

## Non-Medication Treatments for Students with ADHD

### - Increase in Medication in the United States

- 1990-1 million kids
- 1995- 2 million kids
- 2010- approximately 3.5 million kids

\*Over time the usefulness of the medication wears off

\*Ritalin actually increases a protein in the brain linked to drug seeking more than cocaine does

### - ADHD: The Immature Brain

- Some parts of the brain were 2-5 years behind
  - Least developed part- pre frontal lobes (areas that cause us to stop things)
- 1 part was more developed (Motor Areas) \*Does it make sense that they can't sit still?
- Too much theta waves (slow brain waves)-brain is underactive, "sleepy"
  - Younger you are the slower the brain waves
  - Frontal lobes can't do their jobs
  - Symptoms: short attention span, distractibility, lack of perseverance, impulse control problems, hyperactivity, chronic lateness, poor time management, disorganization, procrastination, unavailability of emotions, misperceptions, poor judgment, trouble learning from experience, short-term memory problems, social anxiety
- What can stimulate the brain and "wake it up"?
  - Movement- triggers the balance/coordination in our ears which stimulates the brain waves
    - Can't cut/eliminate PE or recess from school- good for everyone, even better for students with ADHD
    - Horseplay during free play reduces the desire for an ADHD student to become violent during the day
    - **Physical exercise increases dopamine, norepinephrine, serotonin, and endorphins that improve mood and enhance attention, learning, and memory. (ADHD medication contains A LOT of dopamine and norepinephrine)**
    - Playing a musical instrument also stimulates the brain with lots of hand-eye coordination and cognitive functioning
  - Diet- we are made up of 75 trillion cells (we are what we eat!)
    - Students need glucose to be slowly going into the brain all day
    - Vegetables produce a steady stream of energy- not a quick fix like junk food
    - Too much sugar is an attack on the brain which will lower attention and increase mood instability-students want the junk food though because it

will give them the quick boost of glucose to compensate for what their bodies can't do naturally

- Junk food decreases dopamine levels in the brain
- Protein is especially helpful for students with traditional ADHD (non-anxiety)
  - Builds up what they need and helps maintain blood sugar
- Fish oil!
  - Omega-3 fatty acids- found in cold water fatty fish, our bodies do not make these and they are important in brain and nerve cell function
  - These break down more quickly in students with ADHD so they would need more

\*Japan eats a ton of fish-lower ADHD, depression, and anxiety cases...

- 800 mg/day of Omega-3 for 3 months improved reading, spelling, behavior in ADHD kids
- Increase in zinc can lower the amount of medication that needs to be taken
- WATER- the brain needs water! Lack of water is #1 trigger for daytime fatigue and when someone is dehydrated the brain is stressed

\*The brain cannot learn under stress...

Being dehydrated puts stress on the brain.  
Poor nutrition puts stress on the brain.  
Lack of exercise puts stress on the brain.

- Recommended Diet for students with ADHD
  - Increase Protein
  - Eat throughout the day (keep blood sugar steady)
  - Decrease simple sugars (junk food)
  - Drink more water!
  - Take a daily multivitamin/mineral (that has 100% of the RDA-recommended daily allowance-not 500% or 1000%)
  - Omega 3 supplement (fish oil or krill oil with lots of EPA and DHA-important for brain function)
- Frontal Lobe Skill Building- Use it or Lose it!
  - Games for frontal lobe skill building- simon says, freeze games, crossword puzzles, concentration, "Where's Waldo," games with directions, patterns for construction (LEGO's), cooking with recipes
  - Meditation-hold focus on one thing, recognize when the brain wanders off on something different, get it back as soon as possible (practicing this daily shows improvement in 8 weeks)
  - Computerized Games (Lumosity.com or mybrainsolutions.com)-should be done 30 minutes a day-can be done at home-gets harder as you go on

- Neurofeedback-a mechanism that gives you information about how your brain waves are working
  - How does it work?
    - Operant Conditioning
      - reward something, it does more
      - ignore something, it does less
      - Example-The brain will be monitored through a computer. A movie will be shown and when the brain is focusing on the desired results set by the computer the screen will be bright and the sound loud, when the brain wanders or loses focus, the screen will start to dim and the sound will soften. The individual has no control over this; the brain is working by itself and training itself.
  - Does it work?
    - Comparison of Ritalin and Neurofeedback showed similar results of effectiveness, but Neurofeedback effects are more permanent and hold the brain in check longer (usually takes 25 sessions)
    - [www.bcia.org](http://www.bcia.org) ←look here to find a provider
      - Most insurance companies will cover psychophysiological therapy
- Stress & the Brain
  - Stress-blood flow will go to the inner parts of the brain (Fight or Flight Responses)-not a rational part of the brain (reactive)
  - Different things can trigger the irrational mind-school alone may...
    - Natural conclusion of fight or flight is vigorous physical activity
      - Provide an outlet for exercise
        - Don't need 30-40 minutes-just need anything that allows them to work up a sweat
        - 5 minutes will effectively burn off excessive stress hormones
        - Examples-pushups, sit ups, jumping jacks, jump rope, run in place, run up and down stairs, stationary bike...
    - Many behavior problems are the result of unmanaged stress
    - Normal life right now is a chronic stress situation...now think of an underdeveloped brain in that situation!
  - Calming Ourselves in Stressful Moments-the relaxation response counteracts the harmful physical effects of the fight or flight reaction
    - Different Techniques-deep breathing, exercise, brain gym, meditation, prayer, positive self-talk, calming music, muscle relaxation
    - We want to be attentive/alert & relaxed
  - Heart Rate Variability (HRV)
    - Heart rate changes with every heartbeat

- HRV=beat to beat variations
  - Should not be confused with heart rate
  - HRV is associated with autonomic nervous system functioning
    - **Psychological disorders showing low HRV include depression, anxiety, ADHD, PTSD**
  - Breathing-changes hormones, changes brains!
    - [www.doasone.com](http://www.doasone.com) then click on the tab that says “Rooms” then the tab that says CBP (custom breath pacers)
    - 6 breaths per minute is ideal (breathing and heart are perfectly synchronized)
      - Kids-8-9 breaths per minute
  - Sleep Deprivation
    - Lack of sleep increases theta brain waves
      - Can’t keep adding more, hurting the child!
      - 8 hours of sleep are needed!
    - Children averaging less than 8 hours of sleep have higher hyperactivity and impulsivity and other ADHD symptoms
- \*How many kids are sleep-deprived but are diagnosed with ADHD?

- Consequences of Sleep Loss
  - Increased behavior and learning problems, irritability, easily frustrated, depressed, loss of short-term memory
  - Less sleep=higher ratings of parent reported hyperactivity and inattention
- Sleep Suggestions
  - Stick to a regular sleep schedule
  - Avoid exercise, caffeine, and large meals before bed
  - No TV or Video Games 2 hours before bedtime
  - No naps after 3pm
  - Relax before bed-cool the brain!

#### Non-Medication Treatments for Students

- Regular exercise
- Proper diet- including water!
- Get the required sleep
- Reducing stress on the brain
- Proper Breathing
- Neurofeedback is a possibility too

\*By doing these things it can only help our students and children who may be experiencing symptoms of ADHD

*-Mike Allard (notes taken from Jeff Tarrant’s presentation on “Non-Medication Treatments for ADHD and the Immature Brain”)*