

CHILDREN'S NUTRITIONAL HEALTH

Diet, Sleep, and Supplements



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INTRODUCTION

Your children's health is top priority, and weeding through all of the information and opinions out there can be daunting. If you feel overwhelmed wondering how to support optimal health and wellness for your children, you're not alone.

This eBook compiles the top questions parents have about kids' health. Think of this resource as a one-stop-shop for answers to those questions. Topics include nutrition for focus and concentration, immune support, sleep and eating habits, probiotics, and key children's supplements.

Read it cover to cover, or focus on the topics that are most relevant to you and your family. However you use it, we hope this information helps you rest easy, knowing you have an arsenal of tools to offer your kids as they grow.



CHAPTER 1: NUTRITION FOR FOCUS

Does it sometimes seem like your child just doesn't want to pay attention? Like no matter what you try, they keep getting distracted by this, that, or the other? Parents know proper nutrition can have a positive effect on a child's health, but many aren't aware that it is also essential for proper growth, development, and mental focus.*

Like the heart, stomach, and liver, the brain is acutely sensitive to what we consume. In the same way, food is critical for healthy brain development, focus, and cognitive skills in growing children.



HOW DOES THE BRAIN WORK?

The brain is composed of billions of nerve cells known as neurons. Neurons allow the brain to communicate with the rest of the nervous system, a complex network that organizes, explains, and directs interactions between you and the world around you.¹ The nervous system is predominantly composed of fats, or 'lipids,' that are derived from an individual's diet and need to be supported by proper nutrition. These fats encapsulate—or myelinate—the neurons to help secure the impulses that make up our nervous system.

The brain also contains neurotransmitters, which are created from amino acids. Some of the amino acids that create neurotransmitters can be made in the body, but others must be derived from protein in the diet. If your child is not getting an adequate amount of amino acids, their body may not produce enough neurotransmitters, and this could potentially affect his or her ability to focus.*

For the nervous system to function properly, it also needs to obtain the proper macro-nutrients and micronutrients. It's necessary to ensure your child is getting the right vitamins—like B6, folate, and B12—as well as the essential minerals and nutrients needed to boost focus, concentration, and productivity.*

ESSENTIAL NUTRIENTS FOR IMPROVING FOCUS*

With many studies linking children's nutritional status to academic achievement and the ability to stay focused in the classroom, parents need to be more aware of their children's nutritional needs.^{2,3} In fact, providing children with a nutritious breakfast improves both their daily and long-term academic performance.⁴ To remain healthy, focused, and alert, children need different amounts of the following essential nutrients*:

DIMETHYLGLYCINE (DMG)

Dimethylglycine (DMG) is the N-dimethylated derivative of the amino acid glycine. It has been studied as a dietary supplement in children with communication or behavior disorders.⁵ As an immune system modulator, DMG supports circulation, oxygen utilization, brain health, liver health, cellular structure, cardiovascular health, and joint comfort and hydration.* A deficiency in DMG may leave someone feeling moody, apathetic, unmotivated, and unable to relax.*⁶

BETAINE

Nutritional insufficiencies can have adverse effects on brain development and neurodevelopment in children, thereby impacting their ability to learn to function socially.⁷ Parents can look to betaine—a component of many foods, including wheat, shellfish, spinach, and sugar beets—as a nutrient to help lower homocysteine levels—an amino acid-based hormone—and potentially support heart health.*⁸ Betaine helps the body use amino acids, the building blocks brain chemicals need to stay relaxed and focused, better.*

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VITAMINS: B6 (PYRIDOXINE), B12 (METHYLCOBALAMIN), AND FOLATE

Vitamins perform several essential functions in support of the processes described above, from incorporating fatty acids into the brain to converting amino acids into neurotransmitters.* Vitamins are vital for promoting and maintaining positive brain health, and deficiencies in essential vitamins are often implicated in problems related to focus in children.^{*9}

Vitamin B6 (pyridoxine) is involved in more bodily functions than almost any other nutrient. It affects both physical and mental health.* B6 is necessary for normal brain function and optimal function of the nervous system.* A deficiency in B6 can result in anemia. Sideroblastic anemia is a rare disease in the United States, affecting fewer than 200,000 people with low mood, fatigue, inability to focus, and impaired memory or memory loss.^{*10}

Vitamin B12 (methylcobalamin) is active in the growth and protection of the nervous system, and it is essential for the improvement of cognitive performance.^{*11} A vitamin B12 deficiency expresses itself in a wide variety of neurological manifestations, such as skin numbness, poor coordination, and reduced nerve conduction velocity.*

Experts consider folate, also known as folic acid, to be a brain food necessary for energy production and the formation of red blood cells.* It strengthens the immune system by aiding in the proper formation and function of white blood cells.* This nutrient may also help with feelings of low mood and anxiousness.*

MINERALS: MAGNESIUM

Magnesium is a vital catalyst in enzyme activity, especially in regard to energy production.* It also assists in calcium and potassium intake and maintaining a normal body temperature.* A deficiency of magnesium interferes with the transmission of nerve and muscle impulses, causing irritability and nervousness.^{*12} Supplementing the diet with magnesium can help mood troughs, dizziness, muscle weakness, and twitching.*

Maintaining a healthy brain is important for helping your child achieve optimal focus. Exposing kids to different kinds of food early on and focusing on nutrients like vitamins B6, B12, folate, magnesium, betaine, and DMG will greatly impact their health, academic accomplishments, and ability to focus—both now and in the long run.*

CHAPTER 2: NUTRITION FOR IMMUNE SUPPORT

One of the easiest ways to boost the immune system is through consuming healthy chemical- and preservative-free food. Keeping kids away from sugary cereals and microwave meals is essential to supporting nutrient-dependent immune cells.

Stress, anxiety, and sleep are crucial components that parents need to monitor to ensure that their children's immune response stays strong. Increasing the amounts of specific nutrients—and even exposure to a mild fever—are additional ways you can help maintain optimal health of your child's immune system.

ANTI-INFLAMMATORY FOODS

When approaching the immune response from a nutritional perspective, as a physician, I like to ask the following question: What are the phytonutrients that help our immune system work better?

Phytonutrients are natural bioactive plant chemicals known to have antioxidant and anti-inflammatory response properties. Antioxidants work by protecting healthy cells in the body from oxidative stress damage caused by unstable molecules called free-radicals.¹ Adding foods high in antioxidant content to your child's diet can be as easy as making a few simple adjustments, such as substituting romaine lettuce for kale, milk chocolate for dark chocolate, and blueberries for popcorn.

Avoiding foods that are known to cause a heightened inflammatory response—such as fried foods or refined carbohydrates—and choosing anti-inflammatory options is another way parents can work to support their child's immune system. Add ingredients like tomatoes, leafy green vegetables, olive oil, nuts, and avocados to your children's meals, as they are high in protective, anti-inflammatory compounds.²

GUT HEALTH: PREBIOTIC AND PROBIOTIC FOODS

Since stress is known to weaken the immune system, it is important for parents to know how to mitigate stress in their kids' day-to-day lives. The GI tract plays a direct role in the homeostasis of the immune system. Approximately 70% of the immune cells reside in the mucosa-associated lymphoid tissue (MALT) of the gut. Working symbiotically with the immune system, various beneficial microbes that reside in the gut help protect it from harmful pathogens, promote tolerance for harmless microbial organisms, and help the immune system remain self-tolerant.³

Prebiotic foods help keep the “good” probiotic bacteria alive by providing them with nutrients to thrive. Prebiotic foods include onion, garlic, chicory root, asparagus, and barley. Fermented foods such as yogurts, sauerkrauts, kimchi, and even pickles and olives fall into the probiotic category, as they provide “good” bacteria for the gut.⁴ Using both prebiotic and probiotic nutrients is a natural way parents can help improve the function of their child's immune system.

ADAPTOGENIC FOODS

Adaptogens are natural substances that help the immune response adapt to everyday stress.* They work through a number of different pathways in the body and primarily impact the hypothalamus, pituitary gland, and adrenal glands responsible for releasing hormones like cortisol.*

Often used in herbal medicine, adaptogens include mushrooms (like ashwagandha, cordyceps, and reishi), herbs (like tulsi, holy basil, and turmeric), and roots (like Siberian ginseng or liquorice root).⁵ It's often easier to find supplements or powdered versions of adaptogenic foods that can be given to your child with a glass of juice or blended into their morning smoothie to keep them feeling balanced and healthy.*

PRO-INFLAMMATORY FOODS

Pro-inflammatory foods contribute to the activation of the immune system and the inflammatory response pathways. The most common pro-inflammatory ingredients are high fructose corn syrup, trans-fats, refined carbohydrates, and processed meats. Milk protein (casein) is also a pro-inflammatory food. It's the casein protein in milk that often stimulates an allergic immune response. Parents can look for signs of intolerance to pro-inflammatory foods as symptoms that can include bloating, gassiness, or stomach pains.

While gluten allergies and sensitivities have become more prevalent in the U.S., researchers are still gathering data to discern whether the high spike in gluten-sensitive individuals is due to a reaction to the gluten protein. Many researchers are looking into other explanations, such as the high use of herbicide glyphosate (Roundup) or Bt-toxin, which can cause a wide-spread imbalance in gut flora and damage to the intestinal lining.⁶ Avoiding GMO and pro-inflammatory foods is a preventative measure parents should take to avoid any potential consequences for their child's overall well-being.

NUTRITIONAL DEFICIENCIES

Two common nutrient deficiencies can lead to a poorly functioning immune system: zinc and vitamin D. Zinc is an essential mineral that helps the immune system fend off harmful pathogens and keeps the immune cells functioning properly.* Zinc also acts as a free-radical fighter by preventing cell damage from free radicals.*

Deficiencies in zinc can lead to delayed developmental growth as well as a weakened immune system. Although severe zinc deficiency is rare in North America, according to Oregon State University, up to 12% of the United States population is at risk for mild to moderate zinc deficiencies.⁷

Parents should also consider screening their children for low vitamin D levels, as vitamin D deficiency correlates with a weakened immune system and is more common than one might think among children in the U.S. The American Academy of Pediatrics studied 10,000 individuals aged 1-21 and found that a shocking 9% of the population had a vitamin D deficiency, with 61% showing vitamin D insufficiency in the blood.⁸ Talking to your physician about the best way to add vitamin D to your child's diet will help keep their bones—and the rest of their body—healthy.*

LOW-GRADE FEVER

One of the things I like to express to parents is that our immune system is designed to fight off infections. Allowing our immune system to respond to a harmful pathogen is critical for us to be able to develop the ability to combat infections in the future. Thus, a low-grade fever may not necessarily be a bad thing.

Parents can allow their children's natural defense system to kick in before intervening with more aggressive treatment options, such as antibiotics. This type of worry-free, mindful approach will lower the risk of your child becoming antibiotic resistant and make their body's immune system naturally stronger.

A HOLISTIC APPROACH IS KEY

Maintaining a strong immune system requires certain foundations of a healthy lifestyle to be set in motion. Since the immune system is linked to every other part of our body, parents can take a proactive approach by ensuring their child's life is balanced. To reduce stress and anxiety, make sure your child is getting quality sleep, and provide your child with the right nutrition, you can:

- Pay attention to your child's academic and social pressures
- Encourage outdoor exercise and reduce electronic device exposure
- Add antioxidant and anti-inflammatory foods to your child's diet
- Reduce pro-inflammatory food intake
- Supplement nutrient deficiencies
- Allow low-grade fevers to pass naturally

Finally, keeping the conversation going with your pediatrician will help your child stay healthy and strong all year long.

CHAPTER 3: HOW TO CREATE HEALTHY SLEEP HABITS

Children's neurological, psychological, and social development are all dependent upon positive sleep hygiene. However, as many as 30% of young children today are having trouble getting a full night's rest.¹

By studying the issue of sleep inconsistencies among today's children, we have learned that a myriad of factors prevent them from getting adequate sleep. These range from technological influences that didn't exist decades ago to more psychological factors. Given what we know and what we continue to learn, how can we help our kids get the sleep they need?

HOW MODERN TECHNOLOGY IS AFFECTING OUR KIDS' SLEEP HABITS?

Technology has undeniably evolved over the years—and fast. Between 2011 and 2014, the ownership of touch screen devices like tablets or smartphones increased from 7% to 71%.²

Unfortunately, our increasing reliance on digital devices has created some negative impact on children's sleeping habits. Studies have shown that artificial lighting exposure before bed can suppress the melatonin synthesis in the pituitary gland beneath the brain³—the screens on tablets, cell phones, and TVs fall under the category of artificial lighting.

Unstable melatonin production can wreak havoc on our day and night cycles. It can even alter the brain pathways in young children, leading to less sleep and stunted neurological development. Therefore, parents must find a balance by recognizing the need for “screen time” in modern culture while also knowing when it's time to “power down.”

What are some helpful alternatives to smart phones and computer screens in the evening hours? E-ink readers, for example, have a stable pigment behind the reader's glass instead of back-lit pixels, which can be an excellent option for parents interested in reading to their kids at bedtime.

ROOM TEMPERATURE MAY BE A SLEEP CYCLE IMPEDIMENT

The second impediment to stable sleep cycles in children is room temperature. Historically, the sleep cycles of ancient human cultures were primarily determined by the setting and rising of the sun, along with the changing atmospheric temperatures during dawn and dusk.

Even without the influence of modern technology, our sleep cycles still follow the same evolutionary patterns of pre-industrial societies.⁴ As we have acclimated to modern, temperature-controlled houses, our internal physiology has lost the ability to engage in a natural shut-down sequence based on shifts in temperature.

Combine that with our constant consumption of artificial light, and it is no surprise that kids today struggle to establish a consistent sleep routine.

ISOLATION FACTORS

Some children suffer from the fear of missing out, and this creates adversity during bedtime when they know that their parents and/or siblings are staying up late. In other cases, some children simply dislike isolation, and that's what bedtime feels like to them.

It hasn't always been a cultural norm to sleep alone; in fact, it is a fairly recent development. Since human beings have not evolved to have our own private sleeping spaces, it feels unnatural for developing children to spend hours alone in a dark room.

If a child is having difficulty falling asleep alone, there are a few questions that parents can ask themselves: What can you do, as a parent, to help reduce their sense of isolation? Does this child have a sibling? Would it make sense to bunk them together in the same room?

Parents should also consider spending more time with their child before bed. Adding more time and devotion to a child's bedtime routine, such as reading or playing soothing music, could mean all the difference in establishing a healthy sleep schedule.

THE POWER OF RITUAL

Often, a child refuses to go to sleep, calls their parents to their bedroom numerous times, or even refuses to stay in their bedroom because they don't have a consistent bedtime routine.

If every night is different or if they don't have a series of actions set in place to indicate when it's time to sleep, it can be difficult for a child to start winding down mentally. A simple series of actions can be a simple fix to this issue. The child will recognize that bath time leads to storytime, which then leads to bedtime.

This form of ritual can be beneficial for the parent, as well. Consider it a bonding practice as well as a form of meditation. It is an opportunity for both parent and child to wind down from the day and create a comforting sense of connection that eliminates the fear of isolation that may keep your child from staying in bed at night.

WHAT TO DO WHEN RITUALS ARE DISRUPTED

It can take months for positive sleep habits to form. Even then, variations could crop up in the form of seasonal changes like holidays, which create shifts in routines. Other factors that can either positively or negatively affect a child's bedtime routine include what kind of day the child has had, what they have eaten, how they are feeling. Therefore, parents need to realize that making these changes can be challenging at times.

Every child is different. They each have individual needs that parents need to learn how to work with. The most powerful tool any parent has at their disposal is clear communication. In other words, they should explain to their child what is going on. They need to understand that they will feel better during the day and perform better in school if they go to bed earlier. Once you establish an open line of communication with the child, they often respond by sharing what is keeping them from going to bed in the first place.

Moreover, if there is going to be a significant disruption to a child's sleep routine, they need to know well in advance how their sleeping arrangements will be different. Even if their bedtime might be a little later for some reason, they should try to get a good night's sleep if they want to have fun the next day. These same principles apply if parents are having guests stay over.

When trying to improve bad sleeping habits in a young child, the most important steps involve establishing a routine and keeping communication open. It won't always be easy, and parents may not see results right away, but over time the habit will settle in. Through it all, parents can still take pride in any positive changes that occur. Maybe children aren't crying at bedtime anymore, or maybe they are staying in their bed. All of these are changes that will still have a positive influence on a child's development overall.



CHAPTER 4: HOW TO BUILD HEALTHY EATING HABITS

Children develop rapidly, and not only in the physical sense. Young children are, in a sense, “blank slates” as far as habits are concerned; they are continually forming new habits, and these habits are often carried over to adulthood. Practices around food and eating, especially, can truly last a lifetime.

If children grow up in a home where unhealthy foods are the norm and disconnection with mealtime is par for the course, they may have an unhealthy relationship with food down the road. These early dynamics may also result in a cycle that is passed on to their own children. Creating healthy nutrition for kids sets them on a trajectory for a healthier, happier future.

Here are the top six factors that play into healthy eating habits for children, some of which you can start implementing right away at home.

GET THEM COOKING

Most modern-day children are completely disconnected from the food on their plate. For example, if you go to McDonald’s for a hamburger, there’s no consideration of the original cow, the food that cow ate, or all the steps required to get that burger into your hands.

On the flip side, cooking with children is an amazing opportunity to teach them that eating is far more than just calories-in, calories-out. Instead, food can be about the connection you share with your family, and this awareness gives children a real opportunity to see the different ways a meal can nourish them. Furthermore, being involved in the cooking process gives them choices, and this helps them feel more participatory in the process. Think of it like this: most kids buy into the process of cooking and meal prep, which naturally makes them more excited and inclined to try the foods they helped choose and prepare.

Take this one step further and let your kids go with you to the grocery store. Let them help pick out the foods you buy. Get them involved in gardening, even if you’re only able to grow herbs in the window that you’ll use to cook with later on.



ALL ABOUT MEALTIME

In many households (especially with young children), mealtime can quickly turn into a nightmare of failed discipline and fear around whether your kids will eat enough. The truth of the matter is that children will not starve themselves, and they have the innate ability to lock into their satiety and hunger cues if we let them.

It's imperative to turn off the TV, put electronic devices away, and take advantage of mealtimes for calm connections. If children are distracted while eating, it disrupts their ability to recognize when they're full and may form dysfunctional eating habits. Ideally, mealtime is an enjoyable time for the whole family—actions like these foster a healthy relationship with food that will carry them into adulthood.

If your children are struggling to stay at the table or showing signs they aren't interested in eating—like throwing food—it's best to put their food away and let it be clear that eating happens at mealtime, and only at mealtime. Eventually, they will understand that this is their only opportunity to eat. Many parents end up pressuring kids to eat and worrying when they don't. Children feel this stress. Even small children can instinctively decide when they need to eat and when to stop eating, so trusting your children's natural impulses is imperative to avoid massive mealtime battles.

THE CLEAN PLATE CLUB AND DESSERT

This is a somewhat old-fashioned notion of how mealtimes should go, and it makes sense. When our parents and grandparents were growing up, the expense of food was ever-present, and throwing food away seemed out of the question. It was expected that children finished every last bite.

However, if you want your children to recognize their fullness, you have to avoid manipulating it. A better approach is to simply encourage kids to try everything on their plate. Many parents will use dessert as a reward for a clean plate, but it's best to keep dessert out of it.

Being rewarded for eating a healthy meal with unhealthy food won't help develop a mindful eating practice. Using food as a reward can also make your kids associate vegetables or food items they don't like with pain or discomfort, conflating sweet, sugary foods with joy and success. Instead, reward eating healthy foods with fun family activities and keep dessert an occasional treat that is not connected to finishing meals.

HOW TO OFFER HEALTHY CHOICES

It can take 10-20 introductions of a new food for your child to try it, so be patient and offer your child a variety of healthy choices. Ask them why they don't like a particular food (is it the taste, smell, or texture?), and try switching up your cooking method next time.

It's vital to stick with real, whole foods like vegetables, fruits, healthy proteins, and fats, and to avoid processed, packaged, and sugary foods. A moderate amount of whole grain bread or pasta, beans, and legumes can also create a healthy plate, instead of white flour alternatives.

As the parent, you are responsible for offering your child healthy food options. You must also plan for mealtimes instead of allowing your child to graze and snack throughout the day, to the point where they won't touch their dinner. Letting your child decide how much they want to eat—or if they want to eat at designated mealtimes—lets them assess their hunger and desire for food. Pressuring them to eat when they insist they aren't hungry can challenge mindful eating practices, rather than serving as a healthy eating habit for kids.

GET CREATIVE

The process of getting your kids to try new, healthy foods is often not as easy as it sounds—but some creativity can go a long way. Keep trying, work with your kids to find vegetables they enjoy, and—most importantly—have realistic expectations.

Maybe your child hates kale but loves broccoli—that's OK! Both are cruciferous vegetables with somewhat similar nutrient profiles. Broccoli could go nicely in a mac 'n cheese made with whole grain pasta, or on a homemade pizza with grain-free or whole wheat crust and other colorful veggies, some protein, and organic cheese. Smoothies with a handful of spinach and fruit are also hits with young children. It's best to be honest and transparent with your kids instead of “sneaking” foods in. They can usually tell and might react strongly by refusing to eat these foods in the future.

Try implementing fun games, like the “Adventure Bite,” wherein you let your kids have the foods they are comfortable with and enjoy, such as chicken tenders, encourage them to have an adventure bite at every meal—to try something from a parent's plate. This can make trying new foods fun and is more likely to be successful than loading their plate with a brand new vegetable, especially for picky eaters.

MAKE IT EASY

Life is complicated enough, so make making healthy choices as easy as possible. When you make anything easy for yourself, it becomes a habit more quickly, and the same goes for kids, too.

For example, have to-go containers for school or weekend outings accessible and ready to go with healthy snacks. These might be pre-sliced veggies and fruits, grapes, cheese sticks, hard-boiled eggs, whole grain or nut-based crackers, or whatever else your family enjoys. In many families, slow cookers or instant pots have become lifesavers. However you choose to do it, consider how you can make rushed mornings and tired evenings easier when it comes to healthy food choices.

Last but certainly not least, be a role model of healthy eating for your kids. Children pick up on your beliefs and attitudes about food more than you know, so let them see you eating a variety of healthy foods without judgment or labeling. Studies show that parental attitudes toward food and their bodies matter more than control over a kid's diet.¹

Remember that healthy eating habits for kids don't just include healthy food choices—they also encourage a healthy connection with the experience of eating. Cook with your children, teach them about the world we live in, and make mealtimes an opportunity for family connection. Children need to understand that while healthy eating is essential, it's just one aspect of developing healthy habits, self-love, and mindfulness.



CHAPTER 5: ALL ABOUT PROBIOTICS

Unfortunately, recent studies demonstrate an unprecedented increase in poor immune system health on a national scale.

The direct cause of poor immunity in children varies, with factors like heredity coming into play. However, as with most aspects of health, diet plays a significant role in supporting immune health. As we delve deeper into the positive effects of probiotics on the body, further tangible proof of their benefits rises to the surface.

BACTERIA AND THE BODY'S IMMUNE SYSTEM

Evidence shows the bacteria in our system at birth heavily influences our likelihood of developing a poor immune system as children.¹ A direct correlation exists between our immune system's response and the microbiome, or the bacteria, in our intestines. An imbalance in our gut's microbiome can trigger complex immune challenges.

With the evolution of the Western world and related dietary shifts, our microbiome has also changed. The concept of incorporating probiotics into our diet rests on the idea of improving the bacterial flora within our bodies. By eating better foods and creating better prebiotics to feed the bacteria within our system, its rate of symbiosis improves. With augmented levels of bacteria that our body interacts well with accumulating in our intestines, we are able to alter the immune response, resulting in better overall health.

However, numerous factors contributing to the bacteria levels within our systems complicate this issue. As Caesarean section births continue to rise, fewer babies are exposed to crucial bacteria during birth. The effects of this are carried with the child for the rest of their life, often contributing to immune system dysfunction.*

For this reason, studies have shown vast improvements in infants whose mothers ingested probiotics while they were pregnant, as well as when they were nursing.*



PROBIOTICS

When considering immune challenges and their varying reactions to probiotics, it's difficult to determine the extent to which they are a viable solution. In order to develop quantifiable evidence in support of probiotics for the immune system, we would need to calculate complicated data, such as which bacteria are in each probiotic, how many billion colony-forming units each has, how many are required to make an impact on your health, and in which carrier state they are.

Current research states that there are benefits to probiotic consumption, especially when consumed prenatally and in early life, and they present very little risk.* While this is true, the exact data is difficult to measure due to a plethora of contributing factors.

The key to achieving the best possible outcome relies on balance, as with most things. In order to live the healthiest, least encumbered life, we must balance a clean, plant-based diet with supplements to control our healthy bacteria.* This, in turn, balances our immunity, inflammation, and physical reactions on a cellular level. As we strive to arm our children with the best defenses while they grow and develop their delicate internal systems, probiotics are just one more weapon to make use of in our health arsenal.

IMMUNE CASCADE ON A CELLULAR LEVEL

When considering scientific studies on a cellular level, many different interactions occur. You must consider the effects of immune responses on T cells, or T helper cells, as well as cytokines, all of which are related to bacteria and the body's immune system. The effect of proper gut bacteria reaches the cellular level, where a complicated cascade of reactions takes place. Delving into this phenomenon, you can witness 10 or 20 different forms of immune cascades, all of which can be linked to various immune challenges.

OUTSIDE FACTORS

While the most prominent theory concerning immunity in children rests upon the levels of bacteria present in the body, certain outside factors also contribute. Exposure to food and elements through our mother's body determines our natural immunity to aggravators. And as we age, we become more sensitive to health and lifestyle habits that alter our immune responses.

Stress has been shown to dramatically weaken the immune system.* This demonstrates the multifaceted nature of external influence on the immune system and the near-impossibility of pinpointing a direct cause or a direct solution.

CHAPTER 6: KEY SUPPLEMENTS FOR KIDS

There's an abundance of confusion and misinformation out there when it comes to recommending supplements for children.

When parents want to know if a specific vitamin or herbal supplement may help their child with trouble sleeping, hyperactivity, digestive upset, or anxiousness, they often turn to their pediatrician for advice.*

But some pediatricians and family medical practitioners don't have much experience with supplements.

COMMON MISCONCEPTIONS ABOUT PEDIATRIC VITAMINS

While many scientific studies support the importance of supplementing vitamin D, omega-3 fats, iron, and zinc, it is crucial to make sure patients receive the appropriate dose.

Supplements labeled "pediatric" often have insufficient levels of the necessary vitamins and minerals to produce positive results. Kids love these products because they are loaded with sugar, but the nutritional value isn't there.

This is confusing for parents because they may believe supplements don't work.

For example, if a dose for a particular child is 1,000-2,000 mg of omega-3 fats and her parents purchase a pediatric supplement with 50mg of omega-3 fats in three gummies, the child will have to consume a lot of sugar in order to get a sufficient amount.

Most children require 25 mcg per day of vitamin D, but many pediatric versions of this supplement only contain 10 mcg. Well-meaning parents are likely to trust that the dose is adequate. They know how important it is for their child to get enough vitamin D, but the product misleads them.

Low iron is a persistent issue with children in our society. Many practitioners believe low iron levels are one of the driving factors behind many common challenges such as sleeplessness, hyperactivity, anxiousness, and low mood.

Supplementing a child's diet with iron sometimes causes digestive upset, so finding a pediatric iron supplement that kids like—and which doesn't cause stomach problems—is important to parents. However, they would be disappointed to learn the supplement contains only 2 mg of elemental iron when the appropriate dose for a child is 65 mg.

MANY SUPPLEMENTS FOR KIDS ARE LOW-QUALITY

Many pediatric supplements on the shelves today are little more than candy marketed as health products.

Parents search for safe supplements designed for children, and the word “pediatric” invokes a feeling of safety. It’s crucial for parents to understand that an appropriate dose may be higher than the stated dosage on the bottles they’re seeing in the store.

Proprietary blends that list the ingredients but don’t disclose the amount per dose is also confusing. For example, a product that claims to help kids relax and get a good night’s sleep may list 18 herbs and vitamins, one of which is valerian root.* If the necessary dose of valerian root is 400 mg and the entire proprietary blend is a total of 500 mg, one can assume that the supplement probably won’t deliver a high enough amount of the valerian root portion to have a positive effect.

SUPPLEMENTS CAN HELP FILL NUTRITIONAL GAPS

Vitamin D is essential to support overall health. It’s important for the immune system, mood, and many other processes in the body, including the absorption of certain vitamins and minerals.*

It’s nearly impossible to get enough sun to produce the required amount of vitamin D during the winter months, especially in the northern areas of the United States. Even during warm weather, time spent indoors and sunscreen prevent the body from producing this crucial vitamin.

It’s tough for kids to eat enough of the right kinds of food with vitamin D, too. Fatty fish and liver are not staples in most kids’ diets. Vitamin D-fortified cereal, orange juice, and dairy products increase intake, but these tend to be unhealthy sources and often still aren’t enough.

Canadian practitioners recommend 15-75 mcg of vitamin D for younger kids per day, and teenagers get 50 mcg per day. Vitamin D-fortified milk and orange juice offer 2.5 mcg in an 8-ounce serving, so it’s difficult for kids to ingest enough vitamin D-fortified foods to get an adequate dose of this vital nutrient.

OMEGA-3 FATTY ACIDS

Omega-3 fats are excellent at promoting a healthy inflammatory response and overall healthy cardiovascular system.*

An ideal diet would include adequate Omega-3s, but few people are willing to eat enough flax seed and fish to get the amount they need each day. High mercury levels in predatory fish are a valid concern for parents, as well.

ZINC

There's a link between low zinc levels and anxiousness, low mood, and hyperactivity in children. Supplementing with zinc also supports immune response, which is essential for overall health.*

It would be great if kids ate enough of the right foods to provide all these essential vitamins and minerals without having to take supplements—but many children eat processed foods because they cater to a child's palette and are virtually everywhere. Kids who have added challenges often struggle even more when it comes to eating food that provides them with the nutritional support they need.

PREBIOTICS & PROBIOTICS

Probiotics get a lot of attention for their ability to support a healthy microbiome.*

Gut problems are linked to abdominal discomfort, weight gain, and low mood, and unfortunately, we don't eat a lot of fermented foods in Western culture. An excellent prebiotic/probiotic supplement can help a child with digestive issues, since fermented foods and other sources of probiotics and prebiotics may be less effective due to your child's taste preferences.*

The vast majority of medical professionals agree that a child's ideal diet would provide them with all the nutrition necessary to achieve optimal health. Unfortunately, even parents with the best intentions cannot control everything their child eats. Teenagers can also be challenging when it comes to meeting their nutritional needs through diet. This is why high-quality supplements provide the nutritional support needed for optimal health in most young folks.*





CONCLUSION

Just like adults, there's no one-size-fits-all approach to children's health. You are their best advocate, as you know them better than anyone. Never hesitate to follow your gut to the doctor's office if something seems out of the ordinary.

On a daily basis, doing your best to offer your children a healthy and balanced nutritional foundation, plenty of physical activity, the right supplements, and lots of love will set them up for success.

