common is ADHD?



Danielson et al. 2016 Journal of Child and Adolescent Psychology 47:2.

How Common is ADHD?



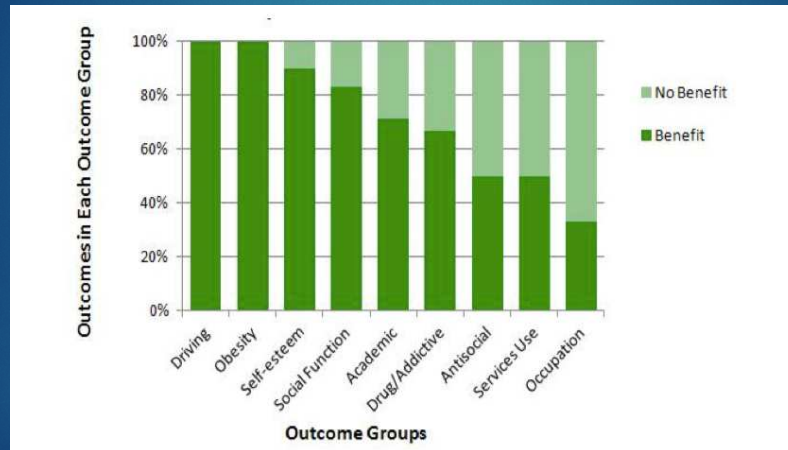
Danielson et al. 2016 Journal of Child and Adolescent Psychology 47:2

How Common are ADHD Treatments?



Danielson et al. 2016 Journal of Child and Adolescent Psychology 47:2.

Why to Consider Treatment for ADHD



Shaw et al BMC Medicine 2012

How to Determine What is Good Information

- ▶ Levels of evidence for scientific studies
 - ▶ Level 1 - Randomized controlled trial
 - ▶ Considered most reliable evidence
 - ▶ Level 2- Non-randomized study with control group
 - ▶ Level 3- Observational study with controls
 - ▶ May be retrospective
 - ▶ Level 4- Observational studies without controls
 - ▶ Case series
 - ▶ Level 5- expert opinion

Stimulants: Clinical Use



- ▶ The primary medications used for ADHD
- ▶ Two classes exist:
 - ▶ Methylphenidate
 - ▶ Ritalin, Metadate, Concerta, Focalin, Daytrana patch
 - ▶ Amphetamines
 - ▶ Adderall, Dexedrine, Vyvanse, Dynavel
- ▶ How Can It Help?
 - ▶ Increase concentrations of dopamine and norepinephrine in the frontal lobe of the brain

Stimulants: Clinical Use



- ▶ Preparations:
 - ▶ Pills
 - ▶ Capsules
 - ▶ Liquid
 - ▶ Patch
- ▶ Varied durations of action
 - ▶ Short acting (3-6 hours)
 - ▶ Long acting (6-12 hours)

Stimulants: Side Effects

- ▶ Headaches
- ▶ Stomachaches
- ▶ Decreased appetite
- ▶ Poor weight gain
- ▶ Sleep problems
- ▶ Cardiac effects

Stimulants: Evidence of Effect

MTA Study

- ▶ 14-month multicenter randomized controlled trial
- ▶ 579 children enrolled, age 7 to 9 years
- ▶ Four treatment options:
 - ▶ Medication management only
 - ▶ Methylphenidate with dose adjustments; basic information for parents/teachers
 - ▶ Intensive behavioral treatment only
 - ▶ parent training; structured teacher consultation; summer treatment program classroom behavioral specialist; case management by therapist/consultant
 - ▶ Medication management + intensive behavioral treatment
 - ▶ Community-based care

Stimulants: Evidence of Effect

MTA STUDY RESULTS

- ▶ Medication Management and Medication Management and Behavior Therapy superior to Behavior Therapy and Community Care

Other Medications used for ADHD

- ▶ Alpha-2 adrenergic agonists (clonidine, guanfacine)
 - ▶ Brand names: Intuniv, Kapvay
 - ▶ Available formulations: short acting tablets; long acting tablets
 - ▶ What does it do?
 - ▶ Targeted for hyperactivity/impulsivity
 - ▶ What are Potential Side Effects?
 - ▶ Sedation, dry mouth, decreased BP, dizziness, constipation, irritability

Other Medications Used for ADHD

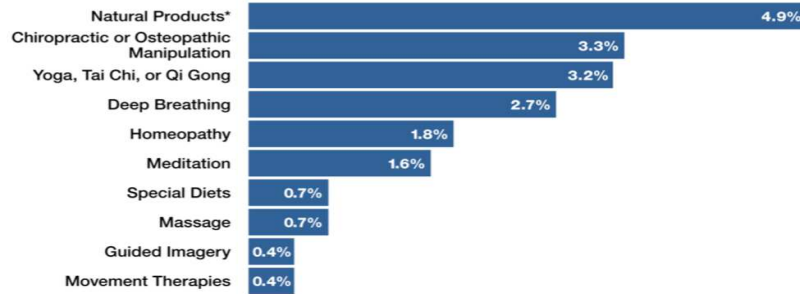
- ▶ Strattera (atomoxetine)
- ▶ What does it do?
 - ▶ Increases levels of norepinephrine in the brain
- ▶ What are potential side effects?
 - ▶ Nausea,
 - ▶ black box warning for suicidal ideation

What Is Complementary Medicine?

- ▶ A Healthcare approach outside of “conventional” or Western medical practices
 - ▶ Alternative: Used **instead of** conventional interventions
 - ▶ Complementary: Used **along with** conventional interventions
 - ▶ Integrative: Using conventional and complementary medicine in a **coordinated** way
 - ▶ Example: Use of massage therapy to decrease pain while patients with advanced cancer are hospitalized

Use of Complementary Medicine in the United States

10 most common complementary health approaches among children—2012



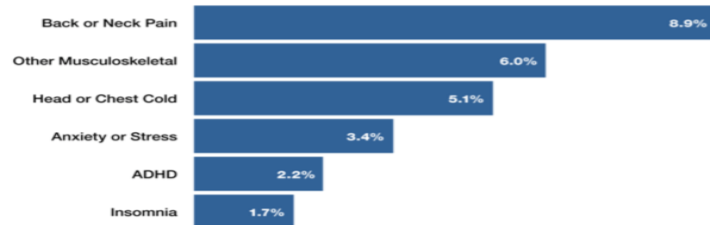
*Dietary supplements other than vitamins and minerals.

Citation: Black LI, Clarke TC, Barnes PM, Stussman BJ, Nahin RL. Use of complementary health approaches among children aged 4-17 years in the United States: National Health Interview Survey, 2007-2012. National health statistics reports; no 78. Hyattsville, MD: National Center for Health Statistics, 2015.

Use of Complementary Medicine in the United States

<https://nccih.nih.gov/file/2979> Complementary Health Approaches in the U.S.
National Health Interview Survey (NHIS)

Diseases/conditions for which complementary health approaches are most frequently used among children—2012



*Dietary supplements other than vitamins and minerals.

Citation: Black LI, Clarke TC, Barnes PM, Stussman BJ, Nahin RL. Use of complementary health approaches among children aged 4-17 years in the United States: National Health Interview Survey, 2007-2012. National health statistics reports; no 78. Hyattsville, MD: National Center for Health Statistics, 2015.

Common Complementary Interventions for ADHD

1. Coaching
2. Cognitive Behavioral Therapy
3. Neurofeedback
4. Sensory Processing Therapy
5. Fish Oil Supplements
6. Vitamin and Mineral Supplements
7. Herbal Supplements
8. Dietary Changes

Questions to Ask About Alternative Treatments

- ▶ Are there clinical trials (scientific studies) to prove this treatment works?
- ▶ Is the information from a trusted source?
- ▶ Is there a national organization for people using this therapy?
- ▶ Does providing the treatment need a license?
- ▶ Will my health insurance cover this treatment?
- ▶ What are potential side effects of this treatment?

▶ www.chadd.org understanding ADHD

When Should I Be Suspicious?

- ▶ When there is a claim that it “works for everyone” with ADHD
- ▶ When the claims are individual reports rather than a scientific study
- ▶ When the intervention is described as “astonishing”, “miraculous”, etc.
- ▶ When you are told that your medical provider will not tell the public about the treatment
- ▶ When you do not receive information about side effects
- ▶ When you are not told the term “natural” is not the same as “safe”

▶ www.chadd.org/Understanding-ADHD

How to Determine What is Good Information

- ▶ Where did the information come from?
- ▶ Trust sources including the following:
 - ▶ Scientific journals
 - ▶ Government websites (CDC, NCCIH)
 - ▶ Medical Associations (AAP, AAN guidelines)
 - ▶ Trusted national organizations (CHADD)
- ▶ Talk with your child’s provider – some dietary supplements can interact with prescription medications

Coaching



- ▶ Predominately for adolescents and adults
- ▶ Addresses academic, vocational, or interpersonal difficulties that are a result of ADHD symptoms
- ▶ Coaching may help to:
 - ▶ Maintain focus to achieve goals
 - ▶ Define concrete actions to meet those goals
 - ▶ Build motivation to reach goals

Coaching



- ▶ How Can Coaching Help?
 - ▶ Increase executive function skills
 - ▶ Managing stress effectively
 - ▶ Improved study skills and strategies
 - ▶ Improved time management skills

Coaching

- ▶ Who provides coaching?
 - ▶ Licensed mental health professional (counselor, social worker, psychologist)
 - ▶ Non licensed professional who works only as a coach
- ▶ Potential side effects?
 - ▶ Cost (not covered by insurance)
- ▶ How to find an ADHD coach?
 - ▶ CHADD Directory
 - ▶ ADHD Coaches Organization (www.adhdcoaches.org)

www.CHADD.org

Cognitive Behavioral Therapy

- ▶ A short term, goal oriented therapy that focuses on change in negative thought patterns to improve the way a person feels about themselves and the future
- ▶ How Can It Help?
 - ▶ Help to overcome difficulty with executive functioning in daily life
 - ▶ May help to treat co-morbid anxiety and depression
- ▶ Who Provides It?
 - ▶ Licensed mental health professional (counselor, social worker, psychologist)

Cognitive Behavioral Therapy



- ▶ Potential Side Effects?
 - ▶ Usually covered by insurance
- ▶ Research on CBT?
 - ▶ Mainly in adults
 - ▶ Shows improvement in executive functioning
 - ▶ No direct studies comparing to medications

Neurofeedback



- ▶ Also called EEG biofeedback or neurotherapy
- ▶ Individuals with ADHD show low levels of arousal in frontal brain areas
- ▶ Requires placing electrodes on head to monitor brain wave activity during a task
- ▶ How Can Neurofeedback Help?
 - ▶ By normalizing patterns of brain activation in the frontal areas of the brain

Neurofeedback

- ▶ Who Provides Neurofeedback?
 - ▶ Licensed mental health professional
 - ▶ Other professionals
- ▶ Potential side effects?
 - ▶ Cost can be high- may be a course of 40 sessions
 - ▶ Not usually covered by insurance

Neurofeedback

- ▶ Research on Neurofeedback?
 - ▶ American Academy of Neurology Practice Guidelines
 - ▶ Should not be used to diagnose ADHD as there is an unacceptably high false positive rate (> 5%)
 - ▶ American Academy of Child and Adolescent Psychology
 - ▶ Reviewed 13 studies which reported positive effects
 - ▶ Lack of evidence from well controlled trials with blinded outcomes
 - ▶ American Psychological Association
 - ▶ Some efficacy of treatment for ADHD

Sensory Processing Therapy

- ▶ What is Sensory Processing Therapy?
 - ▶ Sensory integration involves perceiving, modulating, and interpreting sensory inputs in the environment
 - ▶ How Can It Help?
 - ▶ Improve general function abilities
 - ▶ Improve work and school performance
 - ▶ Becoming more independent with self care
- ▶ www.aota.org fact sheet Addressing sensory integration and sensory processing disorders across the lifespan: the role of occupational therapy

Sensory Processing Therapy

- ▶ Who Provides It?
 - ▶ Licensed occupational therapists
- ▶ Potential Side Effects?
 - ▶ May not be covered by insurance
- ▶ Research on Sensory Processing Therapy?
 - ▶ American Academy of Pediatrics position statement
 - ▶ Acceptable as a component of a comprehensive treatment plan
 - ▶ Sensory processing therapy improves daily function in children with autism (www.autismspeaks.org)

Fish Oil Supplements



- ▶ Two types of essential fatty acids
 - ▶ Omega 3
 - ▶ EPA and DHA (fish, seal, whale)
 - ▶ ALA (flaxseed)
 - ▶ Omega 6
 - ▶ GLA
 - ▶ Essential to health, but only small amounts needed
- ▶ How Can It Help?
 - ▶ Thought to help repair the myelin sheath

Fish Oil Supplements



- ▶ Who provides It?
 - ▶ Many manufacturers of over the counter supplements
 - ▶ Vayarin is a supplement that requires a prescription and is obtained by mail order
- ▶ Potential side effects?
 - ▶ Lack of regulation of supplements
 - ▶ Fish oil may be contaminated with mercury
 - ▶ May cause GI upset (diarrhea)
 - ▶ Cost

Fish Oil Supplements

- ▶ Research on Fish Oil Supplements?
 - ▶ Small impact on fine motor functioning for children with ADHD
 - ▶ Less effect than prescription medications
 - ▶ May take months to see improvement

Vitamin and Mineral Supplements

- ▶ Zinc
 - ▶ Found in seafood, red meat, poultry, dairy products, grains, and nuts
- ▶ How Can It Help?
 - ▶ Thought to decrease hyperactivity
- ▶ Potential Side Effects?
 - ▶ Doses over 40 mg may decrease absorption of copper which can cause anemia
 - ▶ High doses have been linked to prostate cancer
- ▶ Research on Zinc supplements?
 - ▶ May be beneficial as an adjunct to prescription medication (Finding Can Zinc Treat ADHD? Medscape March 15, 2011)

Vitamin and Mineral Supplements



- ▶ Vitamin C
 - ▶ Found in oranges, peppers, kale
- ▶ How Can It Help?
 - ▶ Thought to have an effect on neurotransmitters (dopamine and norepinephrine)
- ▶ Potential Side Effects?
 - ▶ Could affect the absorption of ADHD medications
 - ▶ Diarrhea, nausea and vomiting
- ▶ Research on Vitamin C supplements?
 - ▶ No significant scientific studies

Herbal Supplements



- ▶ St John's Wort
- ▶ How Can It Help?
 - ▶ Thought to have an effect on neurotransmitters
 - ▶ Most studies are on use of St John's Wort for depression
- ▶ Potential Side Effects?
 - ▶ Sleep problems, anxiety, nausea, diarrhea
- ▶ Research on St. John's Wort
 - ▶ A study in adolescents with ADHD showed no change in ADHD symptoms when compared to a placebo (Weber et al JAMA 2008)

Herbal Supplements



- ▶ Echinacea
- ▶ How Can It Help?
 - ▶ Thought to decrease inflammation
- ▶ Potential Side Effects?
 - ▶ Rash (allergy); nausea; vomiting
- ▶ Research on Echinacea and ADHD
 - ▶ Insufficient evidence of benefit for ADHD

Herbal Supplements



- ▶ Ginkgo Biloba and Ginseng
- ▶ How Can It Help?
 - ▶ Used to improve memory
- ▶ Potential Side Effects?
 - ▶ Can interact with many medications, including blood thinners
- ▶ Research on Ginkgo biloba and Ginseng
 - ▶ One study suggesting possible improvement in children (J Ginseng Res 2011)
 - ▶ A 2010 randomized trial of 50 children suggested that it was less efficacious than methylphenidate (Prog Neuropsychopharmacol Biol Psychiatry 2010)

Dietary Changes

- ▶ Feingold Diet
 - ▶ Based on the theory that artificial colors, flavors, and preservatives are a major cause of hyperactivity
- ▶ How Can It Help?
 - ▶ Decreasing salicylates in the diet is thought to help with ADHD
- ▶ Potential Side Effects?
 - ▶ Difficult diet to follow
 - ▶ Involves changes in entire family's lifestyle
- ▶ Research on the Feingold Diet?
 - ▶ Some food additives (sodium benzoate) and artificial colors may increase hyperactivity (Lancet, 2007)
 - ▶ Other studies show no effect

Summary

- ▶ Many complementary medicine strategies exist for ADHD
- ▶ Well designed research studies are limited for these non traditional approaches to treatment
- ▶ When considering alternative or complementary medicine, be aware of potential medical side effects as well as cost



Questions?



REFERENCES

- ▶ CHADD
- ▶ WebMD
- ▶ Medscape
- ▶ National Center for Complementary and Integrative Health