The Plantrician Project

Planting the seeds of change™

Pediatric Plant-Based Nutrition **Quick Start Guide**



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Pediatric Plant-Based Nutrition Quick Start Guide

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1.



Welcome to Your Pediatric Quick Start Guide

Bringing Plant-Based Nutrition to Growing Children

Welcome to The Plantrician Project's Pediatric Quick Start Guide! This guide is meant to be a child-focused supplement to our original Plant-Based 1XWULWLRQ 4XLFN 6WDUW *XLGH ZKLFK LV OOHG RI LQIRUPDWLRQ DQG SURYLGHV D ZRQGHUIXO VX *a plant-based diet.*

If you are holding this pediatric guide, you may already know about the PDQ\ EHQH WV RI DGRSWLQJ D ZKROH IRRG SODQ *optimizing health and well-being and helping prevent chronic disease. But, you may be wondering if a whole food, plant-based diet is safe and healthy for growing children.*

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In this guide we will address common concerns about adopting a whole food, plant-based diet for your entire family, and we'll provide plenty of practical tips, strategies and recipes so that you can move IRUZDUG ZLWK FRQ GHQFH

Did you know that hardening of the arteries begins in childhood, making heart disease a pediatric health issue?

Did you know WKDW GHVSLWH WKH NQRZQ EHQH WV RI vegetables, up to half of the teens in several states eat less than one serving a day?

Did you know that current trends suggest that one in three children born in the year 2000 or thereafter will receive a type 2 diabetes diagnosis in their lifetimes (for Hispanic children, trends indicate one in two)?

Did you know that obese children are likely to become obese adults? At age six, the risk is 50%; although, for obese teens it's as high as 80%!

Did you know that less than 3% of Americans, including kids, JHW WKH PLQLPXP UHFRPPHQGHG DPRXQW RI EHU

Did you know that infants start developing taste preferences in the womb?

Did you know that you have the power to optimize your families health by preparing and serving delicious whole food, plant-based meals?



2. Overview: Whole Food, Plant-Based Diets and Kids

A diet founded on unprocessed whole plant foods contains everything needed to nourish us at any life stage.

In fact, the Academy of Nutrition and Dietetics' 2016 position statement unequivocally endorses that:

> *"appropriately planned vegetarian, including vegan, diets are healthful, nutritionally adequate, and may provide health benefits for the prevention and treatment of certain diseases. These diets are appropriate for all stages of the life cycle, including pregnancy, lactation, infancy, childhood, adolescence, older adulthood, and for athletes. Plant-based diets are more environmentally sustainable than diets rich in animal products because they use fewer natural resources and are associated with much less environmental damage. Vegetarians and vegans are at reduced risk of certain health conditions, including ischemic heart disease, type 2 diabetes, hypertension, certain types of cancer, and obesity. Low intake of saturated fat and high intakes of vegetables, fruits, whole grains, legumes, soy products, nuts, and seeds (all rich in fiber and phytochemicals) are characteristics of vegetarian and vegan diets that produce lower total and low-density lipoprotein cholesterol levels and better serum glucose control. These factors contribute to reduction of chronic disease."*

Children who eat a plant-based diet experience normal growth and development. In addition, their risk of developing chronic diseases such as obesity, heart disease and diabetes is drastically reduced compared to children eating a Standard American Diet (SAD). Children raised

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on a plant-based diet also experience lower rates of acne, allergies, upper respiratory infections, ear infections and digestive issues. Eliminating dairy from the diets of infants and children suffering from constipation and colic has specifically been shown to be beneficial and, in some cases, completely curative!

A plant-based diet also minimizes children's exposure to environmental toxins and pollutants that can be particularly harmful to their developing brains. Heavy metals, organic pollutants and pesticides have been implicated in diseases such as cancer, asthma, lead poisoning, neurobehavioral disorders, learning and developmental disabilities and birth defects. These dangerous compounds accumulate in greater and greater concentrations as you move up the food chain, so the highest concentrations are found in fish and animal products.

Those same animal foods also carry a higher risk of exposure to bacterial contamination, synthetic growth hormones and antibiotics (which also contribute to the rapidly growing problem of antibiotic resistance).

Another benefit of adopting a plant-based lifestyle for your family is the opportunity it brings to teach children valuable life lessons, such as environmental stewardship and compassion toward all living beings.

Despite all of these benefits, many parents, concerned family members, and even some healthcare providers often worry that a plant-based diet for children is too complicated or difficult for busy families to manage. The truth is, once you get the hang of it, a plant-based diet is no more difficult, time consuming or expensive than the SAD.

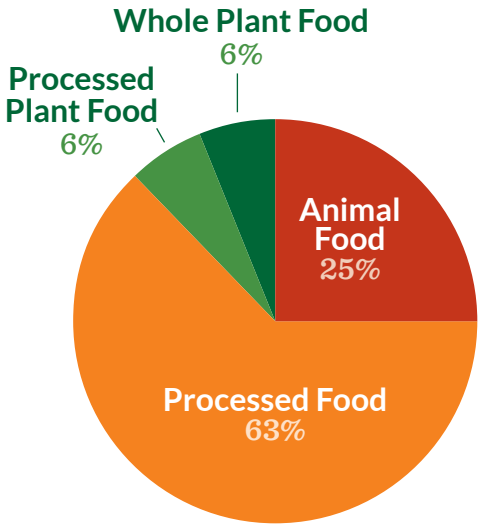
In fact, a plant-based diet is a far better way of meeting the nutritional needs of growing children than the average American diet. A plant-based diet is rich in phytonutrients, vitamins, PLQHUDOV DQG EHU ZKLFK DUH DOO RIWHQ lacking in the SAD.

Many children in the United States have diets with alarmingly poor levels of nutrition. Many Americans, both adults and children, don't come close to meeting the recommended daily servings of fruits and vegetables. The Centers for Disease Control and Prevention (CDC) recommends five or more servings per day. Yet the highest consumption among Americans was found in only three states where people ate only two servings per day, according to a 2013 report.

That same report showed that teens were only getting about one serving per day, and in several states, close to half of teens ate fewer than one serving per day. This grim picture of the SAD is further illustrated in the chart below, showing a mere 12% of calories coming from fruits and vegetables. And a full half of those calories come from processed vegetables such as french fries. Most of us are only getting 6% of our calories from unprocessed, plant-based foods.

All of this goes to show that the SAD is hardly well balanced or nutritious. But a plant-based diet that provides sufficient calories and includes a variety of plants in their whole, unprocessed form (such as vegetables, fruits, whole grains, beans, nuts and seeds) as well as fortified foods (including plant-based milks and cereals) can easily meet the nutritional needs of growing children.

The Standard American Diet



Source: http://www.healthylunches.org/nutrition101.htm



3. What Should Kids Eat?

Young children should be introduced to a wide variety of plant-based foods right from the start!

A well-designed whole, plant-based diet can provide children with the key nutrients and calories they need to grow and thrive. Animal products like meat, fish, poultry, dairy and eggs are not necessary for healthy growth and development.

Children older than two have no special dietary needs that would require different nutrition than adults. From birth to two years old, the main difference is that rapidly-growing children require more calorie-dense foods and a higher percentage of their calories from fat. Other than this extra attention to fat content and calorie density, children can, and should, eat the same meals as the rest of their family.

Parents are responsible for the food that is offered to their kids, which means they have a great opportunity and responsibility to influence and shape their child's palate.

A plant-based home offers a variety RI FRORUV DYRUV DQG that provide a broad nutritional H[SHULHQFH IRU FKLOG

You can offer three or four food groups at each meal and two food groups at each snack. This gives children the opportunity to obtain all the macronutrients and micronutrients they need for a balanced diet that will allow them to thrive. Children have increased energy needs, but their small stomachs and shorter attention spans mean it's important to have calorie-dense foods that are high in complex carbohydrates and fats at every meal like nut butters, hummus and avocados.

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Carbohydrates

Just like an adult, the majority of a child's calories should come from complex carbohydrates so that they will have enough quick energy to learn, grow and play! Plant-based eaters often get up to 80% of their calories from complex carbohydrates. The key is to make sure those carbohydrates are coming from unprocessed, plant-based complex carbohydrates such as vegetables, fruits, legumes, whole grains and whole grain breads and pastas. Carbohydrates should not come from the processed, refined grains that are found in most chips, crackers, breads and pastas.

Fat

Fat is essential for meeting caloric needs and are the building blocks of cellular membranes, which is especially important for growing brains! Fat should not be limited between the ages of one and three, and it should make up 35 to 40% of calories. Between the age of 4 and 18, the requirement is still high but declines to about 25% of daily calories. Comparatively, adults should consume only 10 to 15% of calories from fat. Be sure to include plant foods that provide the important omega-3 fatty acids, such as chia seeds, walnuts, flax and hemp seeds. Other great fatty foods to include at each meal are avocado, other nuts and seeds, nut butters, olives and full-fat soy products.

A word about oils:

For adults whose bodies have been suffering the effects of the SAD for decades, and especially those who already have severe disease, the evidence is clear that a very low-fat, plant-based diet with no added oils is not only beneficial but can also be life-saving. However, this may not be appropriate for young children. Fortunately, kids have the benefit of health and youth and can tolerate and thrive on a diet that does include some added oils. If you look at the healthiest populations around the world, most of their diets are 90 to 96% (not 100%) whole food, plant-based. For kids starting out on the right foot with a whole food, plant-based diet early on, using some oil for cooking and baking is fine. Choose an oil high in omega-3 fats such as flaxseed, walnut or algae.

Protein

Protein is an important macronutrient used in the building, repairing and maintaining of bones, muscles, skin and blood. It also provides the building blocks for enzymes, hormones and vitamins. While growing children have higher protein needs than adults, they can still easily meet those needs on a plant-based diet. Children who eat a vegetarian or vegan diet regularly meet or exceed protein requirements for their age. Including protein sources at each meal will help your child feel full and satisfied. Higher protein plant foods include beans, nuts, seeds, soy (tofu and tempeh), whole grains and vegetables. (See page 31 for more information on protein).





4. Nutrition During Pregnancy and Lactation

A diet based on a variety of whole, minimally processed, plant-based foods can easily meet the heightened nutritional demands of pregnancy and breastfeeding.

Eating this way is one of the most important things you can do to impact the health of your baby. It's not only a safe diet, but it's also highly beneficial! A woman's body weight and nutrition during pregnancy affects the health of her baby for the rest of his life. What mom eats during pregnancy and breastfeeding also establishes her baby's taste preferences, setting him/her up for healthy eating for life. A plant-based diet during pregnancy is endorsed by the American Dietetic Association (ADA), the Academy of Nutrition and Dietetics (AND) and the American College of Obstetricians and Gynecologists (ACOG).

Pregnancy is a time when it's more important than ever to avoid environmental toxins, food contamination, pathogens and exogenous hormones, which are all more likely in animal foods. Interestingly, all the foods on the "do not eat" list for pregnant women are animal foods: mercury-laden-fish and other seafoods, deli meats, soft cheeses, undercooked meats and eggs, sushi, pate, etc.

During pregnancy, women certainly require more calories, but not necessarily different types of foods. Your body will still thrive on the same fuel — that is, calories from wholesome, nutrient-rich, plant-based foods. The key is to make sure you're eating enough calories and focusing on calorie-dense foods that are high in healthy proteins, fats and a few important nutrients.

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During pregnancy, a woman will take in an extra 80,000 calories and two pounds of protein to grow her baby. That sounds like a lot, but it actually only amounts to an additional 340 calories per day during the second trimester and 450 calories per day during the third trimester. It's certainly not "eating for two," as is often said. Those calories could easily be accounted for with 1 cup of beans, 1 ½ cups of brown rice or cooked greens or two slices of whole grain bread. Similarly, while a woman is breastfeeding, she needs about 500 extra calories per day during the first six months and 400 calories per day during the second six months.

We know from population studies that a plant-based diet is safe for pregnant women. A vegan community called The Farm collected data on pregnancy outcomes of more than 2,000 women in the 1970s. They showed that these women were not only OK, they had:

- Lower rates of cesarean section
- Lower rates of postpartum depression
- Lower rates of dangerous complications of pregnancy, such as preeclampsia and diabetes
- Lower rates of maternal and infant death

In addition, a plant-based diet provides numerous benefits to mom during pregnancy:

- Improved digestion with less constipation
- Less morning sickness and muscle cramps
- Lower weight gain
- Less acid reflux

Nutrients to consider

The amounts of some nutrients in breast milk, including the B vitamins, iodine and selenium, are dependent on how much the nursing mother is taking in through her own diet. Improved maternal nutrition and supplements can improve milk quality and infant nutrition.

Other nutrients, such as folate, calcium, iron, copper and zinc, remain at relatively stable levels in mom's milk regardless of her intake. However, mom's own reserves may be depleted, and she will still benefit from ensuring adequate intake of these nutrients as well.

Vitamin B12

Anyone following a strictly plant-based diet should be supplementing B12. This is especially important during pregnancy and lactation. Vitamin B12 plays a role in preventing neural tube and other neurological defects in newborns. Pregnant woman should continue to supplement B12 with at least 2.6 µg per day. For nursing mothers, an adequate level of B12 ensures baby is getting enough B12 for as long as breast milk provides a majority of their calories (usually 9 to 12 months).

Folic acid

Folic acid deficiency has been known to cause neural tube defects in the developing fetus, and it's important for pregnant women to take in adequate folate. Pregnant women need about 600 mcg of folic acid each day. The good news is that folate is exclusively and abundantly found in plant foods. Some people say we should think of this problem as a "plant food deficiency" and not a "folic acid deficiency!" It's actually pretty hard to be folate deficient on a whole food, plant-based diet. One cup of beans and one half cup of cooked leafy greens daily would provide adequate folate. If you are unsure whether you're getting enough, or if you are having trouble eating adequate amounts of food due to nausea early in pregnancy, we recommend a folic acid supplement of 400 to 800 mcg.

Iron

Iron needs increase during pregnancy from 18 mg per day to 27 mg per day due to increased blood volume and fetal development. Most women can get enough iron from a thoughtful plant-based diet. Women who are



unable to consume enough iron or who are obese, anemic, already iron deficient or carrying twins should consider adding a low-dose iron supplement during pregnancy and follow up with their healthcare provider to reassess supplement dosing.

Omega-3 Fatty Acids

Omega-3 fatty acids play a role in the proper development of the infant brain and retina. It's unclear whether pregnant women consuming a plant-based diet need to supplement omega-3s, but a low-dose algae derived supplement does seem to be safe. We recommend that women following a strictly plant-based diet during pregnancy and lactation take an additional 200 mg of DHA daily from an uncontaminated source such as algae. (see page 27 for more information on omega-3s).

Protein

Protein requirements increase by about 30% during pregnancy, amounting to an extra 10 to 20 g per day. This "extra" protein will come along with the "extra" calories she is eating, provided that those extra calories are coming from unprocessed whole, plant-based foods. Focus on adding high protein plant based foods, such as beans, greens, tofu or broccoli, every day. One cup of lentils or tofu alone will add about 20 g of protein. Protein supplements are not recommended for anyone, and they can be especially harmful during pregnancy.

Calcium, Zinc and Other Micronutrients

Pregnant women need more of just about everything! They will get just the right proportions of various micronutrients by eating more calories from the same nutritious plant-based foods they enjoyed before pregnancy.

Iodine

According to the World Health Organization, iodine is essential for healthy brain development in the fetus and young child. During pregnancy, a woman's iodine requirements increase substantially and may need to be supplemented to ensure adequate supply to the mother and baby. Historically iodized salt was the primary source however due to recommendations to decrease salt, iodine deficiency has been on the rise. Current recommendations are for 150ug/day from potassium iodide sources. Kelp sources of iodine can vary widely and are not recommended.

Prenatal Vitamins

It's always better to get your nutrients from whole foods and not pills. Supplements can never replace a healthy diet, and this is especially true during pregnancy. Prenatal vitamins often contain two to five times the recommended daily allowance of many vitamins and minerals. Some of these nutrients may not be safe for you or baby in such high doses. If needed, focus on the specific nutrient that concerns you (iron, omega-3s, etc.) and find a reasonably-dosed supplement.

Teaching Taste with Every Bite

Did you know that nearly all taste preferences are learned? Taste is a cultural phenomenon — we learn to like those foods that are familiar. The good news is that we can learn to like new foods at any age! Studies show that it takes about 12 weeks for our taste buds to adapt and appreciate new flavors a wonderful process called neuroadaptation.

Surprisingly, children start to develop their taste preferences as early as 15 weeks gestation. They learn from the foods that mom eats during pregnancy, because these foods flavor the amniotic fluid in the womb. Women who eat more garlic have amniotic fluid that tastes "garlicky," for example. Women who eat lots of carrots during pregnancy and breastfeeding have babies that prefer carrots! The more whole, plant-based foods that baby is exposed to during pregnancy, the more he is "primed" to like those foods later.

Infants continue their taste adventures through breast-feeding — breast milk is even more strongly flavored by the food that mom eats. And the foods that we like when we're young tend to be the foods we eat our whole lives. Studies show that our food habits when we were two years old are a pretty accurate gauge of how we will eat when we're twenty. Our earliest flavor experiences provide the foundation for life-long food preferences.

With every bite or drink you take during pregnancy and lactation, you are nourishing your baby and teaching him about food, flavor and healthy eating — lessons and habits that will last a lifetime!

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5.

Whole Food, Plant-Based Nutrition for Infants and Toddlers

General Timeline of Nutrition in the First Two Years

Birth – 4 months:

Only breast milk or formula

4 – 6 months:

Start complementary foods when baby is developmentally ready and interested. Start with one meal per day. Each meal may only consist of a few bites.

6 months:

Introduce finger foods, and offer a sippy cup with water at each meal if you haven't already. Add a second meal.

Around 9 months:

Baby should now be eating three meals a day composed of purees and some table foods. Introduce utensils if you haven't already. Baby should be eating a full variety of plant-based foods. Some foods may still need modification (cutting into smaller pieces, overcooking, etc.) to avoid choking hazards. Baby's milk intake has likely started to decline.

By 1 year:

Baby should largely be eating what the rest of the family eats with less modification. The majority of his calories should come from solid food. Milk intake is likely about half of what it was at six months. Introduce a regular cup for water if you haven't already and start weaning off the bottle. Add in an afternoon snack. Kids will need to eat

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about every three hours, so depending on your schedule they may need a morning snack as well. Baby should start a B12 supplement if he haven't already.

After 1 year:

It's OK for baby to have honey now. Baby will continue to explore more challenging textures and complex flavors. It's OK to wean off formula now, but we recommend continued breastfeeding if possible. It's also OK to introduce a plant-based milk if desired. You should start a B12 supplement if you haven't already.

The Early Months

The only food that infants need for the first four to six months of life is their mother's milk. Breast milk is nature's perfect food! It provides just the right proportions of protein, fat, carbohydrates and water along with the vitamins and minerals that babies need. Interestingly, breast milk is only about 5% protein. There is no other time in our lives when we grow as fast as we do during our first months, and we do it on only 5% protein!

Breastfeeding also exposes your baby to all the flavors that you are eating. Babies have already gotten a "taste" of your healthy plant-based diet through flavors in the amniotic fluid, and breastfeeding continues their education. Breastfed babies have been shown to enjoy a wider variety of foods than formula-fed babies, and they often prefer the foods their mother ate while nursing. Breast milk also provides all the essential micronutrients and water that infants need. There is no need to supplement with any other foods, including water.



When to Start Complementary Foods

The American Academy of Pediatrics recommends exclusive breastfeeding for the first six months of life. Prolonged exclusive breastfeeding is correlated with reduced incidence of obesity and an improved immune system. However, research also shows that there may be several advantages to starting solid foods as young as four months. Earlier exposure to allergenic foods such as peanuts and wheat has been shown to decrease risk of allergies later in life. Also, there seems to be a window between five and seven months where babies are developing taste preferences.

Introducing babies to healthy plant foods during this time can help ensure they develop a taste for healthy plant foods for life.

Breastfeeding transfers the mother's microbiome to the baby and provides unique sugars that feed the babies growing microbiome. Most babies are ready to start solid foods between four and six months of age. It's time to begin introducing complementary solid foods when your infant: is able to sit in a high chair with good head control, can grab for things to put in her mouth, stops thrusting her tongue and starts showing an interest in other foods.

How to Start and When to Progress

Starting solids is a big step in your infant's development! You are introducing new flavors and nutrition sources, and your baby is learning a new developmental skill. This is also a great time to be sure the rest of the family is eating healthy foods, because babies will look to their parents and other family members to mimic their eating habits.

Starting solid food is a full sensory experience! Babies are learning new flavors, textures, smells and feels. The goal is to expose your infant to a wide variety of new healthy foods and have fun doing it. Be sure to play up all the different aspects of a new food. For example, "This is an avocado, it is green, creamy and slippery, yummm!" The amount eaten is less important in the beginning. Start with one meal per day. Your baby may only take a few bites and that's OK — follow her lead.



The most cautious approach is to offer new, single-ingredient foods one at a time every few days. With each new food you introduce, watch your baby for any signs of allergic reaction, such as hives or other skin rashes, facial swelling, vomiting, diarrhea, coughing, wheezing, difficulty breathing, weakness or pale skin. There's no current scientific evidence that foods need to be introduced in a particular order.

If your infant does not seem to care for a new food, don't discard it! Research shows LW FDQ WDNH WR child will accept a new food. Take a break and offer that food again a few days later. Familiarity leads to preference, so just keep offering with a smile.

First foods may need to be pureed and offered on a spoon. Don't add the food to the bottle. Depending on your baby's age and development, she may also be ready for soft finger foods. Foods that are the consistency of a ripe banana or softer can safely be offered in small pieces to young babies without additional mashing or blending. It's normal for babies who are learning to eat to occasionally gag on food and spit it out, and this will happen regardless of the texture.

Breast milk or formula will continue to make up the bulk of your babies calories for the first six to nine months. Milk intake usually peaks around six months and then starts to slowly decline as baby eats more food each day. By one year, many babies are drinking about half the volume of milk they did at six months.

The Toddler Years (1–3)

Toddlers can be challenging in many ways, and food is no exception. The how, when, where and how much to feed plant-based toddlers is not any different than their meat-eating counterparts. A "fear of the new" often surfaces at this age, and it can manifest as picky eating, even in kids who used to eat anything as infants. It's vitally important that parents remain in charge of food choices and continue to offer a wide variety of wholesome, plant-based foods, even if kids refuse them.

Toddlers have small stomachs and shorter attention spans. They need frequent small meals that are calorie- and nutrient-dense to meet their needs. Their appetites can vary dramatically throughout the day and from one day to the next. Offer toddlers five to six small meals per day, and trust that they will eat when they are hungry. Children are very good at taking in enough calories to support their needs — they will not starve themselves! It may be helpful to assess your toddler's diet over the course of a whole week and worry less about the day-to-day variation.

Types of Foods

As we have laid out, children should be eating the same unprocessed whole, plant foods as the rest of the family. Avoid processed "junk" foods marketed for children, including puffs, pouches and teething crackers. Pouches can be an easy and convenient way to feed your baby on the go, but be aware that they generally have added sweeteners and they often contain very small amounts of the vegetable featured on the front. In addition, the pouches may contain milk, which is not recommended, especially for babies under age one. Always read the ingredient list on any packaged food to ensure it is made with only wholesome, plant-based ingredients. Avoid foods with added salt, sugar or oils.



Whole Grains:

The tradition of baby's first food being a single-grain cereal, such as white rice cereal, is changing. Just as we recommend whole grains for older kids and adults, whole grains are a much healthier choice for babies. Look for brown rice cereal instead of white rice cereal, and include other whole grains, such as oatmeal, barley, corn

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and quinoa. There is no demonstrated benefit of rice over other grains, and there are growing concerns about the arsenic contamination of rice. We recommend limiting infant rice intake to no more than one serving per day.

Whole grains should be well cooked and may need to be pureed for young babies who are still learning to handle new textures.

*UDLQV PDNH JRRG UVW IRRGV IRU VHYHUDO reasons: they are calorie-dense and provide needed energy, they have a very low risk of allergy and they are a good source of iron.

Around four months, a baby's natural iron stores start to deplete, so iron-rich foods are good idea. But cereals are not the only place to get iron — beans and leafy green vegetables are also very good sources. Be sure to include these iron-rich foods as some of your baby's first foods.

As baby learns to eat finger foods, whole grain breads and pastas can be offered in small pieces, and those pieces make a great vehicle for dips and sauces. As your toddler starts to practice with utensils and wants to feed himself, he will love to scoop well-cooked whole grains right from the bowl.

A note about starches:

There is some skepticism about the appropriateness of whole grains for infants. Studies have shown that infants' guts have low levels of amylase, which is an enzyme that helps break down, digest and process carbohydrates. This is why some authors have concluded that babies therefore may not be able to digest starches. This worry is unfounded. Babies around the world are given grains and starchy vegetables as first foods with no evidence of indigestion or malabsorption. Whether it's millet in Tanzania or rice in Brazil — infants have been digesting and thriving on starches and grains for millennia. Babies have built-in complementary systems including increased salivary amylase and high amylase activity in breast milk that allow them to capably handle dietary starch. Some starch is not digestible — it passes on to the large intestine and plays an important role in feeding our healthy gut bacteria. Plant-based kids (and adults) are known to have much healthier gut flora than those who eat animal products.



Vegetables:

Vegetables make great first foods and are recommended for all babies early on. They can be offered pureed as single-ingredient first foods and later combined together or with grains in thicker mashes. Overcooked vegetables make excellent finger foods when baby is ready. Older children love crunchy, bright-colored raw veggies, especially as dippers — use them to scoop a hummus or tahini sauce. Offer your baby a wide variety of all types of vegetables. The more they are exposed to early on, the more they will like later! Remember every bite of vegetables is building a healthier body.

A note about leafy greens and nitrates:

Leafy greens, such as kale and spinach, are an important part of your infant's diet. They are nutrient rich and contain needed iron, zinc and calcium. In the beginning, greens will need to be cooked and pureed and can be offered alone or in combination with other veggies, grains or starches. Consider offering baby green smoothies as a fun and tasty way to include greens. Some authors have raised concerns about high nitrate levels in some vegetables. Although nitrates are high in some plant foods and can be dangerous for infants who are less than three months old, these nitrates from plants pose no harm to older infants or children. Those foods high in nitrates, such as spinach, carrots, squash, beets and green beans, can safely be included as part of a healthy diet starting at the recommended age of four to six months.



Fruits

Babies are born with an innate preference for sweet flavors, and most parents have no trouble getting their little ones to eat fruit. In fact, the challenge is sometimes to get them to eat something other than fruit! Research suggests that the order of introduction does not change food preference. It's fine to offer fruits right from the start, just be sure to include more challenging and bitter flavors early on as well. Harder fruits will need to be cooked and/or pureed in the beginning. Softer fruits, such as banana, can be offered as finger foods early on.



Beans, Peas and Lentils:

All types of beans are safe for baby to eat, but some may be harder to digest, and some babies may get gassy — just like their parents! In the early months, beans can be pureed into a smooth texture. Thin them as needed by adding water, breast milk or formula. Well-cooked beans make great finger foods for babies learning to feed themselves. Some harder beans, such as garbanzo beans, may still need to be mashed or overcooked. Some, like fava beans, may need to be removed from their tough outer coating. Soaking beans over-night and rinsing them several times can cut down on gas production. Cooking beans with kombu or Wakame, fennel, ginger or turmeric makes them more digestible. Mung beans and adzuki are the most easily digestible of the beans and can be a good choice for young children.



Nuts and Seeds:

Nuts and seeds are extremely health promoting and offer an excellent source of healthy fats for growing kids. However, whole nuts and seeds are a choking hazard and should not be offered to children less than three to four years old. These nutritious foods can easily be included in the diets of younger children ages 4-6 months in the form of creamy butters or by being blended into sauces, dips and smoothies. We know that early exposure to allergenic foods such as peanuts can help reduce food allergy later on. Be sure to include peanuts and other nuts as part of your baby's first foods. Small amounts of peanut butter can be added to any pureed baby food. Later on, a thin smear of nut butter can be used as a spread on crackers, breads, fruits or vegetables.



Herbs and Spices:

In the beginning, give your baby a chance to learn and appreciate plant foods as they are without added flavoring. We want him to learn what whole broccoli looks, feels, smells and tastes like. However, it can also be fun, safe and beneficial for baby to learn to appreciate more complex flavors. Play around with different seasonings and see what he likes. All the herbs and spices are safe and healthful to give baby. Just be sure to avoid added salt or sugar.

Breastfeeding, Weaning and Milk Alternatives

The American Academy of Pediatrics (AAP) recommends continuing to breastfeed until a baby is at least one year old. The World Health Organization (WHO) recommends at least two years and suggests that the natural age of weaning may be between 2 1/2 to 7 years old for humans! Research clearly shows benefits to breastfeeding until at least two years old. The gut is still developing and the immune protection from breast milk is significant. It's also nature's perfect source for that "extra" fat kids under two years old need, and it provides a "safety net" of numerous nutrients, including vitamin B12. We recommend a goal of breastfeeding until age two and longer if mom and baby desire.

In the first year of life, breast milk composition is roughly:

- 5% protein
- 60% carbohydrates
- 35% fat

In the second year of life, 15 oz. of breast milk provides:

- 29% of energy requirements
- 43% of protein requirements
- 36% of calcium requirements
- 75% of vitamin A requirements
- 76% of folate requirements
- 94% of vitamin B12 requirements
- 60% of vitamin C requirements

If it's necessary to wean off breast milk prior to one year of age, you will need to substitute another milk or formula. Donated human breast milk is increasingly becoming an option for mothers who are not able to breastfeed. Many large cities have milk banks where the donated milk is screened and pasteurized, and it's quite safe. A reliable milk donor is certainly a better option than formula.

If formula is needed, we recommend an organic, non-GMO, soy-based formula. There are experts who recommend a hypoallergenic cow's milk formula, but some studies have found that soy formula actually causes less of an immune response than hydrolyzed cow's milk formulas, and soy formula has other advantages as

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well. Others have raised concern about the aluminum content of soy formulas. It's true that the aluminum intake of infants using soy formula is significantly higher than those who are breastfed or on cow's milk formula. However, among babies using soy formula, the level of aluminum intake is still only about 25% of the upper tolerable level established by the Food and Agriculture Organization of the United Nations. The American Academy of Pediatrics agrees that soy formulas are safe for full term infants, but not premature babies. The well-established toxicity of early exposure to cow milk proteins is certainly a far greater concern.

Of note, it's important to use soy formula and not soy milk, which is intended for older children and adults. Infants have unique nutritional needs that infant formulas are specifically designed to meet.

If weaning occurs after one year, no formula is needed and there is no need to wean to any other milk, especially cow's milk. The most natural course of events would be to wean from mother's milk sometime after two years of age, at which point the main beverage can be water. There is no need to substitute a non-dairy milk.

Plant-based milks are certainly fine to include in your child's diet after one year, and they can be an easy way to ensure adequate calories, calcium, vitamin D and iron (if fortified) — but adding plant-based milks isn't necessary.

Choosing a plant-based milk:

Plant-based milks vary widely in their nutrient composition and taste. There is no one right answer — your choice will depend on your taste preference, particular nutritional concerns and how you plan to use it. If you are weaning your infant at one year, consider using soy milk for its higher fat content and more complete nutrition. If you or your child already consume soy products (tofu, tempeh, miso) regularly, consider hemp milk instead. If you are trying to limit calories, an almond milk may be more appropriate. We don't recommend coconut milk due to its high levels of saturated fat, and rice milk should be avoided because of potentially high arsenic levels and low nutritional value. Whichever type of milk you choose, look for milks that are minimally processed, made with whole



plant ingredients and no added sweeteners or oil. It may be helpful to use a fortified milk, especially for young children.

Soy: the most nutrient-rich option, highest in protein; protective health benefits from phytoestrogens (see page 31); smooth and creamy

Hemp: higher in fat and calories, great source of omega-3s; lower protein than soy but higher than others; nutty flavor, smooth and creamy

Ripple: the newest option; made from pea protein isolate, which is more processed; added oil; similar to soy milk in protein and calories, rich and creamy

Almond: watery, lower in protein, fat and calories; natural source of calcium; higher oxalate levels, which can cause kidney stones with high consumption

Coconut: essential diluted coconut fat, which is high in saturated fat with little nutritional value; smooth and creamy and naturally sweeter; use in small portions

Oat: middle-of-the-road in terms of carbohydrate and protein levels; contains soluble fiber which is good for your cholesterol

Rice: little nutritional value; potentially high arsenic contamination; not recommended for young children

Comparing Human Milk and Baby Formulas (per cup)

	Human Milk	Soy Formula (ProSobee)	Cow's Milk Formula (Enfamil)
Calories	176	160	160
Protein (g)	2.4	4.8	3.2
Fat (g)	11.2	8.8	8.8
Saturated fat (g)	4.8	4.0	4.0
Monounsaturated fat (g)	4.0	1.6	1.6
Polyunsaturated fat (g)	1.6	2.4	2.4
Carbohydrate (g)	16.8	16.0	16.8
Folic Acid (mcg)	16	24	24
Vitamin C (mg)	16	16	16
Sodium (mg)	40	56	40
Iron (mg)	0.08	3.0	0.24
Calcium (mg)	80	152	112



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6. The Big Dairy Question

Dairy intake recommendations can be particularly confusing when it comes to our kids.

Unfortunately, most pediatricians and the American Academy of Pediatrics still recommend that children drink two to three cups of cow's milk each day starting at the age of one and that kids from one to two years old drink whole cow's milk. Did you know that three glasses of whole cow's milk contain as much saturated fat as about 25 slices of bacon?! Research would tell us that isn't good for our kids.

Yet we are taught from a very young age that cow's milk is not only good for us (it does a body good and builds a strong body, right?) but also that it is a necessary part of a child's diet. In fact, many parents worry their kids aren't getting enough milk.

There is a profound and powerful marketing and lobbying effort to promote dairy to American consumers and children in particular. The dairy industry spent more than $6.4 million lobbying in 2016. Combine this with a wholesome sounding marketing campaign like, "got milk?" and the industry has convinced Americans that this unusual practice promotes health. This couldn't be further from the truth.

Drinking cow's milk is not normal, and it is certainly not necessary.

Humans are the only mammal on earth that drinks another species' breast milk and the only mammal that consumes any milk after the natural age of weaning. A mammal's milk is meant for one thing — to nourish and quickly grow its offspring. In the case of cow's milk, this means growing a calf from 60 pounds to 600 pounds in less than two years!



As we reviewed in the original quick start guide, dairy is strongly linked to many chronic diseases that are common in western societies, including heart disease, many types of cancer, inflammatory bowel diseases, acne, diabetes, premature death, migraines, bone fractures and obesity. While most of these diseases are not symptomatic until adulthood, they have their beginnings in childhood. Avoiding dairy products in childhood can go a long ways toward preventing the diseases of adulthood.

Dairy is also linked to many diseases more familiar to pediatricians, including childhood obesity, constipation, asthma, eczema, upper respiratory tract infections, (Type 1) diabetes, early puberty, infant possibly even crib death (SIDS).

Let's take a look at what is actually in milk:

Carbohydrate: the sugar in milk is lactose. Up to 85% of the world's population is lactose intolerant — we were not meant to consume lactose after the age of weaning.

Fat: much of the fat in cow's milk is saturated fat, which is directly linked to high cholesterol and heart disease.

Protein: the protein in cow's milk is called casein and it's linked to many chronic diseases, including many types of cancer.

Hormones: the reproductive hormones from a 600+ pound pregnant cow are our #1 source of exogenous hormone exposure. These high levels of estrogen and progesterone are what links dairy to acne and other hormonally-controlled diseases, such as breast and ovarian cancer, PCOS and early puberty. These hormones cannot be avoided by buying organic milk.

Growth hormones: natural and artificial added

Pesticides and other chemicals

Antibiotics

Addiction

Why is it so hard to kick the dairy habit? Giving up dairy can feel especially difficult (for you and your kids!) because it may be literally addictive. Dairy contains a combination of sugar, fat, salt and casomorphins, which are substances that trigger the same "feel good" sensations as opiate drugs. Casomorphins are also the reason for the constipation that's associated with dairy and they're the reason dairy has a possible link to sudden infant death syndrome. The addictive quality of dairy is likely nature's way of ensuring that baby mammals become attached to their source of nourishment. Although the prospect of taking dairy out of your family's diet may seem daunting, your taste buds will adjust and you will eventually no longer have these cravings.

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7. Addressing Specific Micronutrients and Supplements

Multivitamin?

Many parents ask if their child should take a multivitamin. Children are more vulnerable to dietary deficiencies than adults, but more research is needed regarding definitive supplement recommendations. In general, it's always best to get our nutrients from whole foods rather than supplements. Multivitamins have not been shown to be useful in the prevention of deaths from cancer, heart disease or all-cause mortality in adults. However, if your child is a particularly picky eater or you are working on transitioning to a plant-based diet, a multivitamin may be reasonable. It may be an efficient way to deliver a combination of nutrients during a time of rapid growth and development. Many vegan multivitamin and mineral supplements are available for kids and can provide them with some of the nutrients we will discuss below, including vitamins B12 and D as well as calcium and zinc. If you prefer vegan supplements, look for the words "vegan" or "vegetable source" on the label. Ingredients such as stearate, lanolin, or gelatin are animal-derived.

Calcium

Plant-based foods are excellent vehicles for delivering calcium to our bodies. Beans and greens are rich in calcium and, unlike dairy, come packaged with countless other vitamins, minerals and phytonutrients that benefit health and improve calcium absorption and utilization. Calcium is a mineral found in the soil, which is why plants (grown in the soil) are excellent sources of calcium. Cows eat calcium-containing plants, which is why their milk contains calcium. Let's remove the cow (and therefore the cholesterol) and just eat the plants!

Breast milk is the best calcium source for at least the first 12 months. After one year, consider adding

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a fortified organic soy milk. Some other kid-friendly favorites include tofu, almond butter, tahini or navy beans. One cup of tofu alone would meet the daily calcium requirements of a preschooler!

Daily calcium requirements

(Note: these are rough estimates, and many experts think our calcium recommendations are too high!)

Age	Quantity
0 to 6 months	200 mg
7 to 12 months	260 mg
1 to 3 years	700 mg
4 to 8 years	1000 mg
9 to 13 years	1300 mg
14 to 18 years	1300 mg*

**including pregnancy and lactation*

Growing strong and healthy bones

More than 90% of our total lifetime bone mass is laid down by the time we are 20 years old! Building strong bones in childhood sets us up for healthy bones for life. Interestingly, studies have not shown a strong link between how much calcium we eat and how strong our bones are. There is certainly no benefit to bone health from consuming dairy products. In fact, populations who drink the most milk have been shown to have the worst bone health.

So, how do we get strong, healthy bones?

- Play! Kids need three hours of physical activity every day, and physical activity is the best way to build strong bones.
- Minimize added salt, which is commonly found in packaged, processed and restaurant foods.
- Eat calcium-rich plant foods, such as beans, greens and soy, every day.
- Sunshine! Adequate vitamin D aids in calcium absorption.
- Avoid excessive protein intake by eating a whole food, plant-based diet. Your body uses calcium to process protein. So as protein intake increases, more calcium is pulled from the body and lost through urine.
- Eat fruits and vegetables. They have an acid-reducing effect on the blood, which also promotes bone health.

Plant-Based Calcium Sources

Food	Amount	Calcium (mg)
Collard greens, cooked	1 cup	357
Other plant milks, fortified	8 ounces	300–500
Tofu, processed with calcium sulfate*	4 ounces	200–420
Fortified orange juice	8 ounces	350
Soy or ricemilk, commercial, calcium-fortified	8 ounces	200–300
Commercial soy yogurt, plain	6 ounces	300
Turnip greens, cooked	1 cup	249
Tofu, processed with nigari*	4 ounces	130–400
Tempeh	1 cup	184
Kale, cooked	1 cup	179
Soybeans, cooked	1 cup	175
Bok choy, cooked	1 cup	158
Mustard greens, cooked	1 cup	152
Okra, cooked	1 cup	135
Tahini	2 Tbsp	128
Navy beans, cooked	1 cup	126
Almond butter	2 Tbsp	111
Almonds, whole	¼ cup	94
Broccoli, cooked	1 cup	62



Vitamin B12

Anyone on a strictly plant-based diet needs a reliable source of B12. Deficiencies in B12, while rare, can lead to irreversible neurological damage, anemia, developmental regression and feeding difficulties. Infants and young children are especially at risk. B12 does exist in some plant foods, including fortified cereals, plant-based milks and fortified nutritional yeast. However, most experts agree that the most reliable way to ensure adequate B12 intake is to take a supplement.

If a nursing mother is appropriately taking a B12 supplement, her baby will get adequate amounts through the breast milk. If there is any doubt regarding the adequacy of the mother's B12 status, it's best to supplement the infant. Once a baby stops getting a large portion of calories from breast milk (usually around 9 to 12 months), we recommend starting him on a B12 supplement. Both methylcobalamin and cyanocobalamin are forms of B12 that have been shown to increase blood levels of B12. Either is fine to use.

Note that we need very small amounts of B12 each day (0.5-3mcg). However, it's difficult to find commercially available supplements under 100 mcg. Even doses in the 100–500 mcg range are rare. Fortunately, no adverse effects have been associated with excess B12 intake from food or supplements in healthy individuals. There are many kid-friendly B12 supplement options including sprays, liquids and chewable tablets. Another reasonable option would be to give a daily children's multivitamin that includes B12.

Age-specific B12 recommendations, roughly adapted from the Institute of Medicine, are as follows*:

Age	RDA
0 to 12 months	0.5 mcg
1 to 3 years	1 mcg
4 to 13 years	1.2 mcg
14+ years	2.5 mcg
pregnancy/lactation	2.8 mcg

Vitamin B12 Supplement Dosing

0 to 12 months	none needed (baby will get enough from breast milk or formula)
1 to 15 years	50mcg daily or 500mcg weekly
15 to 65 years	100mcg daily or 1,000mcg weekly
65+ years	500mcg daily

Example: There is an organic B12 spray that contains 500mcg per dose. Mom and Dad take 1 spray every day and their two young children take 1 spray weekly.

Vitamin D

Vitamin D deficiency in children can cause growth delay and rickets. In addition to promoting bone health in both children and adults, there is some research to suggest a protective role of vitamin D in the prevention of certain cancers, cardiovascular disease, diabetes, multiple sclerosis, muscle and joint disease and in reducing inflammation and modulating immune function.

Vitamin D is actually not a vitamin at all and is unrelated to diet. It's a hormone that our body makes from the sun.

Sunshine is the best way to get vitamin D.

It only exists in animal foods (mainly dairy products) because it is artificially added. So everyone, regardless of what they eat, needs to make some effort to get enough vitamin D. Unfortunately, modern lifestyles can make it difficult for anyone, including kids, to get enough vitamin D. We live in a culture where most work and leisure time is spent indoors. Combine that with the regular use of sunscreen and it's hard for people to get the amount of sun exposure that's needed for adequate vitamin D synthesis.

For most of us, adequate sun exposure would entail about 20 to 30 minutes (or a quarter of the time needed for you to get a sunburn) of midday sun each day with arms exposed and no sunscreen on. People who live farther from the equator, have darker skin or are obese will

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need longer exposure. If you are unable to get adequate sun exposure, we recommend taking a daily vitamin D supplement. Children less than one year old should minimize direct sun exposure due to their more sensitive skin, and so they should also supplement.
Fatty foods like avocados and nuts can help increase vitamin D absorption by about 40%. Vitamin D only stays in our bloodstream for 24 to 48 hours, so we need to make it or take it on a daily basis.

RDA of Vitamin D is listed below.

Age	RDA
0 to 12 months	400 IU
1 to 18 years	600 IU*

**including pregnancy and lactation*

Omega-3 Fatty Acids

Eicospentenoic Acid (EPA) and Docosahexananoic Acid (DHA) are long-chain omega-3 fatty acids that we know are essential to the human diet. Our bodies cannot make them, therefore we must take them in through our food. These fatty acids play an important role in the formation of cell membranes, the transport and oxidation of cholesterol and specialized hormone production. They are also vital for the normal development of the fetal brain and retina. ALA (alpha-linolenic acid) is an essential fatty acid that is converted into DHA and EPA by the body. ALA can be found in vegetarian foods including flaxseeds, flaxseed oil, walnuts, soybeans, chia seeds, hemp seeds and others. With some planning, it's possible to consume enough ALA on a whole food, plant-based diet to make adequate amounts of EPA and DHA.



Whole plant foods also contain the ideal ratio of omega-3 to omega 6 fatty acids, which may be even more important than the absolute amount of omega-3's that we eat. It is unclear whether those on a whole food, plant-based diet would benefit from omega-3 supplementation, and expert recommendations differ. If you or your child are not consuming foods high in omega-3s or if you are pregnant or breastfeeding, you may benefit from an omega-3 supplement. Consider a daily supplement with EPA and DHA derived from yeast or algal oil (an oil derived from algae) rather than fish oil in order to avoid the pollutants and toxins that concentrate in fish.

The optimal dose of Omega-3 Fatty Acids is not known but the World Health Organization (WHO) recommends:

Age	Daily Dose	Twice Weekly Dose
2 to 4 years old	100 – 150 mg	350 – 525 mg
4 to 6 years old	150 – 200 mg	525 – 700 mg
6 to 10 years old	200 – 250 mg	700 – 875 mg
10 years +	250 mg	875 mg

Iron

Iron is an important mineral that plays a key role in the transport and storage of oxygen. It is vital to normal growth, development and cognitive function. Iron deficiency is the most common nutrient deficiency worldwide, and infants and young children are at particular risk. Iron deficiency can contribute to developmental delays, behavioral problems, fatigue, decreased attention span, learning difficulties, anemia, and in some cases irreversible cognitive abnormalities. Even with recommended universal screening, the prevalence of iron deficiency anemia in toddlers remains at 3 to 7%. Despite common concerns that plant-based diets don't provide enough iron, vegans and vegetarians have been shown to have similar rates of iron deficiency as omnivores.

Children following a whole food, plant-based diet should take care, just as any child should, to include iron-rich foods in their diet. However, plant-based kids enjoy a huge advantage — a diet free from dairy. Dairy is one of the biggest factors contributing to iron deficiency in three ways: First, it's very low in iron and often replaces calories from healthier foods. Second, it interferes with the body's ability to absorb iron from other foods. Third, it can cause microhemorrhage in the gut, leading to iron loss.



Iron requirements in the first two years

0 to 4 months

Full term infants have built up adequate iron stores during pregnancy.

Preterm infants may be deficient and usually need to be supplemented.

4 to 6 months

Breast milk no longer supplies adequate iron. Infants should start iron-rich complementary foods. Or, if they're not ready for food, they should start an iron supplement.

6 to 24 months

Iron requirements are high. Ensure that children are eating iron-rich foods daily. Consider supplementing if not.

Ways to increase iron in your diet:

- Eat iron-rich foods: leafy green vegetables, beans, seeds, sprouted grains, lentils and fortified foods.
- Pair iron-rich foods with vitamin C-rich foods to enhance absorption (up to 5 times!): citrus, tomatoes, berries, bell pepper, cabbage, cauliflower, broccoli, potato and spinach.
- Soak sprouted grains, beans and seeds before cooking to reduce levels of phytate, a compound in grains that may hinder iron absorption.

Risk factors for iron deficiency:

- History of premature birth or low birth weight
- Feeding problems or poor growth in infancy
- Exposure to lead
- Exclusive breastfeeding beyond four months of age without supplemental iron
- Weaning to first foods that do not include iron-rich or fortified foods
- Weaning to cow milk
- Inadequate iron intake

The American Academy of Pediatrics recommends that all children, regardless of their diet, be screened for iron deficiency anemia at age one. If your child has any additional risk factors, further testing may be warranted. Simply following a plant-based diet does not warrant any additional testing.

RDA for Iron from Institute of Medicine

Age in years	Iron mg
6 to 12 months	11
1 to 3	7
4 to 8	10
9 to 13	8
14 to 18	11 (males), 15 (females)
19 to 50	8 (males), 18 (females)
Pregnancy	27
Lactation	10

Sample iron-rich meals for your toddler

- Tofu scramble with bell peppers and strawberries on the side
- Whole wheat pasta with white beans and tomato sauce served with melon cubes
- Pinto beans and quinoa served with pico de gallo, avocado slices and mango
- Baked tofu, sweet potato sticks and broccoli florets served with orange slices
- Sweet potato and black bean "quesadilla" topped with cabbage slaw and peaches

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Plant-Based Iron Sources

Food (1/2 cup)	Iron (mg)
Sesame seeds	10.5
Dark chocolate (3oz)	10
)RUWL HG LQIDQW FHUHDO	9.5
Blackstrap molasses	8
)RUWL HG RDWPHDO	5.8
White bean, soybeans	4.1
Lentils, tofu	3.5
Spinach	3.2
Dried peaches, prunes, apricots	3
Kidney beans	2.6
Chickpeas, amaranth, black eyed peas	
Swiss chard	2.0
Black beans, pinto beans	1.8
Quinoa, sweet potato	1.4
Green peas	1.2
Pumpkin seeds	1.0
Kale, broccoli, potato	0.6

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8. Commonly Asked Questions

Does a whole food, plant-based diet affect the growth, development and puberty of children?

Kids raised on wholesome, plant-based foods grow up to be leaner and healthier adults than their omnivorous friends. They even live longer! There are some notable, beneficial differences in the growth patterns of plant-based kids, particularly regarding puberty.

The single biggest predictor of early menarche for girls is consumption of animal protein at a young age. Kids eating a plant-based diet don't have that exposure to meat and dairy products, and they tend to go through puberty at a later age than their peers. That means they may have slower growth during adolescence with a later growth spurt. However, research shows that kids eating a plant-based diet continue growing for longer and actually attain the same or greater adult height. Later puberty confers many other benefits, including lower risks of many cancers later in life (especially breast and prostate cancer), as well as less heart disease and a longer lifespan.

Kids eating plant-based diets have also been shown to have an equal or higher adult IQ. There are D PXOWLWXGH RI FRJQLWLRQ NLGV FRQVXPLQJ D GLHW unprocessed whole, plant foods.

For example, there's a proven association between artificial food coloring and attention and behavior problems in kids. A diet focusing on unprocessed, plant-based foods completely eliminates this risk!

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What about protein?

This is undoubtedly the first question you will get from concerned family and friends, especially when it comes to plant-based eating during pregnancy or for young children. Rest assured, protein requirements can easily be met by anyone following a plant-based diet, at any stage of life. In fact, studies have shown that the average vegetarian or vegan meets or exceeds the recommended daily protein intake of 0.8 g/kg of bodyweight for an adult. Protein needs for kids are slightly higher, peaking at about 1.2 g/kg for rapid growth periods during the toddler years and again around puberty. A very active teenage athlete may need up to 1.5 g/kg. During pregnancy and lactation, women only need slightly more protein, about 1.1 g/kg. Be sure to include high-protein plant foods every day.

Comparison of protein content. All of the following have about 7g of protein:

Food	Amount	Protein (g)
Lean Meat	1 oz.	7g
Mozzarella Cheese	1 oz.	7g
Cooked Beans or Lentils	½ cup	7g
Cooked Soybeans	⅓ cup	7g
Peanut Butter	2 Tbsp.	7g
Cashews or Sesame Seeds	¼ cup	7g
Almonds	1/3 cup	7g
Soy Milk	8 oz.	7g
Tofu	3 oz.	7g
Flaxseed	2 Tbsp.	7g
Hemp Seeds	4 tsp.	7g
Nutritional Yeast	1 Tbsp.	7g
Whole Grain Bread	2 slices	7g
Cooked Quinoa, Spelt, Teff	⅔ cup	7g
Cooked Oats	1 cup	7g
Cooked Chopped Vegetables *(Broccoli, Spinach, Asparagus, Artichokes, Potatoes, Sweet Potatoes, Brussels Sprouts)*	1 ¼ cup	7g



Are soy products safe for kids?

Yes. Soy is a healthy part of a plant-based diet for adults and kids. The worries about soy are unfounded. Early studies in rats suggested a link between phytoestrogens in soy and cancer, but this did not hold true in humans. In fact, in human studies, soy has been found to be protective toward reproductive health. Soy consumption is linked to later age of menarche, lower rates of breast cancer, earlier menopause and far fewer menopausal symptoms. There is also no evidence that soy causes feminization in boys. The populations who eat the most soy are some of the healthiest in the world! Of note, the health benefits of soy only hold true for unprocessed soybeans or minimally processed soy foods such as tofu, tempeh, miso or soy milk. Try to minimize highly processed soy products, such as soy protein concentrate or texturized vegetable protein frequently found in processed vegan products and meat alternatives.

Could a "restrictive" plant-based diet increase the risk for disordered eating or and eating disorder in my teenager?

No. Vegan and vegetarian kids are at no greater risk o f eating disorders than kids following any other type of diet. Families who have been following a plant-based diet for a while will tell you that it does not feel restrictive. At home, offer your kids a wide variety of whole, plant-based foods and focus on the positive aspects of the food. Create a culture at home of enjoyment, freedom, and abundance around food

and nutrition. Remove all of the junk foods from your home and you will avoid any arguments over the enticing unhealthy foods. When you're away from home, don't stress about the cupcake at the birthday party or even the slice of pizza at the fair. Emphasize the "dos" and not the "don'ts." The Academy of Nutrition and Dietetics (AND) addressed this concern in their 2016 position paper on vegetarian and vegan diets:

> *"Eating disorders have a complex etiology and prior use of a vegetarian or vegan diet does not appear to increase the risk of an eating disorder, though some with pre-existing disordered eating may choose these diets to aid in their limitation of food intake."*

However, the AND also notes that "...some with pre-existing disordered eating may choose these diets to aid in their limitation of food intake." So, if you notice your child make a dramatic shift in their eating patterns, especially if the changes seem very restrictive or you think they are using healthy eating as a guise to eat less, please talk to their doctor. These can be symptoms of a eating disorder.

Do kids following a plant-based diet need any special laboratory tests?

No. In general, children following a plant-based diet do not require any additional testing beyond the routine screening tests recommended for all children by the after Academy of Nutrition and Dietetics.. However, it's best to consult with your healthcare provider to see if your child has risk factors or symptoms that would suggest a nutrient deficiency. Most nutrients, such as vitamin B12, vitamin D and iron, can be evaluated with simple blood tests.



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9. Raising Healthy Eaters, Common Myths and Sample Menus

For many people, making personal changes for their families and moving towards a plant-based diet can seem overwhelming. With picky eaters, demanding schedules and varying tastes, it's easy to see why many families struggle to get nutritious meals on the table. Transitioning to a plant-based diet and getting your family on board (especially if you've got older children with well-developed likes and dislikes!) can be challenging. But it is doable, and it is worthwhile.

The most important thing to remember at any age is that we teach our children about nutrition, not from lecturing or bribing, but by serving and enjoying the foods we want them to eat.

Tips for Raising Healthy Eaters (from pediatrician moms and dads)

Control when you can and let go when you can't

Keep only whole, plant-based foods in the house, and eat at home often. Don't purchase or bring into the home foods that you do not want your children to eat. Every person in the household should have the same food choices. The majority of meals should be eaten at home, or prepared at home and packed, including school lunches. If 90% of what your kids are eating is coming from home, don't stress when they occasionally make different choices at restaurants, parties or friends' houses.

Division of responsibility

Caregivers are responsible for deciding the what, when and where of meals. You decide what food choices are





offered. Establish a routine. Children thrive on schedules and find comfort in predictability.

Children are responsible for deciding which of the foods offered they are going to eat and how much. You can't force them to eat, and you can't let them decide what goes on the table. Children's appetites naturally vary, and they are quite good at managing their own caloric intake—typically better than we are! They will not starve themselves! When you get resistance, remember the six magic words: "You don't have to eat it."

Just one meal

Don't be a short-order cook. Prepare one meal for the whole family, with small accommodations as needed (spice level, food allergies, size of bites, etc.). If you start making something different for everyone at the table, this will become your reality on a daily basis. And that's just exhausting.

Model good behavior

You, as parents, must eat the way you want your kids to eat. Don't expect your children to do something differently. The first step to getting your kids to change their eating is to change your own.

Make family meals a priority

Whenever you can, eat with your children instead of feeding them. It will make mealtimes more enjoyable and pleasant. Mealtimes are not just about getting your kids to eat—they're about family time, building community and being mindful and thankful for our food.

Minimize distractions

Mealtimes should be free of ALL screens, including phones, tablets and computers.

Involve the kids

Include your children in meal planning, shopping and cooking from a young age. Kids are much more likely to eat what they have helped prepare.

Don't assign value to foods

As long as you only have "parent approved" whole, plant-based foods in your house, there is no need for any food to be labeled "good" or "bad." Try not use any foods as rewards or punishments. And avoid the trap of "you can only have more of this when you've eaten all of that." Keep "special" foods for holidays or the occasional outside-the-home trip, but don't use them as a prize "once you've eaten your vegetables."

Educate

Every meal is an educational opportunity! Talk to your kids from an early age about the importance of healthful eating. Talk about where food comes from and how it makes it's way to your table. Be upfront (as age appropriate) about why you are choosing plant-based foods for your family. You can talk about the health benefits, the environmental impact and animal welfare.

Use food to learn colors, shapes, letters and numbers. The more kids are exposed to a food, in any form, the more comfortable they will be with it and the more likely they will be to eat that food.

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Offer choice

Young kids love having some control over their environment. Providing two options (e.g., "Would you like apple or pear for snack?"), without attachment to either one, allows them independence and builds self confidence while maintaining parental responsibility for food choices. Be careful not to present too many options or ask open-ended questions, such as "what would you like for snack?" This can lead to trouble. Never ask a question if you aren't prepared to accept the answer.

Make the time

Americans spend less time on meal prep (only 30 minutes a day!) and eating than almost any other Western country. Yet increased time spent cooking is associated with lower food costs, healthier diets and improved mental health. Time in the kitchen is not time wasted. It is invested and can provide positive, quality family time, meditative time, screen-free time, learning and teaching time and more. Enjoy it.

Invite instead of impose

Nobody likes to be told what to do. If you've made some personal changes that you are excited to share with your family, don't be surprised if not everyone is on board right away. The first step may be simply exposure, so include a new vegetable or simple salad at each meal. And be the example — you'll pique their interest when they notice you enjoying your foods and getting healthier.

Don't be sneaky

Nobody likes to be tricked. Those few leaves of kale covertly mixed into their morning smoothing could backfire. If little ones detect bitterness or a less-sweet version of their favorite smoothie, they may learn to distrust your offerings. A different approach could be: "I've added a secret ingredient can you figure out what is?" Then tell them why you added the kale so they can begin to understand the benefits to their body. Or let them throw in as many leaves of spinach that they'd like and gradually work your way up.

Be a good listener

If your child really dislikes something, be willing to hear them out and offer a reasonable substitute. This does not mean you need to make a separate meal. But if there is an easy step you can take to make the meal more enjoyable, go for it!

Be prepared

Having ready-to-grab snacks like sliced veggies and fresh fruit can help you avoid meltdowns during



unexpected delays in mealtime, after-school hunger pains and long car rides. These healthy snacks will not ruin mealtime. In fact, you really never need to limit fresh fruit and vegetable intake.

Ask for help

If you are struggling with food issues in your household and it's having a negative impact on your child's physical health, emotional well being or your relationship with your child, it may be time to get outside help. Growth and underlying medical issues as well as concerns around disordered eating may require a consultation with your healthcare provider.

Be creative

Turning anything into a "bar," including salads, tacos, rice bowls and more. It's a great way to get kids to try new ingredients or combinations. It also gives them some control over the meal by allowing them to add which and how much of each ingredient. Don't be afraid to turn those veggies into a smiley face or tower for your toddler!

When in doubt, pack

School lunches, potlucks and birthday parties can be tricky places to navigate potentially unknown or unhealthy food choices. Having "back up" food in your bag or car can save the day. Also consider eating before leaving the house so you're not showing up hungry to the meat-centered barbeque. Social events can center around the people and the play instead of the food.

Rely on old stand-bys

Keeping things simple can help reduce stress, especially when you're first starting out and especially during the busy work and school week. Make a list of family favorites and rotate through them. If your family loves whole-wheat pasta with veggies, go ahead and serve that twice a week! Save more elaborate or new recipes for days you have more time.

Final thought: Eat delicious plant foods, together, and with joy. Be kind to yourself and have patience.

Time-Saving Tips

Menu planning

Map out the week and shop once on the weekend. Coordinate meals that have overlapping ingredients to make the most of your ingredient cooking

Ingredient prep

Prep veggies ahead of time. Chop and wash all your veggies on the weekend, and store them in the fridge to use throughout the week in different recipes. Most will last a week in the refrigerator. Some veggies can even be cooked ahead of time to save even more time. There's no need to start from scratch every night!

Example:

Sunday: four whole eggplants are sliced, roasted and stored in the refrigerator.

Sunday night: dice the eggplant and add it to your homemade veggie pizza.

Tuesday night: dice the eggplant and add it to a Thai rice dish with peanut sauce.

Thursday night: use any remaining eggplant slices in roasted veggie sandwiches.

Batch cooking

Cook what you would normally cook, just more of it. Double, triple or even quadruple the recipe if your pots and pans are big enough! Use what you need for that meal and freeze the rest. And since you're in the kitchen and it's already a mess — cook more than one meal at a time. Batch cooking means less cleaning too.

Tip #1: leave out enough to pack leftovers for lunch the next day.

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Tip #2: freeze in small portions using muffin tins so you can take out and defrost only what you need. Next time you're crunched for time, grab it out of the freezer and you're ready to go!

This works for whole meals like soups, casseroles, chili, muffins and lasagna as well as single ingredients, including brown rice, roasted potatoes, sauces or cooked beans.

Delegate

Make meal prep a family affair. Even three-year-olds can help cut fruit or soft veggies with a butter knife or de-stem the kale and rip it into pieces.

Debunking Common Myths

Plant-based meal preparation takes more time

FALSE: Interestingly, a report by the Department of Agriculture (USDA) found that vegetarian meals took about half the time to prepare (26 minutes compared to 51) as meat-based meals!

Plant-based foods are harder to find

FALSE: Admittedly, it's easier to find fresh produce in warmer climates. But you can find healthy plant foods anywhere. Frozen fruits and veggies have nearly the same nutrient levels as their fresh counterparts, and sometimes even more! Produce can lose nutrients as it sits on the shelf, but freezing is usually done just after harvest and so it "locks in" that nutrition. Plus, frozen produce is available year-round!

Plant-based diets are more expensive

FALSE: The priciest items in the grocery stores are actually the meat, dairy and processed foods. Studies have shown that a plant-based diet can be much more affordable. And on top of the direct food savings, there is a huge potential of indirect health savings: fewer medications, doctors visits and hospital stays as well as less missed work and reduced productivity. If you add in the "hidden" costs of an animal-based diet, including environmental degradation, mistreatment of animals, antibiotic resistance and taxpayer subsidies to industrial farms, the advantage is staggering. Here are a few money-saving tips:



- Buy frozen produce — it is usually much cheaper than fresh.
- Look to the bulk section of your grocery stores to save on whole grains.
- Opt for whole dry beans instead of canned.
- Buy spices in bulk at ethnic markets.
- Invest in a membership to a wholesale warehouse store. They have increasingly good varieties of organic produce and generic brands, often at half the cost of brand names. Membership costs often pay for themselves in just one visit.
- Set yourself up with airtight containers so you can buy extra when staples are on sale.
- Join a local farm. Community supported agriculture (CSA) subscriptions are usually a much cheaper way of buying fresh produce than the grocery store and you're supporting your local farmers!

Sample Menus

6-month-old

First meal:

¼ c. iron-fortified whole grain baby cereal with 1 tsp. peanut butter
Pieces of ripe banana

Second meal:

Pureed spinach and quinoa
Pieces of well-cooked sweet potato
Pieces of raspberries

Plus Breast milk four to six times per day

1-year-old

Breakfast:

½ c. oatmeal with ground flaxseed
Kiwi and melon pieces

Lunch:

Whole wheat pasta with marinara sauce, steamed broccoli, tomato and avocado
Strawberries

Dinner:

Barley with black beans and tofu in a *Thai peanut sauce
Well-cooked green beans
Blueberries

Plus Breast milk three times per day



18-month-old

Breakfast:

½ c. oatmeal with flaxseed and blueberries
Green smoothie with frozen fruit, spinach and chia seeds

Snack:

*Homemade breakfast bar with oats, raisins, applesauce and flaxseed
Soy milk

Lunch:

Whole wheat toast with *chickpea hummus and avocado
Sweet peas
Orange slices

Snack:

Apple slices with nut butter
Soy milk

Dinner:

Quinoa with a *kale and walnut pesto sauce
Cubed pieces of well-cooked butternut squash and eggplant

Plus Breast milk two times per day

3-year-old

Breakfast:

Whole grain cereal with raisins and soy milk
*Veggie muffins with chopped walnuts, kale and carrots

Lunch:

Burrito with a whole wheat tortilla, brown rice, mushrooms, spinach, tomatoes and avocado
Apple slices

Snack:

*Baked tofu
Fresh red pepper slices
Dried apricots
Soy milk

Dinner:

Corn on the cob
Whole wheat sourdough bread with *hummus
Watermelon

** see recipes in next section*

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10.

Recipes

*Please visit **resources.plantricianproject.org** for a curated library of online resources, many of which provide delicious, health-promoting plant-based, whole food recipes. Below are a few recipes to get you started.*

Thai Peanut Sauce

¾ c. creamy peanut butter
½ c. soy milk
2 tbl. lime juice
2 tbl. liquid aminos
3 cloves garlic, minced
⅛ c. fresh cilantro
Water as needed to thin, about ¼ c.
Optional: hot sauce to taste

1. Add peanut butter and milk to a sauce pan and heat slowly, stirring until melty
2. Add all other ingredients and mix well

Kale and Walnut Pesto

1 bunch of kale, de-stemmed, chopped and washed
1 c. raw walnuts
3 cloves garlic, or to taste
2 tbl. lemon juice
3 tbl. nutritional yeast
½ tsp. salt
¼ tsp. black pepper (optional)
3 tbl. water to thin as needed

1. Combine all ingredients except water into a food processor and blend until smooth.
2. Add water, lemon juice or a plant-based milk to thin as needed.

Homemade Breakfast Bars

2 c. raw oats
2 c. applesauce
½ c. raisins
1 tbl. chia seeds
2 tsp. cinnamon
1 tsp. all spice
½ ripe banana
1 tbl. ground flax seeds
1 tbl. raw millet
½ tsp. salt

1. Preheat oven to 350 degrees
2. In a large bowl, mash the banana and mix with the applesauce
3. Add all other ingredients and mix well
4. Scoop onto a greased or lined cookie sheet and mold into any shape you want. They will not rise or expand.
5. Bake at 350 degrees for 25 minutes
6. Transfer to a wire cooling rack
7. Option: once cool, gentle place into freezer bags. They freeze really well!

Baked Tofu

1 package of firm or extra firm tofu
½ c. lemon juice
3 tbl. liquid coconut aminos
1 ½ tsp. rosemary
½ tsp. oregano
2–3 cloves of garlic

1. Slice tofu and press for at least an hour to remove water
2. Cut into cubes
3. Mix lemon juice, aminos and herbs together in a mixing bowl and add tofu cubes
4. Marinate tofu overnight, or at least for a few hours
5. Transfer tofu with all liquid onto a greased baking pan
6. Cook at 425 degrees for 30 minutes, stirring every 10 minutes



Veggie Walnut Muffins

1 ½ c. whole wheat pastry flour
1 tsp. baking soda
2 tsp. baking powder
1 tsp. salt
1 tsp. cinnamon
1/2 tsp. ground cloves
1 tsp. all spice
⅓ c. sugar
1 ½ c. unsweetened applesauce
1 tsp. vanilla
1 ½ large carrots, grated
2 c. kale, de-stemmed and washed
½ c. walnuts

1. Preheat oven to 350 degrees
2. Mix all dry ingredients (flour, spices and sugar) together in a large bowl
3. Blend carrots, walnuts and kale together in a food processor until they are all broken into tiny pieces. Do not over blend.
4. Add applesauce, vanilla and blended veggies to the dry ingredients and stir until blended.
5. Scoop into greased or lined muffin tins
6. Cook at 350 degrees for 20–25 minutes

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