

# Q&A Knox County School Nurses

June 2025  
Molly Bullington, MD

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- No Financial Disclosures for this talk
- I attended Blue Grass Elementary, West Valley Middle, and Bearden High School therefore I have some explicit biases

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## Anxiety

"The treatment for anxiety is exposure"



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**What can I do about somatic symptoms (headaches, stomach pains, vomiting) that are causing a student to miss class?**

- Rule out medical causes/check vital signs/observe behaviors
- Coordinate with teachers/parents/student to notice patterns
  - Specific people, classes, testing, presentations, etc.
- Educate student/parents about mind-body connection and the origin of somatic symptoms.
- It's difficult to "push" students if families are not on board
- Teach some relaxation, grounding mantras
- Limit time in nurse's office with a timer?

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**What can I do about somatic symptoms (headaches, stomach pains, vomiting) that are causing a student to miss class?**

- Develop a return-to-class plan
  - Set short-term (specific classes) and long-term goals (whole days/weeks)
  - Have the student participate in making the plan
  - Which class can you stay in for the entire time?
  - Work toward core classes not being missed
  - Don't penalize or shame the student for taking breaks/coming to the nursing office, but limit time (10-15 minutes with a visual timer?)
- Define success and celebrate it, possibly coordinating with family for this.
  - Cheap/free ways of rewarding behaviors at home or school

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**ADHD**

"They are missing a set of brakes in their brain"

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### How is an ADHD diagnosis made? What are the first line treatments?

- ADHD is a **life-long** illness with difficulties in **Inattention** and/or **Hyperactivity** that creates **dysfunction** within a person's life.
- Symptoms have to be present in >1 environment (most commonly school and home)
- Diagnosis is most often assisted by questionnaires (Conners, Vanderbilts) to help providers understand their behaviors in another environment
- First lines treatments are behavioral modification (<6 yo) and stimulant medications – methylphenidate vs amphetamine salts
  - Ritalin, Focalin, Concerta, Daytrana, Aztarys, Quilivant, Qullicheiw, Metadate, Jornay, Contempla, Metadate, Aptensio
  - Adderall, Vyvanse, Adzenys, Mydayis, Dyanavel
- Non stimulants are considered second line
  - clonidine, guanfacine, atomoxetine, viloxazine

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### Should students take their medication everyday or just school days?

- For stimulants --- it depends, providers are split on the answer which is why parents are also split.
  - There are more issues than just concentration at school, therefore more people are moving toward daily dosing BUT there are certainly patients to whom I recommend "drug holidays"
- For non-stimulants – everyday

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### I have a student not eating well on a stimulant, what can I do to help them eat?

- Education/Reminders to eat
- Hide calories in food
  - Butter, processed foods, snacking
- Move around dosing times
  - try and give medicine after breakfast (at school?), make sure that their afternoon dose is being given after lunch or after a snack at home

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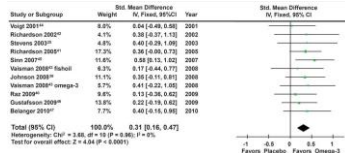
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### Any herbal/natural treatments for ADHD?

- Omega-3 fatty acids
  - Meta Analysis of 10 studies involving a total of 699 children showed small but significant effect in improving ADHD symptoms.



Bloch MH, Qawasmi A. Omega-3 fatty acid supplementation for the treatment of children with attention-deficit/hyperactivity disorder symptomatology: systematic review and meta-analysis. *J Am Acad Child Adolesc Psychiatry*. 2011 Oct;50(10):991-1000. doi: 10.1016/j.jaac.2011.06.008. Epub 2011 Aug 12. PMID: 21961774; PMCID: PMC3625948.

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### Any herbal/natural treatments for ADHD?

- Melatonin
  - 2 trials of 135 total children
  - Benefit for sleep onset and duration, but no data show clear impact on ADHD symptoms
- Iron
  - Improvement if iron stores (serum ferritin) is low
- Zinc
  - Zinc intake is primarily from the diet and its main sources include red meat, poultry, beans, fortified breakfast cereals and dairy products.
  - Studies in several areas of the world (Israel, Turkey and Poland) have demonstrated lower zinc levels in children diagnosed with ADHD compared to healthy controls.
  - This has not been replicated in the US

Bloch MH, Mulqueen J. Nutritional supplements for the treatment of ADHD. *Child Adolesc Psychiatr Clin N Am*. 2014 Oct;23(4):883-97. doi: 10.1016/j.chc.2014.05.002. Epub 2014 Aug 12. PMID: 25220092; PMCID: PMC4170164.

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### Any herbal/natural treatments for ADHD?

- Korean Red Ginseng
  - 2 RCTs looking at supplement vs. placebo in 190 children, shows some improvement in ADHD scores over 8/12 wks.
  - 4 additional observational studies seem to show improvement in symptoms

Kim Y, Cho IH, Cho SH. Effect of ginseng and ginsenosides on attention deficit hyperactivity disorder: A systematic review. *Journal of Ginseng Research*. 2024 Sept. <https://doi.org/10.1016/j.jgr.2024.05.006>

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### Any herbal/natural treatments for ADHD?

- **Ginkgo Biloba**
  - A single, 6-week, randomized, methylphenidate-controlled trial in children with ADHD demonstrated the superiority of methylphenidate to *Ginkgo biloba* in terms of improving ADHD symptoms
  - it remains unanswered whether *Ginkgo biloba* has any benefit compared to placebo
  - Increased bleeding risk with *Ginkgo biloba* treatment makes its current use for ADHD unadvised
- **St. John's Wort**
  - trial of 54 children with ADHD failed to demonstrate a significant benefit or a trend towards benefit in children taking St. John's Wort compared to placebo over 8 weeks of treatment

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### Any research on preservatives, dyes, natural flavors and the effect on ADHD/Anxiety?

- According to one study -- Likely increase in ADHD symptoms when students are being given food dyes and sodium benzoate (preservative) – these were combined in one drink vs. placebo without either
- The British Food Standards Agency has already advised parents to eliminate food colorings from the diet of children who exhibit hyperactive behaviors.

Donna McCann, Angelina Barrett, et al. Food additives and hyperactive behaviour in 3-year-old and 8/9-year-old children in the community: a randomised, double-blinded, placebo-controlled trial. The Lancet. Volume 370, Issue 9598. 2007.

Bukal, Osornio-Vargas A, Clark B. Food additives, essential nutrients and neurodevelopmental behavioural disorders in children: A brief review. Paediatr Child Health. 2011 Aug;16(7):e54-6. doi: 10.1093/pch/16.7.e54. PMID: 22851902; PMCID: PMC3200397.

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### Risk Factors for ADHD

- The genetic nature of this disorder is supported by the identification of various susceptibility gene variants in ADHD
- Environmental risk factors include psychosocial ones (eg, severe marital discord, maternal mental disorder, paternal criminality, foster placement, lower socioeconomic groups and others)
- Physical and chemical environmental factors include exposure to tobacco smoke and/or alcohol in pregnancy, low birthweight, prematurity, fetal and childhood exposures to lead, polychlorinated biphenyls, arsenic and, potentially, other environmental neurotoxins

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# Autism Spectrum Disorder

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## How can we support kids with ASD who are sensitive to triggers?

- Identify triggers
- Help create a predictable environment, when possible
- Teach Interoception to help students understand their emotions and feels that are occurring in their body
- Talk with parents/OT/SLP about how to help this student be successful



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## Latest Research on Genetic Causes of ASD? Any correlations with parental/prenatal factors (age, substance use, infections)?

- Genetic studies have identified numerous genes associated with ASD
  - Fragile X; also variants in the DDX53 gene, located on the X chromosome, which may explain the higher prevalence of ASD in males
  - Other genes, such as PTCHD1-AS and FGF13
- Infections (e.g., rubella, cytomegalovirus, influenza), autoimmune diseases, and pre-eclampsia have been linked to an increased risk of ASD
- Younger parents (21–35 years old) may have a slightly lower risk of having children with autism
- Depression is more dangerous than taking an antidepressant

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### Any research in supplements in ASD?

- Leucovorin (L-methylfolate)
  - People with an *MTHFR* gene variant can process all types of folate, including [folic acid](#).
  - When getting the same amount of folic acid, people with the *MTHFR* 677 TT genotype have an average amount of folate in their blood that is only *slightly* lower ([about 16% lower](#)) than in people with the *MTHFR* CC genotype.
  - There isn't enough evidence to show that the *MTHFR* A1298C variant *alone* significantly affects how the body processes folate.
- OTC supplements – We know that children with ASD are at an increased risk for nutritional deficiency, maybe they should all be on a multivitamin?
  - Specifically, studies have looked at Vitamin D, Omega-3s, B12, Folic Acid, Sulforaphane (from cruciferous vegetables)

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### Other

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### Pseudo seizures/Functional Neurological Disorder (FND)/Conversion Disorder

- Documented by Egyptians or Hippocrates, term hysteria (*hysterika* is Greek for uterus), with a belief that female ailments could be the result of a *wandering uterus* applying pressure internally on organs and nerves leading to symptoms.
- DSM V Criteria
  - One or more symptoms that affect body movement or your senses
  - Symptoms can't be explained by a neurological or other medical condition or another mental health disorder
  - Symptoms cause significant distress or problems in social, work or other areas, or they're significant enough that medical evaluation is recommended
- Treatment is "ignoring the behavior" and working with PT/OT/psychology

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### Vaping

- How can we stop young people from vaping?

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### Bipolar Disorder

- What is the youngest someone can be diagnosed with bipolar disorder?
  - Very debated topic!

My answer:

- Rare in children under the age of 16, but not impossible
- MANY people think their irritable, impulsive or irrational child is "bipolar" and TRUE bipolar illness is EPISODIC and SEVERE.
- According to the literature, looking back over someone's life there were signs of "episodic issues" going back to young childhood at times, but it's hard to tell if this is "retrospectively looking at it" or something else.

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### Thanks!

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