



Practical safe steps which can be implemented at home on behalf of your child with autism or a related disorder.

Disclaimer: As each child is unique, it is always best to consult with Dr. Green or a MAPS certified practitioner.

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FIRST STEPS

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Perhaps you have come to this page because your child has been recently diagnosed with autism or a sensory processing disorder. Or perhaps you don't have a diagnosis, but have a quirky kid who has some concerning behaviors and you are looking for some help. Does your child have a rigid restricted diet? Does he avoid eye contact or cry for "no reason"? Is he obsessed with certain objects?

You are in the right place.

Dedicated, wise, and persistent parents have played an enormous role in bringing effective treatments to children with autism and related disorders. Children with autism, with obsessive-compulsive disorder, with mood disorders, with ADHD, with sensory processing disturbances, with seizures, with severe complex allergies and other chronic disorders all of have much in common.

- Conventional medicine has failed to treat or fully resolve the underlying health issues of these children.
- Environmental influences play a major part in the genesis of these disorders.
- Medical research into these disorders has been committed to finding pharmaceutical remedies, rather than causes, prevention, and cures.
- Committed parents, often working together with open-minded, innovative health professionals, have brought much help to their children, relying most commonly on natural remedies and diet.

It's good to start early-

You can help your child today in profound ways with or without a doctor. Trust yourself and take action. While it is best to have your child evaluated medically as soon as you suspect that anything is wrong, you don't have to wait for a diagnosis to start helping your child.

About a week before his first birthday I finally googled "toddler object fixation" and suddenly came face to face with the list of early symptoms of autism. Henry had them all. He was not pointing and used no gestures, he seemed to have lost the two words he had gained around 10 months of age, he did not respond to his name and in fact we could not get him to respond to us at all. His attention was entirely focused on objects and he had developed an intense aversion to electronic sounds. We had him evaluated through a local developmental clinic and he scored in the very high risk range on their autism assessment so we began some therapies and I started doing a lot of research to understand what treatments were available.

First a note on the autism epidemic

I believe, and this is supported by lots of evidence, that there is not one particular cause of autism, but instead multiple factors which produce a “perfect storm.” These factors include environmental toxins such as heavy metals, pesticides, PCB’s, flame retardants, and plastic derivatives, processed nutrient depleted foods, electromagnetic pollution, antibiotics and surgical births disrupting the gut microbiome, and overzealous use of poorly tested vaccines.

Autism derives from a perfect storm of factors including environmental toxins such as heavy metals, pesticides, PCB’s, flame retardants, and plastic derivatives, processed nutrient depleted foods, electromagnetic pollution, antibiotics and surgical births disrupting the gut microbiome, and overzealous use of poorly tested vaccines.

Together, these stressors, imposed on a **genetically susceptible child** cause the injuries and functional disruptions, which we call autism. We have always had genetic susceptibilities, but the whole epidemic of autism is new, occurring in the past two generations.

Autism is an epigenetic disease and the following interventions aim to help your child’s body come back into balance and heal itself.

- [Start with your child's diet](#)
- [Add basic supplements](#)

First Steps

Keep Good Records

I suspect you are anxious to get started, but this step is critical. In essence, you are acting as a scientist on behalf of your child and a scientist needs to make unbiased observations and keep good records.

You know your child better than anyone and are therefore in the position to make the best daily observations about your child. Record the changes you are implementing (including diet) and any changes you observe in your child. Most parents in our practice

have a large notebook where they keep records, write observations and if applicable, store lab reports.

Most children who make large gains show slow, gradual progress, rather than dramatic and obvious changes. Keeping good records is essential not only to note these changes, but also to guide future interventions. When you are in the trenches with your child every day, it is easy to lose sight of any gains they might be making, thus your log can become a source of hope and inspiration.

Establish a baseline.

Start by making a problem list and note the areas of struggle or difficulty for your child. These may include:

- problems with sleep,
- eating issues (sensitivities, restrictions)
- stools (including frequency, odor, color or texture),
- language problems
- understanding and problem solving
- susceptibility to infections (ear, colds, strep, etc.)
- sensory difficulties
- obsessions
- social difficulties
- stims (hand flapping, jumping, echolalia, repeating movie scripts, weird sounds)
- crying or tantruming
- unexplained pain or agitation
- aggression towards self or others
- lack of eye contact or response to being called

Score or rate the severity of each problem, with a grading system from 1 thru 5.

- 1 = very mild
- 2 = mild
- 3 = moderate
- 4 = severe
- 5 = very severe.

These two steps, while sobering and possibly depressing, will give you a baseline and help you to better identify changes related to interventions and development. Review

and update the ratings every week or so, making sure to add any more problems which may be occurring. Small changes may not be recognized without keeping a log such as this. I cannot overemphasize the importance of this step.

Implement One Change at a Time

In order to see what helps your child and what is not useful, develop a methodical system for introducing interventions.

Change on thing at a time asking four questions:

- Is it tolerated?
- Is it helpful?
- If it is helpful, in what ways?
- If it is helpful, how do we maximize the noted benefits (dosage, frequency, etc.)?

Diet is a powerful tool, and is an example of a safe home-based intervention. It is important to realize that when you make an intervention, you are doing a scientific trial with the goal of helping your child.

This method of forming a hypothesis, performing an intervention, and evaluating by observation is the best way to go about making adjustments to your child's diet, providing nutritional supplements, herbal therapies, homeopathic or energetic treatments, and also pharmaceuticals (for children under the care of a physician).

Parents have noted sleep improvements, decreased constipation or diarrhea, better eye contact, improved speech, improved concentration or problem solving abilities. The body is a mystery and can respond in many different ways when you feed it the nutrients that it needs.

Make good observations and avoid being too strongly attached to your hypothesis. You will have the best success discovering the most effective interventions for your child if you adhere closely to the regimen you are following, while making regular observations and being willing to modify your program if progress is not substantial.

Start with Your Child's Diet



Food is the greatest and most constant molecular input into the body and therefore a good place to start when you want to bring balance and health to your child.

Step 1:

Start by eliminating “nonfood” items and empty calories from your child’s diet. This includes eliminating sugar, corn syrup, agave, artificial additives such as dyes, artificial flavors, sweeteners, MSG, or other nonfood ingredients.

Eliminate nonfood items:

- Sugar
- Corn syrup
- Agave
- Artificial additives
- Aspartame and other artificial sweeteners
- MSG also known as “natural flavors”
- and any other ingredients you can’t pronounce or sound like chemistry class

This may be difficult with a child on the autistic spectrum, who may be very rigid about food choices. This can be a step-wise process over a period of weeks, or it can be an overnight change. It’s worth the effort; as you begin to improve his health you’ll most

likely see improvements in functioning. Be assured, there is no risk of causing harm by removing empty calories and nonfood items from his diet.

With all of these interventions, it is best to take the “offending foods” out of the house and put the whole family on the diet. This not only helps to increase compliance, but it also lessens the stigma and sense of being left out that your child might feel.

Step 2:

Eliminate the four foods which most commonly cause problems in children with autism and related disorders: **casein** (all milk products **including butter and ghee**), **gluten (including gluten free oats)**, **corn, and soy**. This can be done in one step, or by addressing one group at a time. These foods are common allergens, but also cause problems in other ways through indigestibility and production of neurotoxic by-products which act like morphine the bodies of children who do not tolerate them. Gluten free means removing wheat, barley, rye, and “**gluten free oats**,” which contain a gluten-like protein that causes problems for most children with autism. We recommend a trial of three to six months to see if these dietary changes are helpful.

Remove the Four Most Common Offenders

- Gluten (including gluten free oats)
- Casein (all dairy products including butter, ghee and camel’s milk)
- Corn (including corn syrup and corn starch)
- Soy

This step is a very powerful intervention for the majority of children on the autistic spectrum, often bringing improvements in neurologic function, intestinal symptoms, behavior, sleep, and other areas. As one mom who implemented the gluten free casein free diet when her toddler was 15 months old reported:

Our first dramatic improvements came through diet. After removing dairy he regained some eye contact and began using words again. He was noticeably more present and we saw smiles again, and his constipation improved somewhat. His daily bouts of inconsolable crying stopped within days after we removed wheat.

It is frequently difficult and daunting for parents to make these changes, as so many children with autism and related disorders are basically addicted to some or all of these foods. **In general, if your child has a strong craving for a food, it is likely that your child has an allergy or sensitivity to that food.** It may seem as if your child will

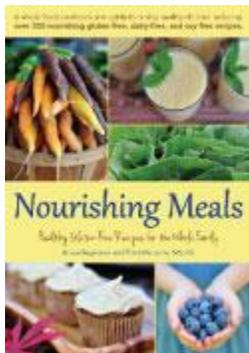
starve without her chicken nuggets, pizza, ice cream, or corn-based breakfast cereal. You may feel as if you're abusing your child by taking away his comfort foods.

Be aware that he won't starve in a few days, or even in a few weeks, as long as you keep offering the permitted foods which he'll accept. **It is, however, critical to be sure that he is getting enough fluids while you rearrange the diet.** This can include water, fruit or vegetable juice, herbal tea sweetened with honey, coconut water, smoothies, frozen confections such as homemade sorbet, etc.

The best way to start the diet is to build upon the foods that your child eats which are already gluten-, casein-, dairy- and soy-free. For example, fruit, nut butter, potatoes, meats, vegetables. After that, you can start offering new foods and sneaking healthy foods into smoothies, soups or ground meat mixtures. Keep the energy around the diet light and carefree. It is not a battle of the wills. Keep offering- you will prevail.

I cared for a child who at the age of four would only eat Lay's potato chips. At one point, his mother became fed up with his rigidity and decided to put him on the Specific Carbohydrate diet (without dairy), a diet which removes all starches from the diet. She took him to a small cabin and only brought the foods which are allowed on the diet. He cried for four days and only drank water, but then he started accepting the food that she offered. Eventually, he was eating all fruits, vegetables and meats. She would make spaghetti sauce with meat and vegetables which he happily ate. Perhaps this sounds brutal and even abusive to some, but remember that you are fighting for your child's health. ***Food is medicine and the right foods can assist your child's body in coming back into balance.***

Another parent started by giving her child homemade bone broth in a syringe. She told him that it was medicine and this helped him to receive it.



As you begin, work on getting sufficient protein into your child's diet. For a five-year old, this daily need can be met by as little as four ounces of meat or four eggs or two cups of homemade bone broth (which can be used to make fruit juice—yucky thought, but doable for the little one who won't knowingly eat protein). Combinations of vegetables, grains, nuts and beans can easily meet the protein needs if your child is inclined to be a vegetarian.

Many of the concepts we discuss are expanded upon in a cookbook we love, [Nourishing Meals](#) created by Alissa Segersten and Tom Malterre, MS CN. Tom is a wise nutritionist who has made a huge contribution to the autism community and

Alissa is an amazing cook. The cookbook is geared towards “raising healthy children from pre-conception onwards” and offers a delicious and balanced approach.

Further dietary attunements

Returning to the concept of being scientific and forming hypotheses. If you observe that your child is improving on the gluten and casein free diet, you may form the hypothesis that your child has gut problems and may be helped by further dietary changes. You then could take the step of removing all starches to see if your child continues to improve. Many parents have implemented and seen benefit from the GAPS diet or The Specific Carbohydrate Diet (without dairy). If you see no improvement or worsening of symptoms with these modifications, you would want to return to the gluten and casein free diet.

If these interventions feel too overwhelming to start on your own, know that we are here for you and schedule an appointment with Dr. Green or [Dr. LaRosa](#).

Add Basic Supplements

Adding supplements is the next reasonable step toward improving your child’s health and function. Supplements may be started after your child has been on the full gluten free casein free, corn, and soy free diet for a week or so.

As with diet, each supplement should be introduced one at a time, recording your observations.

Some of the suggested supplements are so commonly lacking in our diet that it is safe and acceptable to add them without testing for deficiencies. These include zinc, omega III fatty acids, vitamins C and D, magnesium, and, in the dairy-free child, calcium. Also, vitamin A is commonly deficient..

And so, for an average-sized five year old child, give the following:

DAILY DOSES

- Zinc (15-30 mg)
- Cod liver oil (1-2 tsp)
- Vitamin D (2000 -5000 Units),

- Magnesium (100-300 mg)
- Vitamin C 500-3000 mg (higher dose for laxative effect if needed)
- Calcium 200- 400 mg (if dairy free)

These supplements should be added one at a time. Wait 3-7 days before adding the next supplement and again, keep good records of any improvements or signs of intolerance.. They are essential to health.

As supplementation is intended to repair deficits of nutrients with widespread effects, you may see many improvements. However, with the below listed foundational nutrients, you may not see obvious symptom improvement, but are building a better foundation of health for your child.

- Zinc- possible improvements in sleep, immune function skin, growth, and sometimes appetite (taste buds).
- Cod liver oil- possible improvements in eye contact, skin health and immune defenses, as well as decreases in agitation or hyperactivity.
- Vitamins A and D have major importance in immunity, and help with detoxification and decreasing oxidative stress.
- Magnesium may help with calming, sound sensitivity, sleep, and constipation.
- Calcium may also be calming and is often helpful with children who press on or gouge their eyeballs. (These children may require higher doses up to as much as 2000 mg per day.)
- Vitamin C helps with immune function and may soften stools with higher doses, if needed.

The ingredients of the supplements we recommend have been thoroughly researched by Dr. Green. [Purchasing supplements](#) from our store allows us to offer scholarships to families in needs and supports the educational outreach efforts of this website.

Depending on the customs regulations of your country, we will likely be able to ship supplements to you internationally. Please [contact our office](#) for more information. If you live in Europe, many supplements may be available through [Kirkman UK](#), [Amazon Europe](#) or [iherb.com](#)

Be aware with mineral supplements, that labeling can be confusing, as minerals are actually a salt containing two ingredients (e.g. calcium carbonate, zinc picolinate, magnesium glycinate, etc.). In each case, the second component is heavier than the mineral, and the label needs to be read carefully to obtain the desired dose. For example, a bottle of calcium carbonate may read “1000 mg.”. The fine print may show that 2 capsules provide 1000 mg of calcium carbonate (and may or may not tell you that calcium carbonate is 40% calcium, so that 2 capsules give you 400 mg of calcium and

600 mg of carbonate). **When we speak of dosages of mineral supplements, we mean elemental minerals, or the mineral itself, and not the entire compound.**

Administering Supplements

You will undoubtedly meet resistance when you decide to give your child a strange tasting powder or oil, and succeeding with some of the unpleasant tasting supplements requires ingenuity and perseverance. When Dr. Bernie Rimland, sometimes called the Father of biomedical treatments for autism, was asked by a parent how to get her child to take supplements, his succinct answer was, “Who’s bigger?”. It usually requires tough love and experimentation. I also encourage parents to be honest, telling their child, “This is medicine,” which means 1) “You have to take it,” 2) “It probably tastes bad,” 3) “It’s good for a person,” and perhaps 4) “It’s the doctor’s orders, not mine, so don’t blame me, I’m sorry it tastes bad.”

The most reliable to administer supplements is with a medicine syringe, just as you would give an antibiotic. You can likewise sweeten it with juice concentrate, maple syrup, etc. If you use a syringe you’ll most likely have to train your child to accept the syringe, by repeated practice. Other parents have found smoothies or homemade sorbet or fruit-sicles, or for the rare child who eats it, soup, to work as a vehicle to administer supplements. Failing this, several companies have formulated many of their supplements in naturally flavored, sugar-free liquids or powders to make them more palatable. And some supplements such as zinc, vitamin D, magnesium, calcium, are easily concealed in juice or food.

Introduce Probiotics and Digestive Enzymes

Probiotics may be helpful if your child has bowel problems of any sort, or a history of repeated infections and antibiotics. Some good versions, [all available in our store](#), are:

- Probio Gold (Kirkman Lab)
- Super Pro-Bio (Kirkman Lab)
- Therbiotic Complete (Klaire Lab)
- Custom Probiotics D lactate free
- VSL#3
- Megasporebiotic
- Thorne Sacro B

- L.Reuteri Custom Blend (Kirkman Lab)

Probiotics, or beneficial bacteria for the bowel, come in a variety of forms and packages. A good place to start is a combination containing strains of Lactobacillus and Bifidus, in doses between **20 billion per day and 900 billion per day**. You'll be using capsules or powders which list dose and strains information on their label. Most over the counter commercial preparations are not nearly this potent.

Some children respond much better to one product than to another, and so it is worth trying one brand for a few weeks, and then switching to something different (e.g. one containing Bacillus Subtilis or Saccharomyces Boulardi).

If no improvements are noted, stop the probiotic and consider if for a future time. It may be particularly beneficial to feed your child cultured foods such as coconut kefir or sauerkraut or unpasteurized pickles or other home cultured foods which contain lots of good bacteria.

Digestive enzymes may provide considerable benefit for abnormal stools, abdominal pain, food intolerance, and difficult behaviors. As with probiotics, there are a number of good products available, and it is useful to try several different preparations in order to obtain the best results. We recommend that you do a two to three week trial with at least two different preparations, including a plant based enzyme and a pancreatic (animal based) enzyme, as their effects can be quite different. Give an enzyme with every meal. We carry the following quality enzymes in our [store](#):

- Jarrow Jarro Zymes
- Thorne Dipan
- Kirkman DPPIV with Isogest
- Houston TriEnza (chewables)

A small number of children react negatively to probiotics or to enzymes and can't take them, but may benefit from them at a later date after correcting other factors such as bacterial or fungal overgrowth. However, these are so often helpful and most often well tolerated, that they should deserve to be trialed in most every child.

Supplements for Specific Conditions

As you add supportive therapies, be sure to continue to reference your problem list and grading system regularly, to address the four questions posed above. The next step is to consider more selective supports, based on your child's symptoms and diet.

Autism and related disorders are very complex and each child's physiology is unique. While none of the above-listed interventions are dangerous, choosing the right supports and their proper sequence can get very complicated. When possible, it is best to work with us or another trained MAPS practitioner to guide you in the supplementation process.

Children Who Don't Eat Meat

If your child does not eat meat and has not in his lifetime, iron will be most likely deficient, and can be safely supplemented at 15-30 mg per day. (Blood testing by your physician for Fe and TIBC and/or ferritin will identify iron deficiency if present). Iron may improve energy, focus/hyperactivity and immune function, but can be constipating. We recommend [Ferrisorb](#). Empty the capsule into food. It's an excellent iron supplement, but tastes bad. An alternative is [Gentle Iron](#) drops, or simply using homemade bone broth generously in your cooking. You can use it to make smoothies, cook non-gluten grains and of course, to create soups. You can find bone broth recipes online.

Check iron and zinc levels.

If you are supplementing iron and/or zinc, the blood levels should be checked within 4-6 months, to be sure that iron or zinc levels don't get too high, or that zinc doesn't cause copper to drop too low. We would like to see both serum zinc and copper levels at close to 100 mcg/dl.

Children Who Eat Few Fruits and Vegetables

If your child eats very few fruits and vegetables, B vitamins and trace minerals (including selenium, chromium, manganese, molybdenum in particular) may be helpful. Many supplement companies make balanced trace mineral supplements which

also contain 10-25 mg of zinc, thereby replacing your zinc supplement, but make sure not to give one which contains copper, which is rarely needed, and may be toxic to children on the spectrum. Some of our favorites, available are Kirkman Lab's formulas, Brain Child formulas, Klaire Lab's VitaSpectrum, and Daily ONE. [Buy from Store](#)

Children with Sleep Problems

Sleep is so very important to everybody!

There are many causes of sleep disturbances in children with autism. Some common causes are gastrointestinal reflux, low blood sugar, allergies, sinusitis, sleep apnea, constipation/abdominal pain, bedroom lights suppressing melatonin, mineral deficiencies, low serotonin from poor protein intake/digestion, heavy metal or pesticide toxicity, abnormal adrenal activity, inflammation in the nervous system, unrecognized seizure activity. While it is important to identify and treat the causes of sleep problems, it is safe and reasonable to offer help while exploring causes. The first remedy to try would be low dose melatonin, starting with 1/4-1/2 mg at bedtime. If this is not helpful within a few nights, obtain a "[sleep packet](#)" from our office. This contains trial doses of a number of natural remedies which often help with disturbed sleep. Try one remedy at a time for several nights in the doses indicated, looking to identify one which has good effect on sleep onset, duration, and quality. As they are gentle, natural substances, it is safe, and may be necessary to give several (those which have helped somewhat) together for best effect.

Even if your pediatrician struggles with the idea of treating "autism," they should be comfortable with helping you search for and correct the underlying causes of sleep problems.

Children with Constipation Problems

Constipation is another common ailment in children with autism, and can lead to major disruptions in behavior, sleep, eating, and detoxification.

- Constipation means abnormal elimination of stool, including:
- stools which are abnormally large in volume or diameter,
- bowel movements less than once a day (even if they are soft),
- painful bowel movements.

Again, while searching for the root cause of constipation with your pediatrician or MAPS practitioner, it is reasonable and safe to offer gentle support. As described above, diet is very important. Probiotics and digestive enzymes may be helpful. Magnesium (Oxy-Oxc , vitamin C, beet/carrot juice (or Beta TCP or magnesium citramate), and aloe vera are safe, natural remedies which may prove helpful. If you try a remedy for constipation, you should see benefit within one week if it's going to prove helpful. You may combine several remedies if you see partial improvement.

Laxatives are not a solution to the problem, but may provide great benefit in terms of pain relief. I prefer not to use Miralax except very briefly, if natural remedies don't work. It is not a safe longterm remedy, though it is often prescribed by other physicians for long term use. Senna is a preferable laxative for short term use.

B Vitamins

B vitamins, while grouped as a single type of supplement, mainly because they are water soluble and work somewhat in concert, are actually very different one from another, and deserve a separate discussion.

Kids on the autism spectrum are most commonly helped by methyl B12, B6, B3 and reduced folic acid (folinic acid or methyl folate). Contrary to popular opinion, it is not necessary to give all the B vitamins when supplementing, though there is often a deficiency or need for several of them which may benefit from a complete B supplement, such as Basic B complex by Thorne Lab

Methyl B12 injections are one of the greatest helpers in our practice.



Improvements in speech, understanding, sleep, behavior, mood, energy, and executive function have been noted in children with autism and related issues. A small percent of children become hyperactive after methyl B12, and need to have lower and/or less frequent doses or be switched to hydroxyB12. A very small number simply do not tolerate B12 at all. Please note that **methyl B12 injections** are far more effective than by oral route or lotion or nasal spray.

A prescription is required to obtain methyl B12 injections. Consult your physician to see if he or she is willing to write a prescription for you. It is available from [Hopewell Pharmacy](#) in New Jersey (USA), who can ship internationally. It may also be available through many other excellent compounding pharmacies throughout the U.S. We can also assist in providing guidance about how to safely and easily give the shots (which are very nearly painless, except for the angst of the parent giving the shot). The usual starting dose is (methylB12, 25 mg/ml), 0.01 ml per 10 pounds of body weight, given by very shallow subcutaneous injection every 3 days. If you can't get injectable methyl B12, it may be of value to do a trial with oral methyl B12, available as lollipops, lozenges, powder or pills.

Vitamin B6, in combination with magnesium has been used successfully in autism for decades, and shows benefit in around 30% of children. When effective, it seems to help make children more comfortable in their bodies, calming and improving problem-solving through communication and better access to their own resources.

Starting doses of around 50 mg are commonly used, and may be increased incrementally up to maximum of around 8 mg per pound of your child's body weight. For example, a 30 pound child might go up to 240 mg per day. It should be combined with magnesium in the doses described above. Vitamin B6 can cause a sensory nerve problem in high doses, but there has been no demonstration of this problem in autistic children receiving these maximum doses over long periods of time. However, as always, it is essential to be gentle and observant. An easy preparation is Kirkman Lab's Magnesium B6 lozenges(link), which are flavorful. Alternatively, we use their Super Nu Thera (link) with 250 mg of B6 per 3 caplets, and start with ½ caplet daily, working up by 1/2 caplet every 3-5 days as tolerated, and according to response.as described over a few weeks, as tolerated.

Do not raise the dose if you see signs of intolerance, which consist of agitation or disturbed sleep, and if these symptoms occur, it should be discontinued. A later trial may be beneficial when the digestive tract is functioning better, and when the child has a good daily intake of protein.

DISCUSSION OF FOLINIC ACID AND METHYL FOLATE USAGE

Folinic acid or methyl folate are active forms of folic acid which work together with B12 to enhance:

- energy production and transport,
- neurotransmitter synthesis,
- myelin production,
- detoxification, cellular communication,
- immune function,
- and gene expression and regulation.

Folic acid, which is found in many supplements, but not in foods, requires activation by an enzyme (called MTHFR) which is frequently impaired in children with chronic health problems. As a consequence, it is preferable to use either folinic acid (available by prescription as Leucovorin, or as methyl folate (available by prescription as Deplin), or in Thorne 5 MTHFR in our [supplement store](#).

Also, there is a second factor which may increase need for active forms of folate, which is the finding of antibodies against folate receptors. These antibodies are found very frequently in children with autism, and may impair absorption and transport of folate

into the blood circulation and into the brain. People with this problem usually need much higher doses of active folate to attain good health.

For these reasons and other more complex considerations, support of the folate pathway is frequently helpful in children with autism, and is extremely safe, even at high doses. Children may become agitated if the dose is excessive or if they are hypersensitive. Starting with a dose of 400 mcg (0.4 mg) per day, one may raise the dose by doubling every 5-7 days, to a dose of 1600 mcg. We have found that some children need extremely high doses of 5000 to 40,000 mcg per day, due to one or both of the above-described problems.

These extremely high doses are best given by prescription (as Leucovorin or Deplin), though if insurance doesn't cover, [5 MTHFR by Thorne Research](#) is a less expensive over the counter brand we carry in our online store.

Please note that blood levels of both vitamin B12 and folic acid are a poor indicator of nutritional status. These vitamins are critical in brain function and blood levels correlate poorly with the level that is actually getting into the brain. This is due to impairments in brain uptake of these vitamins from the blood stream, which has been identified in studies of children with autism. If the blood levels are low, then the brain is likely also deficient, but if blood levels are high, this may indicate a block in brain uptake, with actual brain deficiency.

Vitamin B3 ([link](#)), known as niacinamide, has also been called the “sleep vitamin,” as it enhances serotonin and melatonin levels. Niacinamide thus may be calming, and it sometimes helps reduce stimming behaviors. It also is essential in the energy and antioxidant pathways which are so critical to healthy brain function. Niacinamide should be given with an equal or greater dosage of supplemental vitamin C (for every 500 mg of B3, give at least 500 mg vitamin C). The usual doses in 40-50 pound children are 250 to 500 mg per day. In very high doses, vitamin B3 can cause liver stress, which is generally associated with nausea and or decreased appetite.

A reduction in appetite should be taken as an indication to stop B3 and/or check the ALT liver enzyme level in the blood. It's best to avoid niacin which is a form of B3 in children with autism, as it may cause intense and unpleasant flushing.

Though [TMG and DMG](#) are not officially B vitamins, they are water-soluble nutrients which are safe, occur naturally in the brain, and are often helpful in children with autism related disorders. Both TMG and DMG help improve immune function, and may improve speech, awareness, and attention. Both can cause overstimulation or agitation,

and TMG is somewhat more likely to do so. If this should occur, the child will calm down to baseline within a day or two of discontinuing the supplement.

Some children clearly respond better to DMG, and some to TMG, and some to the two together. For [TMG](#) we generally start with 125 mg per day, working up as tolerated to 500 mg or higher per day. Dr. Rimland, who is considered the father of biomedical treatment for children with autism, told me about a few children with severe agitation or aggression who responded to DMG doses of up to 2000 mg per day. Also, these high doses have occasionally produced notable improvements in speech.

For [TMG](#), we use doses of 175 mg to start, and may move to doses as high as 1000 mg per day with further benefit. One good study used a TMG dose of 2000 mg per day without problem in any of the children.

DMAE has brought improvements in disposition, behavior and language, with doses of 50 to 300 mg daily. Higher doses are safe, and could be used if the child is showing encouraging improvements on lower doses. Occasionally, children will become agitated on DMAE, and it must be discontinued.

General Comments Regarding Supplementation

It is my observation that children with autism may react paradoxically to almost any remedy offered. While dangerous reactions are extremely rare (except for the possibility of harm to self or others if a child becomes extremely agitated or aggressive), it is not uncommon in many parents' experience that their child will react unpredictably to some interventions. The most common adverse reaction is agitation, which most likely reflects a discomfort he's not able to explain. In some cases, the agitation is a sign of a healing crisis, or a healthy readjustment occurring with some resistance. Nevertheless, in all cases it is an indication to reduce the dose, or stop the remedy and provide further support to the body before offering it again. This experience is in line with the finding that children with autism are often very different from one another, so that it is not reliable to predict an effect in one child based on an effect seen in another child. **You need to work with your child as an individual, while still learning from the experiences of other children.**

While all of the remedies and interventions described above are safe and approved for use without prescription, we strongly encourage you to work with a physician. It is best, when possible, to establish a doctor-patient relationship with Dr. Green or Dr. LaRosa [The Evergreen Center](#) or a [MAPS certified practitioner](#).

The above described remedies represent a good group of supports which should help to improve your child's health, and may also improve many of his symptoms and problems.

Autism is very complex, and there are many more interventions, sometimes including prescription medications which may be needed to make further gains. These include herbal supplements, sulfur supports (glutathione, NAC, Epsom salt baths, MSM, taurine), other vitamins (B's, K, E, carotenoids, biopterin), amino acids, laxatives, prescription or natural antimicrobials (for parasites, yeast, bacteria) both, hormones (thyroid, cortisol, growth hormone, oxytocin, secretin), detoxification remedies (chelation, intravenous remedies, etc.), anticonvulsant medications, intestinal anti-inflammatories, and so on. As we learn more about autism, promising new remedies emerge, which are especially helpful with some of our children.

It is evident as you begin to consider the complexity of childhood illnesses, that working with an open-minded, well-trained health professional is optimal. Our purpose is to support you and your child in your healing world. We are here to [support you](#) with in-person visits, video-conferencing, and phone consultations. There are also many [MAPS certified practitioners](#) throughout the United States. Alternatively, check out our [Treatment Resources](#) page, join communities of like-minded parents such as [TACA](#) and [autism360.org](#), and begin to intervene on behalf of your child.