You are what you eat:

* S.A.D: standard American diet
* Nutrition science
* First 4 weeks delivered food next 4 weeks cook and buy on their own
* The study aimed to investigate the impact of these 2 different diets (herbivore and omnivore) on heart health cardiovascular health, metabolic status, and the gut microbiome
* The 2 diets are omnivore and herbivore/ vegan/ plant-based
* Comprehensive approach

The study will be looking at:

* Body composition
* The epigenome / biological clock
* The microbiome
* The brain
* BMI: body mass index
* Height and weight
* Health status
* Nimai Delgado fitness lifestyle coach
* Micheal Greger physician and author of How Not to Die
* Rudimentary way to characterize whether or not someone is normal weight or overweight (does not put into account muscle mass)
* Carbohydrates
* Christopher Gardner nutrition scientist }{Stanford University
* Amazon rainforest
* Only 14% of pollution comes from transportation while 31% comes from agriculture
* Genetically breed chickens for desirable traits
* Organs can't keep up with muscle growth
* Breeding grounds for disease
* More antibiotics are fed to farm animals that are used in all human medicine
* 1 in every 25 packages of chicken will test positive for salmonella
* 1 in every 5 packages of chicken will test positive for E.Colli
* Salmon are endangered because of salmon farms
* Wild salmon vs farmed salmon
* Farmed salmon = health disaster and environmental disaster
* Mario Ubiali “Humans are Nonrational” and “Companies in the 20th Century to Repeat and Homogenize”
* There are 2 types of fat
* Subcutaneous fat
* Visceral fat
* Visceral fat lies deep within the organs and around so it is dangerous
* Eleven Maddison park
* 20% of children in the USA are obese
* LDL cholesterol dropped with vegan diet
* TMAO was found to be lower in the vegan diet/ omnivore diet
* Blood marker for inflammation
* Teletmore length found to be longer for vegan diet/ omnivore diet
* Epigenetic clock
* Obesity in youth

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**Vegetarian VS Omniovore Diet**

**Question**

Can someone sustain themselves with a plant-based diet?

**Hypothesis**

No, because I suspect that an omnivore diet gives variety to get all the nutrients and vitamins needed to sustain themselves. A plant-based diet is limiting and doesn't provide an individual with enough proteins, which is an essential nutrient the human body needs to thrive.

**Research:**

* **What are the micronutrients that make up food?**

| Water | Water makes up 45-75% of our bodies and is important for good health. * Water is used in different body processes and helps to regulate our temperature.
* Acts as a solvent for nutrients in our body. Blood and other body fluids are mostly water, which helps to carry nutrients around the body and in and out of cells.
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| --- | --- |
| Protien | Protein is made of amino acids. * Protein is used for growth, repair, and maintenance of body tissue.
* Not used as energy in the body, unless theirs no fat and carbohydrates
 |
| Fat | Fat holds more energy than any other nutrient.-->9calories/gram* Fat is how our bodies store energy for later use.
* Processes it's important for:
1. metabolic processes as part of hormones
2. insulate our bodies
3. provide shock absorption to protect different body part.Our cell membranes are made of fat and our brains are about 60% fat.
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| Carbohydrates | Carbohydrates (carbs for short) are the main sources of energy in our body. Also called sugar or sucrose.* It is food for our cells.
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| Vitamens | * Needed in smaller amounts.
* Each vitamin works as part of a different process in your body, helping make your metabolism, growth, and development, or immune system (among many other functions) work properly.
* Vitamins A, D, E, & K. Almost every food contains some type of vitamin.
 |
| Minerals | Minerals are elements that are also essential for our bodies to function. Some minerals are used for metabolic processes and others are used as part of body structures, like calcium in our bones. |

* **What is a vegetarian diet?**

A vegan diet is based on plants such as vegetables, grains, nuts, fruits, and foods made from plants. A vegetarian diet does not include foods that come from animals, including dairy products and eggs.

* **What's an omnivorous diet?**

A type of [diet](https://www.biologyonline.com/dictionary/diet) in which both animal and plant matter are the main food source. An omnivorous diet is a type of [diet](https://www.biologyonline.com/dictionary/diet) wherein the organism derives energy and nutrients by feeding on both animals and plants.

* **Why is diet important to our health?**

What you eat is what you are

Diet is much more important than you think. Proper nutrition helps keep energy levels up and protects against many age-related illnesses and diseases like heart disease, cancer, and diabetes. Some benefits include:

* May help you live longer
* Keeps skin, teeth, and eyes healthy
* Supports muscles
* Boosts immunity
* Strengthens bones

Exercise isn't enough to keep healthy if you intaking bad food.

* **Compare the nutrients we get from eating plants vs eating both meat and plants.**

<https://www.healthline.com/nutrition/animal-vs-plant-protein#amino-acids>

The main difference in nutrition between the 2 diets is “protein”.

Proteins are made up of amino acids. The body uses about 20 amino acids to build protein. Our body is capable of creating some amino acids but not all. We are still in need of 9 more which we receive from proteins which is known as “essential amino acids” Protein sources can vary in the types of amino acids they contain.

→ animal proteins are known as complete proteins which means they contain all 9 essential amino acids.

→ While some plants like soybeans and pea protein are also complete protein sources many other plants are incomplete protein. But you can combine these incomplete plant protein sources in order to meet your body's needs. it is crucial that a person who is eating a plant-based diet eat a variety of plant protein sources to ensure they are getting

all of the essential amino acids

* A diet high in plant protein has been linked to a lower risk of heart disease diabetes and obesity
* Certain animal protein sources are linked to a reduced risk of heart disease, improved cholesterol levels, and increased muscle mass.

The downside of certain types of animal proteins: While research is mixed, both unprocessed and processed red meat have been associated with an increased risk of disease. Other animal proteins, such as fish and poultry, have not been linked to these negative health outcomes.

* **What’s the healthiest vegetable? Healthies meat? Why**
* Spinach is one of the most nutrition-dense vegetables.

Spinach boosts antioxidants, which [may help Trusted](https://pubmed.ncbi.nlm.nih.gov/33399015/) Sources reduce your chance of developing diseases such as cancer.

* Extra-lean beef is known as one of the most nutrient-dense red meat

[Beef](https://www.prospre.io/ingredients/extra-lean-ground-beef-8265) is probably the most well-known choice when it comes to nutrient-dense red meat. Look for [leaner cuts of beef](https://www.prospre.io/blog/the-leanest-cuts-of-steak-that-you-should-try) whenever possible. This is a healthier option than fattier cuts, which have a higher calorie content. Grass-fed is also a good choice to look for. Grass-fed cattle have a healthy diet that results in healthier cuts of meat lower in saturated fat and high in omega-3 fatty acids and antioxidants.

* **The average Western Diet? Explain SAD(standard American diet) What are the issues that come with this diet?**

“The Average Western Diet” is characterized by high amounts of processed foods, refined carbohydrates and added sugars, refined fats, high-fat dairy products, and red meat.

SAD (standard American diet) consists of low in fresh fruits and vegetables, whole grains, lean protein, and healthy oils, and too high in red meat, high-fat dairy products, processed and fast foods, refined carbohydrates, added sugars, salt, and calories.

* **Pros and cons of eating plant-based? (ex, environmental impact, is it limiting?) Why are people switching to vegetarian meals?**

**Positives:**

* The closer people are to being vegetarian, the lower their risk of diabetes, high blood pressure, and metabolic syndrome

**Protection against heart disease:** A review of eight studies found that people who followed a vegan or vegetarian diet were 30% less likely to die from ischemic [heart disease](https://www.webmd.com/heart-disease/default.htm) than people who ate meat. Plant-based diets are lower in saturated fats, iron, and hormones.

**Protection against cancer.** Eating a diet rich in plant foods decreases your risk of cancer. Phytochemicals are substances found in plants that may help prevent cancer. Diets high in fiber can also help you control your weight and protect your gut health. Obesity is a risk factor for many diseases.

**Protection against stroke.** A healthy plant-based diet may decrease your risk of having a stroke by 10%. A healthy diet consists of lots of leafy greens, whole grains, and beans, and a few refined grains and added sugars.

* Vegetarians enjoy high fiber, low fat, and rich nutrients.
* Vegetarian diets tend to have fewer calories, lower saturated fat and cholesterol levels, and more fiber, potassium, and vitamin C than other eating patterns. Vegetarians tend to weigh less than meat-eaters and have lower cancer rates.

**Negatives:**

* Must have a PLANNED, disciplined vegetarian diet to get all the nutrients you need. Vegetarians need to be sure they take in enough iron, calcium, zinc, and vitamin B12.
* People with low socioeconomic status might find it difficult to stay vegetarian because plants are more expensive nowadays. A plant-based diet that relies on on processed foods with too many calories, and too much sugar, fat, and salt, does more harm to an individual. You have to go out of your way to buy pure foods to get nutrients.
* Cutting off meat entirely is probably not realistic. What might be a middle ground is for average people to include more plants in their diet.
* **Can athletes get the nutrients they need from only eating plants?**

Most study results show that athletes can meet all their nutritional needs through a well-planned vegetarian or vegan diet.

O[ne study](https://www.mdpi.com/2072-6643/11/12/3016) did find that protein intake was lower among vegan and vegetarian athletes, and while they did meet the Dietary Reference Intake for protein, they did not meet the recommended protein intake for athletes

**Observations/Analysis of My Research:**

By comparing a plant-based diet with an omnivore diet, planning a diet that is towards one extreme is not realistic for athletes.

→Balancing meat and plants in our diet is essential for our health and development.

→Studies show that there are most health benefits when one maintains an omnivorous diet, but with increased plant intake(eat meat less frequently)

**Conclusion:**

Research reveals my hypothesis is correct!

→ A plant-based diet can sustain an athlete entirely but it is not easy. A plant based diet is able to provide all the nutrients needed for the body. The only issue is you must be very attentive and informed on what plants make up for the lack of protein, and have planned meals.

→ External factors like one's economic status, access to fresh vegetables, and lifestyle (being an athlete) might make this diet difficult to maintain realistically.

In the end, the middle ground to still get the health benefits a plant-based diet provides as an athlete is to simply increase the amount of plants in ones diet, and reduce meat consumption.

SOME QUESTIONS TO RESEARCH

* What is soul food?
* What would happen if we switched to pasture-fed beef?
* What is pasture-fed beef?
* What is salmonella
* What is E. coli
* What is visceral fat?
* What is subcutaneous fat?
* What is LDL cholesterol?
* What is TMAO
* What is an epigenetic clock?
* What is a human genome?
* Why is obesity commonly found in youth?

KEY TERMS

* Vegetation
* Deforestation
* Agriculture
* Genome
* Epigenetic clock

**Sources:**

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Youtube links:

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