

Introduction to Nutrition

Brain health

All aspects of our physiology and biology influence the brain

- Metabolic health
- Cardiovascular health
- Body composition
- Musculature

Dementia is preventable

Nutrition is the process of providing or obtaining the food necessary for health and growth

Food

Food isn't just what we Eat

- Food is how we celebrate
- Food is how we bond
- Food is how we show love
- Food is ritualistic
- Food is cultural
- Food is an art form

When you are stressed out, you reach for your favorite food. Food becomes your friend.

Food is ineffable

*The word "ineffable" comes from the Latin term **ineffābilis**, which is a combination of two parts: the prefix **in-** meaning "not," and **effābilis**, which means "able to be spoken" or "utterable." The root **effābilis** itself is derived from **effāri** (to speak out, utter) and **fāri** (to speak). Therefore, **ineffābilis** literally means "not able to be spoken," which is the essence of the modern usage of "ineffable" to describe something that cannot be expressed in words.*

Industrialization of food

Today, most food you find in grocery stores has been processed multiple times. This has majorly contributed to the American health crisis.

Ultra processed versus unprocessed

It's not black-and-white, rather there is a spectrum of processing that food can have

When you buy an apple from the supermarket, it is unprocessed. The second that you slice into it with a knife, it becomes processed. Once you take the apple, squeeze it, and produce apple juice, you're taking the processing to the next level. You can take an apple slice and make applesauce, processing it even further. if you make apple flavored gummy treats, you're processing it even further.

Food processing is a continuum

Where do we find ultra processed foods?

They are packaged in most major supermarket aisles

60% of adults calorie intake today are these ultra processed foods, and have become a staple of the standard American diet

70% of calories for the average child comes from ultra processed foods

Result of eating ultra processed food

We are now finding that there is a link between chronic diseases and ultra processed foods such as **asthma, ulcerative, colitis, and different cancers**

For every 10% increase in ultra processed food consumption there's about a 25% increased risk in the development of dementia

Association of ultra processed food consumption with risk of dementia. A prospective cohort study

Nutrients

Macronutrients

The three primary sources of energy for the human body:

- Carbohydrates
- Proteins
- Fats

Essential nutrients

Nutrients required for your body to function properly

We need these to survive. If we don't, we can develop a deficiency disease.

There is no such thing as an essential carbohydrate, and you would not develop a deficiency disease for not consuming carbohydrates

Fats are essential

Essential fatty acids

We need a very small amount of essential fats on a regular basis.

- Omega 3 fatty acid
- Omega 6 fatty acid

Adding more fat to the diet is associated with better hormonal profiles

Protein is absolutely essential, providing amino acids.

Your body is made of protein

Amino acids

There are dozens of amino acids and 9 essential amino acids

Microscopic molecules that form together to create proteins

Carbohydrates

- Simple carbs
- Complex carbs
- Fiber

Simple carbs are often used to describe sugars

Sugar or added sugar is specifically not healthy

Complex carbs can often be broken down by our bodies as quickly as simple carbs

Simple carbs = sugars that you can taste on your tongue and are sweet

Complex carbs = don't immediately taste sweet until they start breaking down on your tongue

Complex carbs are generally starches found in fruits and vegetables

Fiber is technically a carbohydrate

We don't break down fiber

Carbs and fats

Fats and carbs are both energy

Both are responsible for creating energy for the body

Protein is **not** used as energy in the body. Protein is a building block

Fat is most easily stored as fat

Fiber does not provide energy and generally thought of as indigestible. It fills you up, makes you feel satiated. It plays a role in our gut health and gut microbiome

Fiber

Found in whole plants

Found to increase longevity, lower inflammation levels, and lower cholesterol, generally considered good for you

Fat

- Unsaturated
- Saturated

- Trans
- Monounsaturated
- Polyunsaturated fats

Some people are under the misconception that fat makes you fat. It doesn't necessarily, but it can if you over consume it.

Saturated fats

“Bad fats” - people who say they are bad, don't know what they are talking about

Some sources of saturated fats, like those found in whole foods, such as coconut oil and grass fed butter, can be a part of a healthy diet

Saturated fats are found in red meat, dairy, and plants

Saturated fatty acids = hydrocarbon chains that are connected by single bonds

- Palmitic
- Myristic
- Stearic

Stearic acid is most commonly found in animal products that has little to no impact on biomarkers associated with cardiovascular disease

Dairy has the highest proportion of saturated fats - much higher than beef. **People who consume full fat dairy tend to have better cardio metabolic health**

Saturated fats are chemically stable, making them less prone to oxidation

Butter is a fat, it is solid

Oil is liquid at room temperature and they are primarily comprised of unsaturated fats

Unsaturated fats are less chemically stable than saturated fats

Unsaturated fats

“Healthy fats”

Unsaturated fats, such as those found in broccoli and avocados, are known for their ability to promote cardiovascular health and reduce the risk of chronic diseases

- Monounsaturated
- Polyunsaturated These fats are essential components of a balanced diet, known for their roles and supporting heart health, brain function, and overall well-being

Saturated fats are the most chemically stable, then unsaturated fats, then trans fats

Foods that are higher in polyunsaturated fats are going to be more prone to this form of chemical degradation which can affect your biology in profound ways

Nature has done the guesswork for us, packaging these fats with the correct amount of antioxidants to protect them.

Trans fats

“Processed fats” - **very bad for us**

Trans fats are formed through the process of partial hydrogenation which converts liquid oils into solid fats and is linked to increased risk of heart, disease and other adverse health effects

Commonly found in vegetable oils

They were in the food supply for decades, until removed by the FDA.

We have been told for decades that saturated fats are not good for us by our governing bodies

A food manufacturer could give processed foods the texture and the consistency of food that was otherwise rich and saturated fats, but market it being low in saturated fat. It was also very dirt cheap to produce, unlike butter or tallow.

Partially hydrogenated oils =!Classified as poisonous due to their association with cardiovascular diseases and other health risks

Natural trans fats

Natural trans fats are found in small amounts in some animal products like meat and dairy, but they occur in forms that are less harmful or even beneficial compared to the artificial trans fats produced through industrial processes

Conjugated Lonoleic Acid (CLA)

A type of naturally occurring trans fat found in certain foods like grass, fed beef and dairy products

They have some anti-cancer properties and some metabolism fortifying properties

Protein

Found in plants and animals

Plant VS animal protein

The difference is in the amino acids

Plant proteins, generally contain a more limited range of essential amino acids, compared to animal protein, necessitating a diverse diet to ensure adequate intake of all necessary nutrients

Animal proteins do provide all of the essential Amino acids in their appropriate amounts, and their plug and play amounts. **Animal proteins are the highest quality proteins that we find in nature, primarily because we humans are meat.**

When we ingest the meat of another animal, it helps to fortify the meat that we were made of.

Plant based protein

Plant-based protein eaters often combine legumes and grains in their diet to ensure they obtain a complete array of essential amino acids, supporting optimal, nutrition, and overall health

Vegan diet

Protein concerns

Protein quality can become a health issue when consuming less protein overall

The less protein you consume, you want to make sure that the protein quality that you're consuming is sufficient

Animal protein is the highest protein quality

Collagen

Most abundant protein in the body

Collagen is a protein found abundantly in the body, serving as a crucial component of connective tissue, skin, and bones

Collagen is not an essential protein because we produce it, but **consuming collagen offers a myriad of benefits, from promoting healing, joint improvement, and more.**

Collagen can support wound healing

Collagen is comprised of the molecules that keep our arteries elastic Collagen contains:

- Glycine
- Proline
- Hydroxyproline

Glycine improves metabolic health and sleep

Organ meats

Contains collagen - glycine

Liver, tongue, kidneys

These meats are valued for the rich, nutrient content and distinct flavors and various cuisines worldwide

Supplements

Used to augment protein intake

Whey is the highest quality protein, but is a processed food. Made in the cheese making process, which is minimally processed.

Plant protein supplements

More processed than animal protein, supplements, and **may contain a larger dose of heavy metals**

This is a concern for people on vegan-based diets

We are made of food

“You are what you eat”

Food is a source of information

Food and genetics

Certain foods have been found to exert epigenetic effects, influencing, gene expression, and potentially impacting health outcomes over time

Many of the kinds of chronic diseases that people are suffering from around the world, cardiovascular disease, cancer, dementia, are responsive to food

Food can be a form of medicine

The power of nutrition

Food is important for body composition. The ratio of muscle to fat mass that you're carrying is relevant when it comes to long term health and how you feel.

Food and exercise performance

How can what you eat affect your physical energy and stamina?

Harness the power of nutrition