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RUPA HEALTH

Treating ADHD with Nutrients, Herbs and More

Attention Deficit Hyperactivity Disorder (ADHD) affects an estimated 9-13% of kids and 8% of adults in the U.S. each year. There is an incredible amount of research that supports the effectiveness of both dietary and herbal interventions for improving ADHD symptoms like hyperactivity, impulsivity and more. In this talk we will teach you how to take this data and turn it into actionable treatment plans for your clients that get them real results, either alone or alongside medications. Practitioners will leave this webinar feeling empowered to treat ADHD using nutrients, herbs and lifestyle interventions.

Personalized Lifestyle Medicine Institute

Characterizing the metabolomic signature of attention-deficit hyperactivity disorder in twins

Our results highlight sex-specific patterns in the metabolic phenotype of individuals with ADHD. Specifically, the urine profile of males, but not females, with ADHD was characterized by greater excretion of hippurate, a product of microbial-host co-metabolism that can cross the blood-brain-barrier with bioactivity of potential relevance to ADHD. This *trans*-genomic metabolite was also negatively correlated with IQ in males and was significantly correlated with fecal metabolites associated with gut microbial metabolism. The fecal profile of ADHD individuals was characterized by increased excretion of stearoyl-linoleoyl-glycerol, 3,7-dimethylurate, and FAD and lower amounts of glycerol 3-phosphate, thymine, 2(^{1}H)-quinolinone, aspartate, xanthine, hypoxanthine, and orotate. These changes were independent of ADHD medication, age, and BMI. Furthermore, our specific twins' models revealed that many of these gut metabolites had a stronger genetic influence than environmental. These findings suggest that metabolic disturbances in ADHD, involving combined gut microbial and host metabolic processes, may largely derive from gene variants previously linked to behavioral symptoms in this disorder.

Neuropharmacology 234 (2023) 109562

The Most Common Drugs Used to Treat ADHD In Children

Stimulant medications are the most commonly prescribed and effective treatments for ADHD. They work by increasing the levels of certain neurotransmitters, such as dopamine and norepinephrine, in the brain, which can help improve attention, focus, and impulse control.

a. **Methylphenidate-Based Medications:**
- Ritalin (short-acting methylphenidate)
- Concerta (extended-release methylphenidate)
- Metadate (methylphenidate extended-release)
- Quillivant XR (methylphenidate oral suspension)

b. **Amphetamine-Based Medications:**
- Adderall (mixed amphetamine salts)
- Adderall XR (extended-release mixed amphetamine salts)
- Dexedrine (dextroamphetamine)
- Vyvanse (lisdexamfetamine dimesylate)

c. **Dexmethylphenidate:**
- Focalin (dexmethylphenidate)

Frontier Approaches to Assessing and Managing ADHD

ASSESSMENT

- Amino Acid Analysis
- Fatty Acid Analysis
- Organic Acid Analysis
- Microbiome Analysis
- Methylation Epigenome Analysis

MANAGEMENT

- Heavy Metal Detoxification
- Whole Foods Diet
- Essential Vitamin and Mineral Supplementation
- Specific Neuroactive Botanical Supplementation
- Omega 3 Supplementation
- Pre,Pro,Syn, and Postbiotic Therapy
- Graded Exercise/Physical Activity
- Sleep Training

Higher rates of autism and attention deficit/hyperactivity disorder in American children: Are food quality issues impacting epigenetic inheritance?

Table 2 Number of United States students ages 6-21 served under Individuals with Disabilities Education Act by disability category & year

Year	Autism	OHI (including ADHD)	Speech/language	Developmental delay (3-9 yr only)	All disabilities
2006	224594	599494	1160904	89931	6081890
2011	407214	734348	1071555	115642	5789884
2021	768179	1097251	1183310	255787	6712010
% Change (2006-2021)	+242.0%	+83.0%	+1.9%	+184.4%	+10.4%

World J Clin Pediatr 2023 March 9; 12(2): 25-37

Nutrition in the Management of ADHD: A Review of Recent Research

Recent Findings Preliminary evidence suggests that minerals might have beneficial effects on ADHD symptomatology. Probiotics might offer novel strategies to prevent or treat ADHD. Inverse associations between adherence to "healthy" diets and ADHD symptoms have been observed. Children with ADHD responding to the few-foods diet (or oligoantigenic diet) with an elimination of individually identified food items show substantially improved behavior and cognitive functioning.

Summary Evidence from recent research does not allow any recommendations regarding the use of micronutrients or probiotics in the management of ADHD. The few-foods diet may become an additional therapeutic option for children with ADHD.

Current Nutrition Reports (2023) 12:383–394

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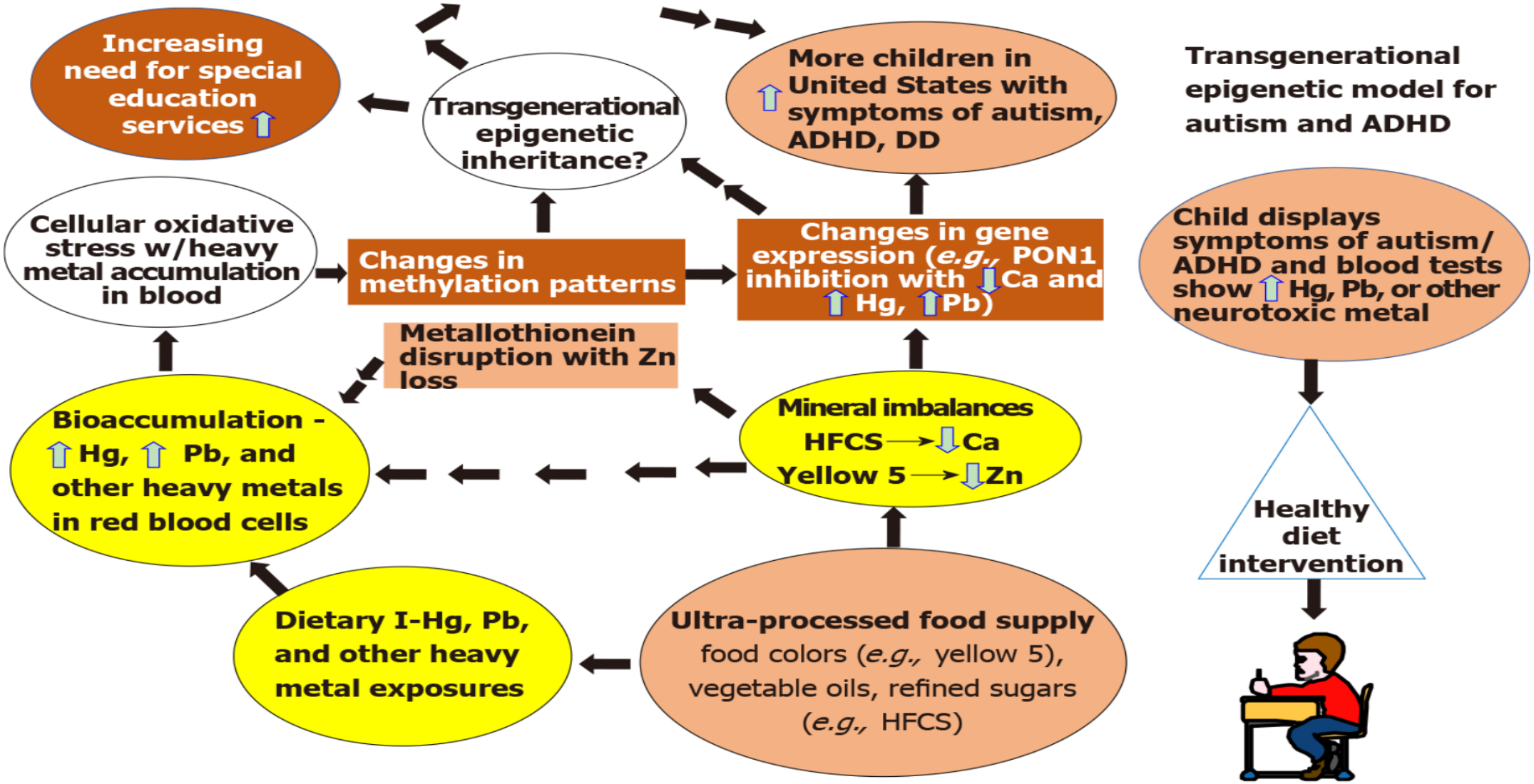
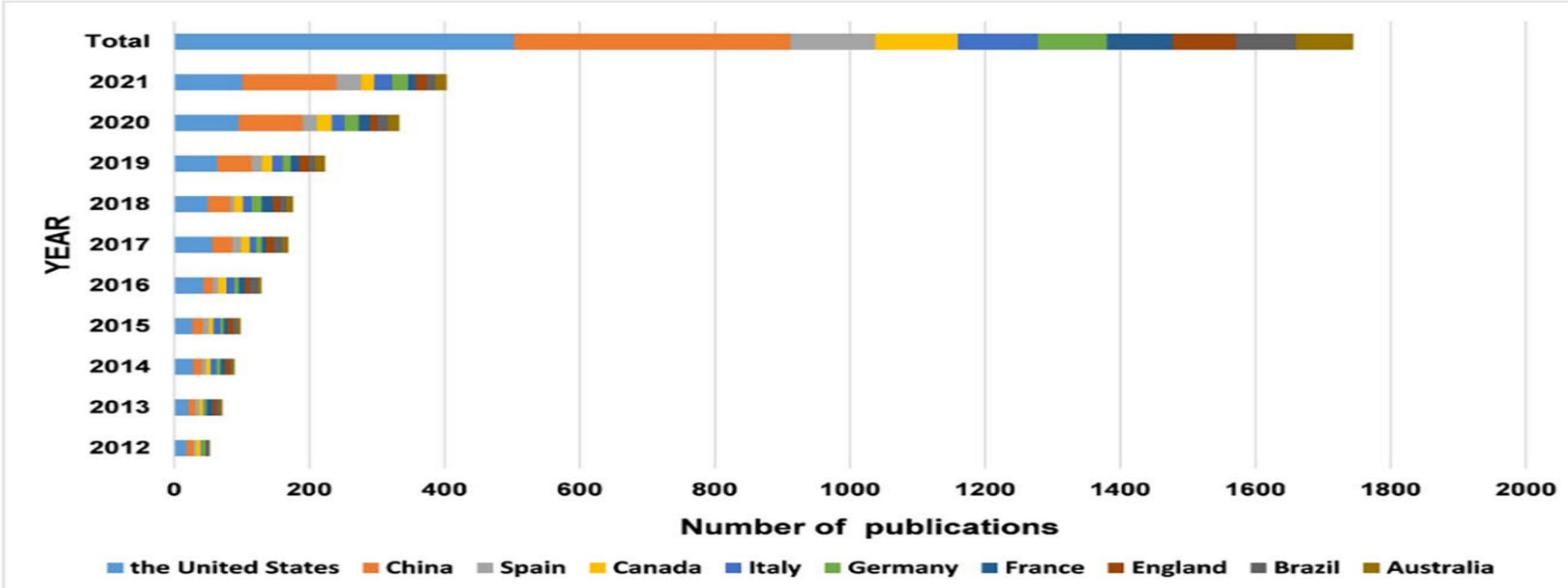

Increasing need for special education services ⇧
Transgenerational epigenetic inheritance?
More children in ⇧ United States with symptoms of autism, ADHD, DD
Cellular oxidative stress w/heavy metal accumulation in blood
Changes in methylation patterns
Changes in gene expression (e.g., PON1 inhibition with ⇩Ca and ⇧Hg, ⇧Pb)
Metallothionein disruption with Zn loss
Bioaccumulation - ⇧Hg, ⇧Pb, and other heavy metals in red blood cells
Mineral imbalances
HFCS → ⇩Ca
Yellow 5 → ⇩Zn
Dietary I-Hg, Pb, and other heavy metal exposures
Ultra-processed food supply
food colors (e.g., yellow 5), vegetable oils, refined sugars (e.g., HFCS)
Transgenerational epigenetic model for autism and ADHD
Child displays symptoms of autism/ ADHD and blood tests show ⇧Hg, Pb, or other neurotoxic metal
Healthy diet intervention

A bibliometric analysis of studies on gut microbiota in attention-deficit and hyperactivity disorder from 2012 to 2021



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Principle Authors in the Microbiome-ADHD Area

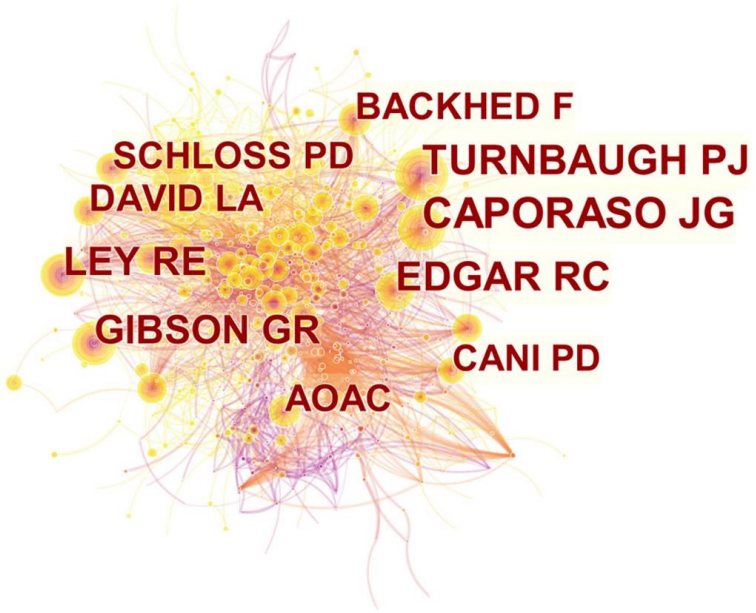

FIGURE 4
CiteSpace network visualization map of co-cited authors of the articles related to gut microbiota in attention-deficit and hyperactivity disorder.

Rank	Author	Count	Rank	Co-cited author	Citation
1	Wang J	15	1	CAPORASO JG	217
2	Dusemund B	13	2	TURNBAUGH PJ	168
3	Gundert-remy U	13	3	EDGAR RC	161
4	Lambre C	13	4	GIBSON GR	147
5	Li Y	13	5	LEY RE	138
6	Mortensen A	13	6	AOAC	99
7	Waalkens-berendsen I	13	7	BACKHED F	96
8	Wang Y	13	8	DAVID LA	96
9	Aguilar F	12	9	SCHLOSS PD	91
10	Crebelli R	12	10	CANI PD	90

Personalized Lifestyle Medicine Intervention for ADHD

The treatment of Attention-Deficit/Hyperactivity Disorder (ADHD) typically involves a combination of strategies, including medication, behavioral therapy, and lifestyle modifications. While there is no one-size-fits-all diet or lifestyle approach for managing ADHD, some general guidelines and strategies may be beneficial:

1. Balanced Diet:

A balanced and nutritious diet can play a role in managing ADHD symptoms. Consider the following dietary recommendations:

- **Reduce Sugar and Processed Foods:** Limiting the consumption of sugary snacks, sodas, and highly processed foods may help stabilize blood sugar levels and reduce hyperactivity and mood swings.
- **Increase Omega-3 Fatty Acids:** Foods rich in omega-3 fatty acids, such as fatty fish (salmon, mackerel, sardines), walnuts, flaxseeds, and chia seeds, may have a positive impact on cognitive function and attention.
- **Protein-Rich Foods:** Including lean protein sources like poultry, beans, and legumes in meals can help stabilize energy levels and improve focus.
- **Complex Carbohydrates:** Choose whole grains like brown rice, whole wheat bread, and oats, which release energy slowly and provide a steady source of glucose to the brain.
- **Fruits and Vegetables:** A diet rich in fruits and vegetables provides essential vitamins, minerals, and antioxidants that support overall health and brain function.

2. Regular Meals and Snacks:

- Maintain a regular eating schedule with balanced meals and snacks to help stabilize blood sugar levels throughout the day. Skipping meals can lead to fluctuations in energy and mood.

3. Hydration:

- Drink plenty of water throughout the day to stay properly hydrated. Dehydration can affect mood and cognitive function.

4. Physical Activity:

- Encourage regular physical activity. Exercise can help improve focus, attention, and mood. Engaging in activities like sports, yoga, or dance can be particularly beneficial.

5. Adequate Sleep:

- Prioritize a consistent sleep schedule and ensure adequate sleep each night. Lack of sleep can worsen ADHD symptoms. Most children and adolescents need 9-11 hours of sleep per night, while adults typically need 7-9 hours.

6. Mindfulness and Stress Reduction:

The Key….

Personalization