

# how to feed kids the nutrient dense way



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be your best self

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# Nutrient-Density and Bioavailability

Judy Cho, NTP

We all know we should eat nutritious foods. But what is nutritious? In today's world, *almost* any food can be defined nutritious. It simply depends on how *you* view the health of that food. But not all foods are created equal. By the end of this eBook, you will know what types of food to feed yourself and your family, with a focus on your growing children.

In the nutrition space, we like to use the term "nutrient-dense" rather than "nutritious," as it is more specific.

Nutrient—density, in a nut shell, refers to foods with high concentrations of macro and micro nutrients.

Macronutrients are the proteins, fats and carbohydrates of our diet. Micronutrients are the vitamins, minerals and other trace elements of our diet. Our bodies require a mix of both to be at our best.

You can learn more about nutrient details and recommended foods to eat on my blog.

#### **WHAT'S INSIDE**

- Nutrient-Density
- Growth and Numbers
- All about Fats
- All about Carbohydrates
- Disease Awareness
- Portion Control
- Bringing it Home
- Actionable Steps
- Resources

## **NUTRIENT-DENSITY**

Nutrient density refers to foods with high concentrations of macro and micronutrients. The more nutrient-dense a food is, the more nutrient it has.

Children require approximately 35-40 different micronutrients for normal function. Maximizing nutrient density should be our primary goal when choosing foods for ourselves and our children.

#### Why?

Because deficiencies of any essential nutrients can contribute to illness, disease and developmental issues. Our bodies require essential fats and essential proteins. They are called essential because our bodies need them but cannot make them. We **need** to get these essential fats and proteins from our foods.

By the way, there are no essential carbohydrates. We do require small amounts of glucose or sugar but our bodies are able to convert proteins and fats into glucose, as needed, through a process called *gluconeogenesis*. More on this later.

As we have become more heavily reliant on processed and packaged foods, food companies have added or *fortified* vitamins and minerals into their products, knowing their food is deficient in nutrients. But some of these fortified foods can be toxic to our bodies and often times, our bodies can't *absorb* the processed nutrients. This *even includes* some of the best vitamins and supplements. That's why real, wholesome food is best. Real wholesome foods are the most bioavailable foods.

#### **BIOAVAILABILITY**

Bioavailability is the ability for your body to break down foods and absorb its nutrients.

# Growth and Numbers

In terms of growth, at about one year, a baby's diet shifts because the growth rate slows down compared to the first year.

Our children may seem like they're not eating, which may make parents feed highly palatable processed foods, but it's normal that children eat less after they turn one.

Although a child's growth slows down around two, the brain continues to grow and develop rapidly.

90% of a child's brain develops before the age of 5.

At birth, the average baby's brain is about a quarter of the size of the average adult brain. Incredibly, it doubles in size in the first year. The brain keeps growing to about 80% of adult size by age 3 and 90%—nearly full grown—by age 5.

And although the brain weighs in only about 3 pounds or 2% of total body weight, it has over 25% of the total cholesterol in the body. Put another way, the brain is about 60% fat.

It's worth repeating: 25% of ALL cholesterol in the body, is in the brain, making the brain 60% fat.

## The F Word

So let's talk about fat. For many, "fat" is the other F word. It's true. Many of us steer clear of eating fat and some of us go as far as eating only fat-free foods.

We've all been taught that fat is bad and that lowfat diets are best for heart health.

But is it? And if we eat fat, we get fat. Right?

If we dig a little deeper, our anatomy and physiology, say otherwise.

Let me explain.

The brain is the most energy-demanding organ in the body and requires fat for survival. If we recall a little bit of biology, the powerhouse of cells is the **mitochondria**. The mitochondria converts what we eat into energy. Our brains need fatsoluble vitamins and cholesterol for cognitive function, memory and proper nerve function.

Most of us fuel our brains with glucose from carbohydrates but the long-term effects of carbohydrates for energy, is damaging to our bodies. The heart also prefers fat as its desired energy source.

Yes, I know it's counter intuitive from all that we know about nutrition. If you care to know why this happened, I recommend reading Nina Teicholz's, The Big Fat Surprise.

All the cell walls in our bodies. are made up of fatty acids (fats are broken down in the body as

fatty acid + glycerol). And so the better the quality of good fats, the better the health of the cells walls to do their job: bring in nutrients, release energy and remove waste out of the cell. What comes out (energy and cell waste), can only be as good as what comes in (food).

Since every cell structure is made of fatty acids, in essence, fats control everything. If you don't have proper fats, you don't have proper cells. If you don't have proper cells, you don't have proper function.

Function starts at the *cell*ular level.

If we eat highly processed carby foods made of inflammatory oils and processed sugars, that is the best our body can work with. Is it any wonder why we get sick? How can our bodies properly function if we consistently eat a poor diet of processed, nutrient-poor foods? If you constantly put diesel in a car that requires super unleaded fuel, what do you think happens over time?

## **WHY FAT?**

Fat is the preferred fuel source by the brain, and heart. All cells require fat for proper structure and functioning.

Children need calcium because of increased bone growth and skeletal formation. They also need vitamin D to absorb the calcium. Remember, vitamin D is a fat-soluble vitamin and should be consumed with fats

Additionally, energy sources from fat do not need to be processed since fat goes directly into the mitochondria. Fat also has twice as much energy as glucose (broken down sugar). Glucose needs to be processed first in the cell before it can pass into the mitochondria.

And for a child, their brains use about double the amount of energy everyday compared to an adult's brain. This is especially true until the age of 4. So having our children rely on their body's stored energy or energy from fat, allows for more clean burning and long lasting energy.

This is why minimizing snacks and feeding times is crucial. We need to give our digestive systems a break. Our children's bodies are busy growing and the body should focus on those areas - not just on digesting foods all. day. long.



## **Not all Fats** are Created Equal

But there are different types of fat and not all fats are created equal.

Healthy good fats are essential for heart health, hormone production, healthy brain function, tissue development, appetite control and the absorption of fat-soluble vitamins (Vitamins A, D, E and K).

There are saturated fats (butter). polyunsaturated fats (salmon), monounsaturated fats (olive oil). vegetable oils (canola oil) and hydrogenated vegetable oils (aka trans fats). Trans fats are created by hydrogenating vegetable oils-this is how they become solid (margarine).

In the appendix section, you can see the horrifying steps of making canola oil. (Source: Weston Price foundation)

#### **DID YOU KNOW?**

We label foods as one type of fat but most fats are comprised of multiples fats. Olive oil is primarily a monounsaturated fat (73%) but also has saturated (14%) and polyunsaturated fat (11%).

## The Good Fats

**Saturated fats** supply the body with clean energy. and provide tremendous benefits on a low carbohydrate diet. Saturated fats can be found in coconut oil, beef, whole milk and animal fats.

Polyunsaturated fats (like omega-3s) are vital to cell membranes and for the cells to communicate with each other. Omega-3s are essential for our children's eye and brain development. Basically, it helps the cells that make up our entire body work together and be healthy.

Polyunsaturated fats are typically present in micronutrient-dense foods. Some foods high in polyunsaturated fats are salmon, seeds and walnuts.

Monounsaturated fats may improve cholesterol levels and possibly lower LDL ("bad" cholesterol). Monounsaturated fats also help and maintain cells. Monounsaturated oils go rancid with heat, light and oxygen. Choose dark glass containers and store in a dark, cool space. Monounsaturated fats can be found in nuts, avocado and olive oil.

## The Bad Fats

Vegetable oils, like canola, soybean, and corn, release toxic chemicals that are linked to cancer and disease. Vegetables oils are highly processed and cause inflammation and all modern disease has inflammation at its core. These oils wreak havoc in your body, and can damage and alter healthy cells. Vegetable oils are found in processed foods, which are typically also high in carbohydrates—a deadly combination.

Hydrogenated vegetable oils aka Trans Fats, not only raise LDL cholesterol ("bad" cholesterol), they also lower HDL ("good" cholesterol), thereby doubling the risk of heart disease. Trans fats also increase another heart disease marker called Lp(a) and can increase blood clotting and inflammation, which can increase risk of heart attack or stroke. Trans fats are common in processed foods, fast food and margarines.

Clive Champion/Getty Images

#### The Role of Saturated Fats

- Cell membranes Saturated fatty acids make up 50%
- Bones Help the body put calcium in the bones
- Heart Disease Lower Lp(a), a marker for heart disease
- Heart Function Preferred food for the heart
- Liver Protect the liver from alcohol and other toxins
- Lungs Cannot function without saturated fats
- Kidneys Cannot function without saturated fats
- Immune System Enhance immune system
- Essential Fatty Acids Work together with saturated fats
- Detoxification Supports body's detox mechanisms

# No Essential Carbohydrates

There is no dietary requirement for carbohydrates since there are no essential carbohydrates. **Essential nutrients** are defined as nutrients that must be obtained from external sources as our bodies cannot create them. As stated, there are no essential carbohydrates. **Yes, none.** 

Our bodies do need a limited amount of glucose but the body can manufacture its own sugar (via a process called *gluconeogenesis*) from fat and protein. Body fat, for example, is stored as triglyceride. If the body needs glucose (sugar), it will make the glucose from the stored body fat (glycogen).

Table sugar (sucrose) is made of two molecules, glucose and fructose. Glucose can be used by our entire body. Excess glucose is stored in the liver, muscle and then any excess, stored as fat. But fructose bypasses all of this and penetrates the liver alone. Thus fructose is only absorbed by the liver. But our liver is only about 5 pounds. And when most of our processed foods has fructose from High Fructose Corn Syrup (HFCS), we are

#### **DID YOU KNOW?**

The human body contains approximately 5 liters of blood. This amounts to 4 grams of sugar in the blood, which is less than a teaspoon of sugar.

## **DID YOU KNOW?**

90% of packaged, processed foods contains fructose or high fructose corn syrup.

overloading our liver. The excess fructose becomes fat in the liver, stays there and damages the liver. This is how we get non-alcoholic fatty liver.

Glucose can be used by the entire body and is detected by bloodwork. Fructose is not as easily detected.

And did you know majority of packaged, processed foods contains fructose or HFCS? It's in about 90% of



Two slices of whole wheat bread will raise your blood sugar higher and quicker, than 6 teaspoons of sugar. processed foods. Fructose is also the main carbohydrate in fruits. Yes. Fruits. That is why it is dangerous to feed a lot of fruit to our children **IF** they are eating other foods with high amounts of fructose. They can eventually develop fatty liver disease.

Sadly, in the US, by 15 months old, 30% of toddlers are consuming sugar sweetened beverages daily and by 18 months, 70% are having something sweet every day.

A carb-heavy breakfast may give our child's body an initial boost but it is short-lived and likely followed by a depressed period. Instead, choosing proteins and fats, will provide more sustained energy and nutrients for their learning minds and bodies.

Digestion of refined carbohydrates requires the body's own store of vitamins, minerals and enzymes for proper metabolization.

Thus, when consuming foods that have minimal nutrients, our bodies require us to take up nutrients from our own bodies to break down these carbohydrates—even lessening our net nutrient reserve.

Sugar consumption is the cause of bone loss and dental decay.

Sugar consumption causes phosphorous levels to drop and calcium to rise. Calcium rises because they are pulled from the teeth and bones. The drop in phosphorous hinders the absorption of the calcium, making it unusable and toxic.



Oatmeal is typically considered a healthy breakfast food. But It has almost 30 grams of carbohydrates per 1/2 cup. Taking fiber into consideration, it still has 24 net carbs. That's 75% of the amount of sugar in a can of soda. Eating oatmeal in the morning, starts the body on a sugary glucose rollercoaster.

Sugar consumption causes tooth decay, not only because it promotes bacterial growth in the mouth, but because it alters the internal body chemistry.

In the next section, we will take a deeper look into the dangers of excess carbohydrate consumption.

## **DID YOU KNOW?**

Fructose is the main carbohydrate in fruits. It can be harmful to feed a lot of fruit to our children, IF they are eating a lot of foods that contain fructose. They can develop fatty liver disease.

# Disease Awareness and Prevention

No one likes to talk about disease, let alone our children possibly developing disease. But disease can be prevented.

Genetics may program you for disease but your genes **do not** define the outcome. Diet and lifestyle can change the programming of those genes (epigenetics).

Guiding our children towards eating less refined carbohydrates and sugar, isn't about putting our child on a diet- it's about eating real food that is natural, delicious and rich in nutrients for their growing bodies.

Disease awareness can facilitate prevention:

Carbohydrate intolerance can take 20 years to develop. This intolerance can have negative effects on their metabolism and their health. Diseases such as Type 2 diabetes, hypertension, cancer, Alzheimer's, heart disease and hormonal issues such as infertility, are all chronic diseases.

These diseases do not happen overnight, they start developing decades before. It is critical for the future health of our children to start good nutrition and educating them about nutrition, now.

Fructose, for example naturally occurs in fruit, honey and certain vegetables. But fructose is used too often in pre-packaged, processed



foods and drinks.

Many times, the fructose is even further processed to be in the form of high fructose corn syrup.

Excess fructose (of any kinds) is associated with the following health problems: High triglycerides, liver damage, metabolic syndrome & cardiovascular disease, links to cancer, insulin resistance, high uric acid levels, gastrointestinal issues & leaky gut and mercury poisoning.

Diabetes rates have effectively tripled in the past 30 years. There are approximately 26 million people with diabetes, and 80 million with prediabetes in the US, which accounts for over one-third of the population.

## **DID YOU KNOW?**

Diabetes rates have tripled in the past 30 years. There are approximately 26 million people with diabetes, and 80 million with prediabetes, one-third of the US population. Diabetes is a disease of high blood sugar. It makes intuitive sense that the less sugar we put in our bodies— keeping in mind that starch, and other complex carbohydrates, are nothing more than chains of sugar molecules that get broken down in the body— the less likely we will develop prediabetes, and ultimately diabetes.

Leaky gut and weak gut biomes can affect development and learning, while also attributing to more serious disorders and disease. Eating nutrient-dense wholesome foods can help heal and strengthen the gut. One culprit of leaky gut is eating carbohydrates and bad oils. Reputable probiotics can help but diet should be the first defense.

Mitochondrial (energy from cells) dysfunction is linked to disorders and neurodegenerative disease, including Alzheimer's. Behavioral issues like aggression, ADHD and even autism can be attributed to nutrient deficiencies.

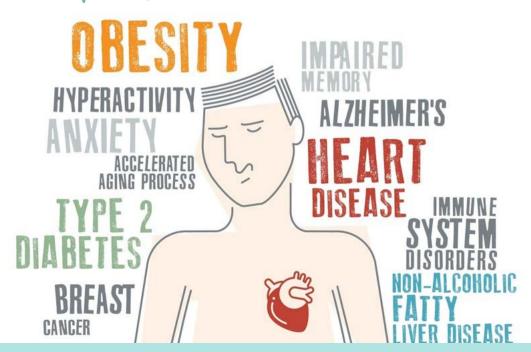
But disease can be prevented. Gene expression can be altered by lifestyle and dietary changes. There is always hope. Always.

...

So now that we know what to eat, and what to eat less of, let's talk about how much.

Long-term over-consumption of sugar weakens all the regulatory mechanisms, often leading to insulin resistance, hyperglycemia and greater risk of diabetes, fatty liver, heart disease and neurodegeneration.

## The cost of sugar's burden on the body



## **Portion Control**

Parents often stress not only about what to feed their children but also, how much. It is a common question I am asked by clients.

Now that we've discussed nutrient-density and bio-availability, we have the tools to make nutrient-dense meals.

For children, in terms of portion control, parents should determine the what, when and where of feeding. Children should decide the whether and how much of eating. This way of feeding is based on a relationship built on trust and choice. The child trusts that the parents will come through with wholesome meals and the parent trusts the child knows how much to eat.

At one year, the baby's diet shifts because the growth rate slows down compared to the first year. The child may seem like they are not eating, which may in turn make parents feed highly palatable processed foods, but it is fine if the child begins to eat less after the child turns one.

VISUAL GUIDE TO ESTIMATE
PORTION SIZE
USING YOUR HANDS



Ages 2-5: this is a period of slower growth and sometimes at this age, children can decrease their food intake. Offer children wholesome foods and avoid bribing. Slowed growth means slowed appetite. Growth slows and stabilizes with average gains of 4.5-6.5 pounds and 2.5-3.5 inches per year. Consistent growth, not appetite is how pediatricians track nutritional status and progress.

As some clients still request the dietary standards for portion control, you can find general guidelines below.

Don't get hung up on how your child eats for one day. Instead, consider food consumption over the course of the week. I recommend implementing a "food-first" strategy, instead of giving vitamins, to compensate for imperfect eating habits.

### **PORTION GUIDELINES**

Parents should determine the what, when and where of feeding. Children decide the whether and how much of eating. But as a general reference:

- 1 fingertip is 1 tsp (1 serving of butter)
- 1 thumb is 2 tbsp (1 serving of nut butters)
- 1 handful is 1 oz (1 serving of nuts)
- 1 fist is 1 cup (1 serving of fruits/veggies)
- 1 palm or a deck of cards is about 3-4 oz (1 serving of meat)

## **Bringing it Home**

"Education is the most powerful weapon you can use to change the world" — Nelson Mandela

We all know change is hard and it won't happen overnight. But every small change counts and you can implement small changes immediately.

Instead of giving your child juice, swap it for a piece of fruit. It takes 6-8 oranges to make a cup of juice. Your child can gulp down a cup of juice but your child is not going to eat 6-8 oranges in one sitting.

Instead of giving your child, low-fat foods, (because remember, low-fat usually means, more added sugars), swap for full-fat versions like whole milk and full-fat cheese (raw is preferred).

We have a *small window of opportunity* to feed our children the most nutrient-dense foods for their growing bodies. We now know to challenge low-fat diets and to feed our children foods with good fats for their brain—a brain that is 60% fat and almost fully developed by the age of 5.

The great news is that our children's bodies are resilient. We can make changes now and see the benefits in our children almost immediately.

Picture a day. Just imagine, your child comes home, the majority of their nutrient-dense lunch has been eaten, especially since you fed a high-fat, low sugar, nutrient-dense breakfast. Your child will not ask for a snack because your child's lunch will keep them satisfied until dinner.

At dinner time, they will then be hungry for more nutrient-dense foods. You can have this.

And if they do ask for a snack initially, it's likely because of simple habit.

But habits can change.

There is no better time to practice saying no with your children, then now. Give it a week or two. They'll stop asking for snacks.

## Key Takeaways

- Our children learn from our actions
   and our own diets. It is important for
   parents to instill good eating habits in
   their children and to avoid highly
   processed foods. Set a good example.
- Eat nutrient-dense foods that are the most bioavailable, in terms of nutrients.
- Fat is the body's preferred source of energy. Brain is comprised primarily of fat, especially cholesterol.
- There are no essential carbohydrates.
   Over time, running on sugar, will cause damage to our body.
- Eat more protein and good fats.
   Minimize carbohydrates and bad oils.
- Allow children to use their intuitive eating abilities.
- Minimize snacking and feeding times.
   Let their digestive systems rest. Allow their bodies to use their reserve energy and focus on proper growth.
- Remember that even with new and creative nutritional supplementation, nothing replaces a real whole-foods diet.

# Actionable Steps to Take Now

The following is a list of clients' favorite actionable steps you can take now. Some may take some time to stick but overtime, most clients have found success with these measures.

#### **CONSIDER THIS**

Sandwiches are a staple in our society. But let's leave out the bread and focus on what's on the inside. 2 slices of whole wheat bread will raise blood sugar higher and quicker, than 6 teaspoons of sugar. And remember, our bodies can only handle one tsp of sugar in our blood, at any given time. So think about the sugar high and then crash our children feel after eating just bread.

- Keep it simple. Progress not perfection.
- **Teach children** about real, whole-foods approach, healthy fats, fresh vegetables and good quality proteins.
- Feed only when hungry. Minimize snacking. Our parents did not snack all day.
- **Give more water and less juice.** Add apple cider vinegar for even better digestion.
- Trust the intuitive eating process: Don't worry too much about portions. Your child will eat the amount that is right for them.
- **Compartment lunches** are best to give low-carb, high-fat foods. Hard boiled eggs, cheese, avocados, sausage and homemade "lunchables" are good options.
- Use cupcake holders to make compartments in containers.
- Shop the perimeter of the grocery store. Buy more real, nutrient-dense foods.
- Check nutrition labels for carbohydrates, hydrogenated oils and high fructose corn syrup (HFCS). Shy away from these ingredients.
- Minimize sugary sweets and foods. Try not to have them in the house.
- Feed high quality fats and proteins. Increase omega-3s from fatty fish, avocado, grass-fed meat, eggs and sprouted nuts. In terms of nuts, macadamia nuts have the highest fat content and lower in oxalates than other nuts.
- Avoid trans fats and seed/vegetable oils. They are highly inflammatory.
- **Eggs are a super food**, especially the yolk. They are also rich in choline, which is important for brain development.
- **Best foods for mitochondrial health** (brain's energy powerhouse): Eggs, organ meat, avocado, grass-fed meats, grass-fed butters, fatty fish (like sardines and salmon), strawberries, and extra virgin olive oil.

Remember, it's progress not perfection.

## NUTRITION WITH JUDY INFOGRAPHICS

## **HEALTH BENEFITS OF RED MEAT**

Why is meat vital for optimal health?



Red meat is the **MOST** bioavailable source of iron and zinc. Red meat is also a good source of potassium, niacin, vitamin B6 and B12.



**Heart Health** 



Growth and Maintenance



Strong Bones and Teeth



Healthy Skin, Hairs and Nails



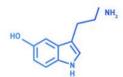
**Healthy Vision** 



Mental Function Anti-Fatigue



Immune Function Natural Antioxidants



Hormone Regulation

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## Appendix: How Canola Oil is Made

This chart portrays the production canola oil. Yes, it is bleached, deodorized, plasticized, and much more. Think twice before reaching for vegetable oils. Opt for avocado oil, coconut oil and animal fats instead.

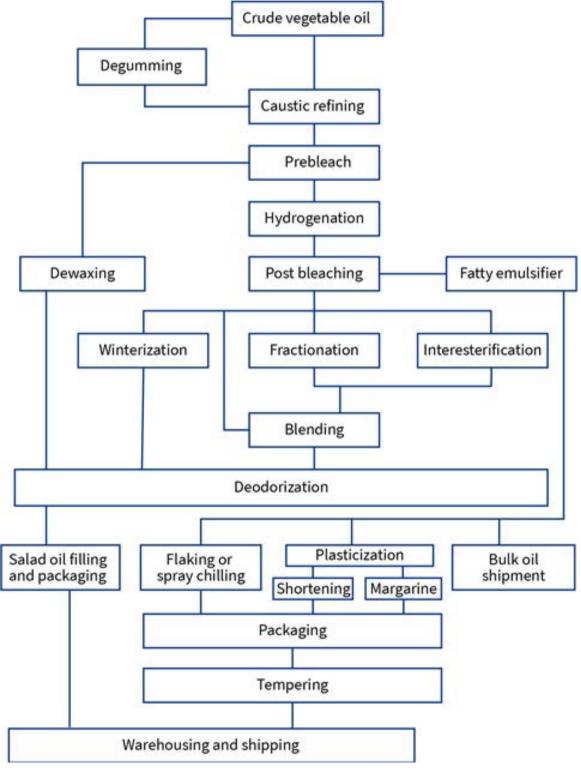


Photo Credit: Weston A. Price Foundation

## Resources

The following is a list of resources for adults and children. You can find a comprehensive list of resources at www.nutritionwithjudy.com

## **GUT HEALING KIT**

- Provides optimal support when starting a low carb, high fat diet
- Provides stomach acid and digestive support to digest and absorb foods and nutrients
- Use "GUT15" at checkout \$15 off + FREE SHIPPING (clickable)
- Supports nausea after high-fat meals and healthy bile flow. Supports proper break down of fats for digestion and absorption
- Support digestion with numerous digestive enzymes to break down fats, proteins and carbohydrates. Supports loose or inconsistent stools, helping stools to be better formed
- Supports healthy gut barrier and immune function. Feeds good bacteria and targets bad bacteria
- Supports gut after antibiotic use
- Supports inflammation and pain support, naturally
- Supports the preparation of nutrient dense homemade collagen-rich bone broth



## Resources

The following is a list of resources. You can find a comprehensive list of resources at www.nutritionwithjudy.com

## Recommended Reading

- Weston A. Price Foundation
- Environmental Working Group
- Obesity Code Jason Fung
- Nourishing Traditions Sally Fallon
- The Big Fat Surprise Nina Teicholz
- Keto Clarity Jimmy Moore

"For the universe holds no greater wonder than the developing child,"

— Sally Fallon Morell, The Nourishing Traditions Book of Baby & Child Care

## Contact

#### **Judy Cho**

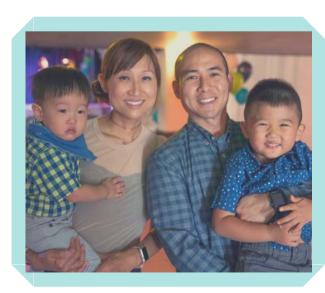
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## About Me

Judy Cho is a certified Nutritional Therapy Practitioner. She also holds a degree in Psychology and Communications from the University of California, Berkeley. Judy works with clients by focusing on the root cause for an array of health struggles and disease. Together, they work to create individualized solutions that are sustainable for the long term.

Empowering clients with the knowledge and individualized tools to change their diet, while being there as a beacon of support and encouragement, has been a rewarding experience.

Prior to becoming a nutritional therapist. Judy Cho was a management consultant and she now leverages her psychology degree and nutritional therapy education to help serve the community in the most effective ways. Judy is a nutritional advocate for the Carnivore diet and on most days her kids follow a low carb diet. Judy focuses on debunking nutritional misinformation and promoting self-knowledge and self-advocacy. She shares bite-sized holistic nutrition information with her infographics on social media platforms. She is passionate about helping people to be their best selves and live their best lives.



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