Supporting a Child's Brain and Body

A pediatric functional medicine approach to support learning and behavior in ALL children. Focus on children experiencing ADHD, learning differences, behavioral challenges and neurodivergence.

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Introduction

What is Pediatric Functional Medicine?

- I am a pediatric nurse practitioner with national board certification in primary care.
- I am trained in functional medicine with the Institute of Functional Medicine and MAPS (Medical Academy of Pediatrics Special Needs) as well as a certified functional medicine health coach. (FMCA)
- I have 26 years invested in pediatric care, most recently, the last 13 in a primary care setting.
- I love children and have 3 of my own

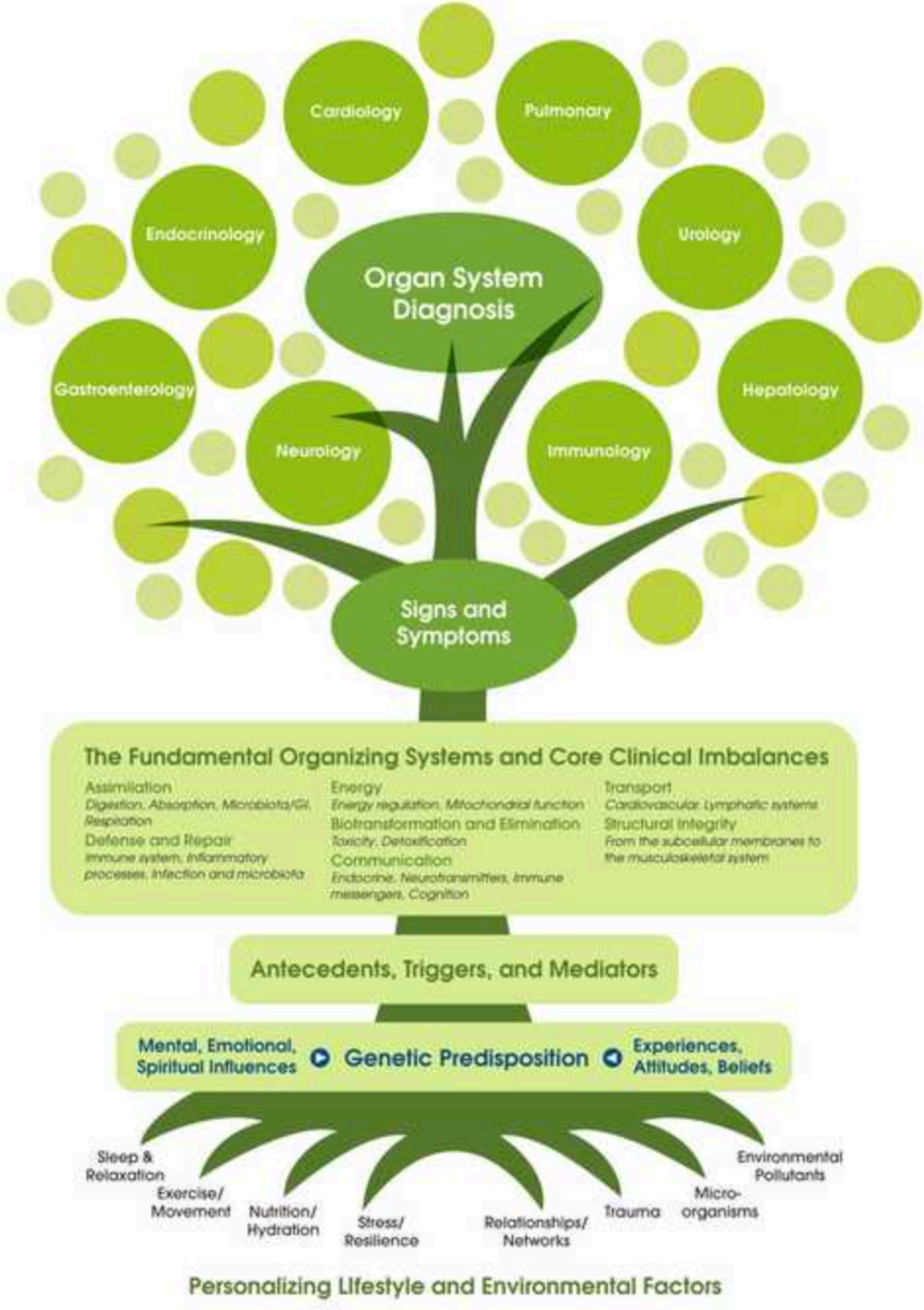


- Functional medicine is root cause medicine. Not just a pill for an ill but WHY is something happening? What more can we understand about what is going on with someone's physiology, their environment, their spirit to help them find healing and balance. It is staying curious. It is thinking outside the box and it is also a commitment to learning the latest and greatest while keeping my allopathic training tools and lens ever in focus to find the ordinary as well.

- How did I get into this?

- My middle child got really sick, lost a lot of weight and someone helped me figure it out and get him well with tools I never considered. I got curious....5 years later, here I am.

- I founded a small pediatric functional medicine practice, Empowered Children's Wellness that kept me very busy but realized we wanted to offer more services to our patients and our community was very interested in functional medicine, so we went on a Journey....to start our new practice, Journey Pediatrics in Mt Pleasant.


Cardiology
Pulmonary
Endocrinology
Urology
Organ System Diagnosis
Gastroenterology
Hepatology
Neurology
Immunology
Signs and Symptoms
The Fundamental Organizing Systems and Core Clinical Imbalances
Assimilation
Digestion, Absorption, Microbiota/GI, Respiration
Defense and Repair
Immune system, Inflammatory processes, Infection and microbiota
Energy
Energy regulation, Mitochondrial function
Biotransformation and Elimination
Toxicity, Detoxification
Communication
Endocrine, Neurotransmitters, Immune messengers, Cognition
Transport
Cardiovascular, Lymphatic systems
Structural Integrity
From the subcellular membranes to the musculoskeletal system
Antecedents, Triggers, and Mediators
Mental, Emotional, Spiritual Influences
Genetic Predisposition
Experiences, Attitudes, Beliefs
Sleep & Relaxation
Exercise/ Movement
Nutrition/ Hydration
Stress/ Resilience
Relationships/ Networks
Trauma
Micro-organisms
Environmental Pollutants
Personalizing Lifestyle and Environmental Factors

Every clinician has their WHY. Here are mine....

(Photo not included of my very supportive and encouraging husband)







Plus every single sweet child I have worked with along the way...though I cannot post their photos.

Goals:

-Review elements needed for brain fuel
-Be able to list various ways lifestyle, diet and supplements can impact the brain
-Understand some testing options and why they are important
-Tricks and tools for your toolbox
-HOPE!
-Time to answer your questions about functional medicine approach



Why are we seeing more of this?

This is a MUCH bigger question but I'll provide a few hints

- Our food is not as nourishing as it once was
- Our children are facing a significant burden to absorb nutrients and to clear toxins (glyphosate, food dyes, chemicals in foods, microplastics for example)
- Some foods are highly inflammatory for SOME children and we don't always know which ones
- Some children struggle to bring vitamins into the brain due to genomic differences (MTHFR, FOLR1, MUC1 etc.)
- We are SUCH a sedentary society and we were made to move!

Medicines Made by Movement

- Antidepressants
- Mood mellowers
- Dopamine, norepinephrine, serotonin, VEGF, acetylcholine, endorphins
- Anti-inflammatories
- Mental health = inflammation balances



ADHD: Numbers Growing And Burden To Individual And Family Is Significant

ADHD diagnosis rates are growing

- **1997:** ~6% 3-17 yo's diagnosed with ADHD
- **2008:** ~8% ADHD
- **2020:** ~10% today

Burden on individuals and parents for ADHD children is high

- **~5x higher cost to raise ADHD child than others, per 2019 study**
- Significantly higher unemployment rates as adults (22% vs 5%)
- Impact on romantic/personal life, significantly affecting metrics of relational stability and satisfaction.

Kuriyan AB, Pelham WE Jr, Molina BS, Waschbusch DA, Gnagy EM, Sibley MH, Babinski DE, Walther C, Cheong J, Yu J, Kent KM. Young adult educational and vocational outcomes of children diagnosed with ADHD. J Abnorm Child Psychol. 2013 Jan;41(1):27-41. doi: 10.1007/s10802-012-9658-z. PMID: 22752720; PMCID: PMC3505256.Zhao X, Page TF, Altszuler AR, Pelham WE 3rd, Kipp H, Gnagy EM, Coxe S, Schatz NK, Merrill BM, Macphee FL, Pelham WE Jr. Family Burden of Raising a Child with ADHD. J Abnorm Child Psychol. 2019 Aug;47(8):1327-1338. doi: 10.1007/s10802-019-00518-5. PMID: 30796648.

Current Autism Rates in US

1 in 36 children with increasing diagnosis

It is a broad topic we cannot cover today, but we all love someone with it. We owe it to them, to ourselves and to future children to continue to work on this. It is not a partisan issue. We must discuss all concerns and LISTEN to each other. Every single beautiful human has gifts and sometimes, it just takes the right approach to help uncover something that can help a child THRIVE.

What does the brain need?—-A lot, but here's what we will cover:

-OMEGAS

-B vitamins, B1, B2, B5, B6, B9—-OUR FRIEND, Folate :), B12

-Magnesium

-Zinc

-Iron

-Vitamin D

"But my child is a picky eater"

"We've tried this, none of it works."

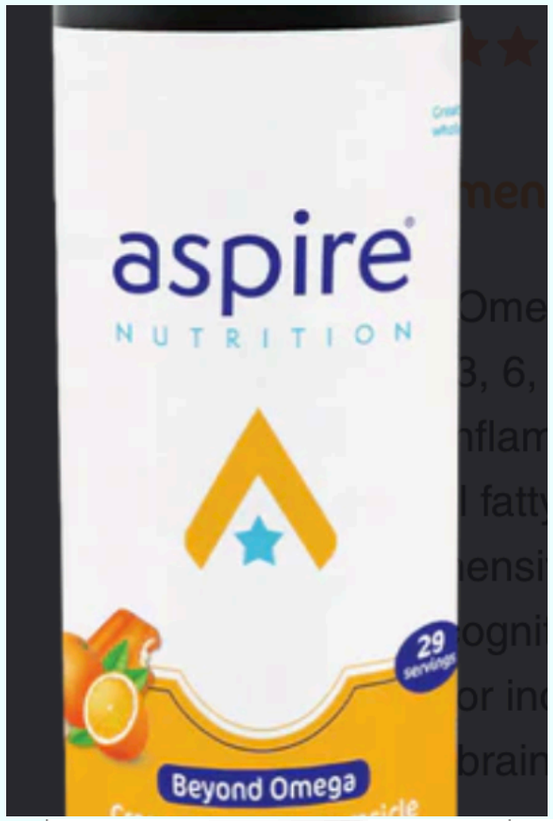
Omega 3, 6, 9 fatty acids

Help with inflammation in brain but also connectivity!

- These are obtained mostly from fish, fatty fish to be more precise, MOST children are not eating this.

- We can supplement this! When in doubt, aim higher than you think or reach out to pediatrician for dosing.

- Here are my favorites:









The nervous system needs our help to improve myelination, OMEGAS!



B VITAMINS: B1, B2, B5, B6, B9, B12



Next Level Urgent Care

FOOD FIRST! WHENEVER POSSIBLE





Some testing can be helpful here: blood draws, urine organic acids testing (OAT), IntellxxDNA, FRAT.





Here's where I share my love for folinic acid :) with a few stories....

name and image are not of my patient for obvious privacy reasons

3 year old with Autism

Primary challenges:

-sensory integration

-echolalia

-did not initiate verbal communication with family

-emotional regulation



SOMETIMES....it's worth finding out ;)

“She just called up the stairs, ‘Mama where are you?’ Even to just say “mama” when she’s looking for me would be amazing but the whole sentence-I will never forget this moment”

Mom’s report on progress: gut health, dairy free, leucovorin

Sharing some more favorites: consult a healthcare practitioner for further guidance

Some children do not tolerate methylated vitamins. If you see irritability, anxiety, trouble sleeping stop right away. They may need some prep work first....











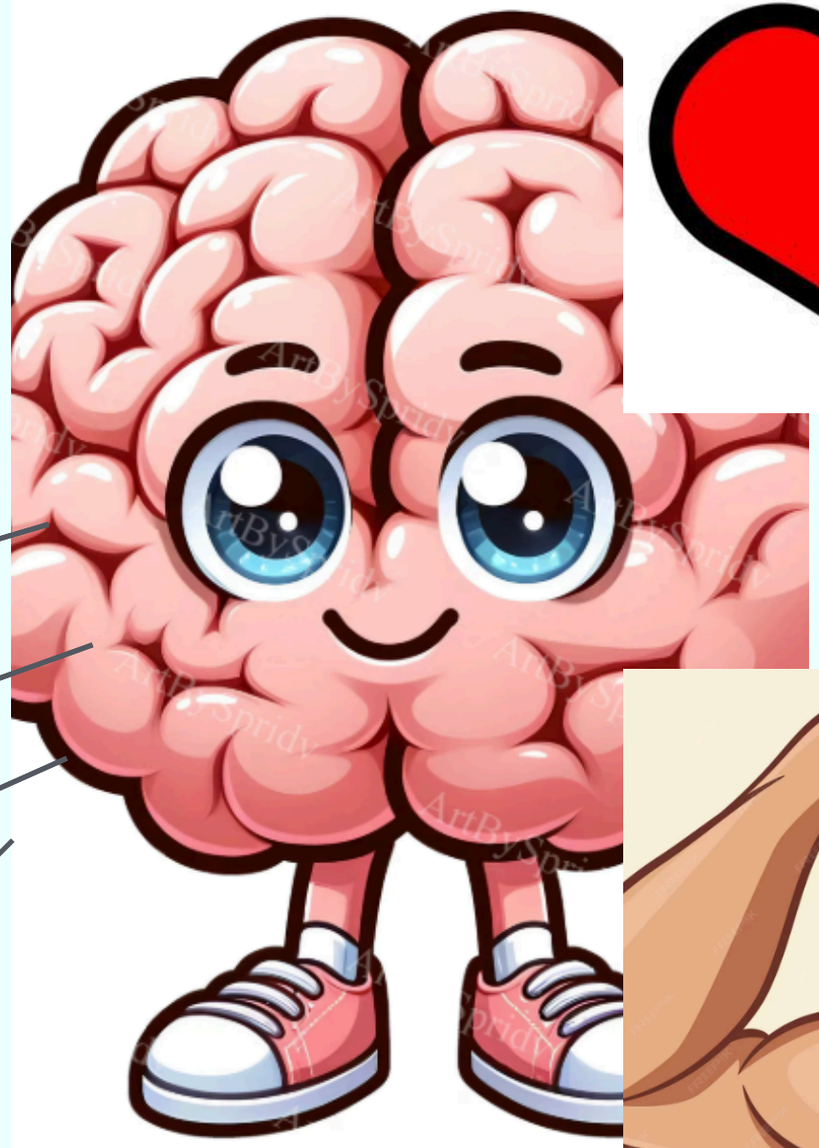
Parents know their children



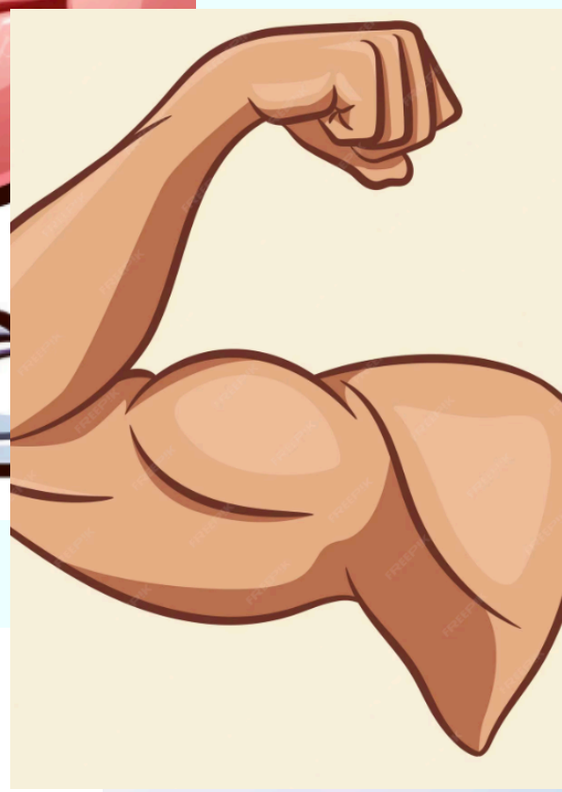
Magnesium

Many forms….

- Magnesium glycinate
- Magnesium malate
- Magnesium taurate
- Magnesium threonate
- Magnesium oxide
- Magnesium citrate
- Magnesium sulfite









Food Sources of Magnesium

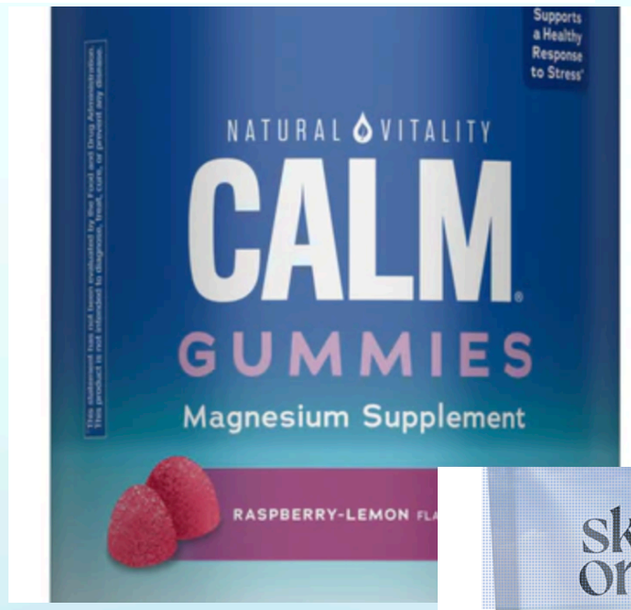
Pumpkin seeds are king!




OLLY
336 MG MAGNESIUM PER 4 GUMMIES
RELAXING MAGNESIUM
Supports Muscle Relaxation*
Magnesium Citrate
60 GUMMIES
DIETARY SUPPLEMENT
RASPBERRY LAVENDER
Flavored with other Natural Flavors


THORNE
Magnesium Glycinate
Chelated for High Absorption
DIETARY SUPPLEMENT
90 CAPSULES


Magtein
ORTHO MOLECULAR PRODUCTS
Because Efficacy Matters
CereMag
MIXED BERRY
ESSENTIAL MINERALS
Net Wt. 3.49 oz (99 Grams)
Dietary Supplement


Supports a Healthy Response to Stress*
NATURAL VITALITY
CALM
GUMMIES
Magnesium Supplement
RASPBERRY-LEMON


NEW LOOK!
sky organics
Epsom Salt
Magnesium Sulfate USP
soaking salts for bath and feet


QUICKSILVER SCIENTIFIC
LIPOSOMAL
Magtein
WITH 450 MG PHOSPHATIDYLCHOLINE
COGNITION + CALMING
Dietary Supplement
15.2 FL OZ (450mL)


life-flo
NEW LOOK
magnesium lotion
HIGHLY CONCENTRATED

ZINC

Major co-factor needed for neurotransmitter synthesis as well as immune function.

Exam and Labs

Helpful to understand

- If you remember ANYTHING said about zinc, it should be this.....DO NOT GIVE IT ON AN EMPTY STOMACH! It can cause nausea!

- If you're able to get labs here, very useful, also check copper as they are on a see-saw together

- Always try foods first! Think of this when child is ill frequently, anxiety/depression/eczema skin concerns



Caption

Iron

Important for energy production. Check this when fatigue, irritability, sleep disruption, poor growth, thin hair/nails etc. are of concern. Need a full panel!



It is important to try to understand why a child may have low iron levels, it is not always a result of lack of intake…sometimes it is oxidative stress, sometimes it is gut dysbiosis. Look at the whole picture

VITAMIN D, regulates immune function, important for neurotransmitter production—-particularly in the gut. Need sunshine exposure. MOST children are deficient. Goal >40 at minimum. You can give to much so discuss with clinician and hopefully check labs first









Where to start.....

At home

Small steps

One thing at a time

Don’t give up

Assemble a team





Dietary changes

Things to consider

- Dairy free as first intervention: many children are highly triggered by dairy, can impede uptake of folate in brain in some children, often increasing inflammation
- Gluten free (please test for Celiac first): this can not only decrease digestion burden to help with absorption and help heal gut, it can slightly decrease consumption of highly processed foods as well as glyphosate.
- Incorporate protein rich meals for breakfast
- Increase dietary fiber/color variety/hydration
- Involve your child in meal prep, bring back the family dinner table, make it special. They are more likely to eat it if you are together modeling it.

Breakfast ideas

To increase protein intake

- Try to aim for low sugar
- Opt for protein rich foods
- Smoothies are a great option for families in a hurry, involve the child in preparation and mix it up—-do not try to give them one everyday and do not make the same one each time. Invest in a resource for recipes
- Egg cups, protein waffles etc, all good options
- Recipe handouts will be provided from our certified functional nutritionist.

Environmental Considerations

Remove or reduce the following

- Artificial dyes and sweeteners
- Highly processed packaged foods
- Purchase a good water filtration device
- Turn off router at night, minimize use of tablets and no wifi devices in sleeping spaces: some children are HIGHLY sensitive to EMF put off by these and this measure alone can really help some children.
- Incorporate epsom salt baths to help with magnesium absorption, relax the child and help their body's natural processes for removal of chemicals
- Avoid spraying inside your home and ideally OUTSIDE your home with chemicals
- Avoid use of plastic especially to reheat food

What if I want labwork or a deeper dive for my child?

Consider working with an integrative or functional provider

- Your pediatrician may order standard testing for you if you advocate for your child, they truly want to help but are not usually set up for complex lab follow up—-schedule accordingly and schedule follow up visit to review with them.

- Seek functional or integrative providers who have sought extensive training and certifications and who are consistently working to expand their knowledge.

- Come to a first visit prepared with your concerns and what you are curious about, that time is yours and we will listen.

- Do not lose hope! When the body is in balance, a child will thrive.

Journey Pediatrics

Supporting the great adventure of parenting and childhood

- We are a small pediatric practice focused on health and well-being for our patients.

- We cap our patient volume to provide a relationship centered structure where families feel heard, seen and loved.

- If you'd like more information on how to work with us either for a specific program or concern or as a member of your child's team, please visit our website:

- myjourneypeds.com

