

PLANT-BASED NUTRITION

101

written by

Emily Menzer



About the author



WELCOME

Hey there! I'm Emily, the author of this ebook. You can learn more about me and my credentials [here](#). I am thrilled you're checking out plant-based nutrition and hope you continue your research and health journey beyond the information in this text. I'm passionate about helping others foster physical, mental, and socio-emotional wellness to maximize potential, find purpose, and boost productivity. I hope this ebook helps spark positive change!

Enjoy!

Emily

MPH | MCHES | FNS



TABLE OF CONTENTS

01	Benefits of a Plant-Based Diet	<i>page 4</i>
Lesson		
02	Basic Human Nutrition Needs	<i>page 6</i>
Lesson		
03	WHO Guidelines	<i>page 7</i>
Lesson		
04	Calorie Worksheet	<i>page 9</i>
Lesson		
05	Protein Needs	<i>page 10</i>
Lesson		
06	Complete and Complementary Proteins	<i>page 12</i>
Lesson		
07	Protein Quality	<i>page 13</i>
Lesson		
08	Carbohydrates	<i>page 14</i>
Lesson		
09	Dietary Fats	<i>page 18</i>
Lesson		
10	Micronutrients	<i>page 19</i>
Lesson		
References		<i>page 20</i>

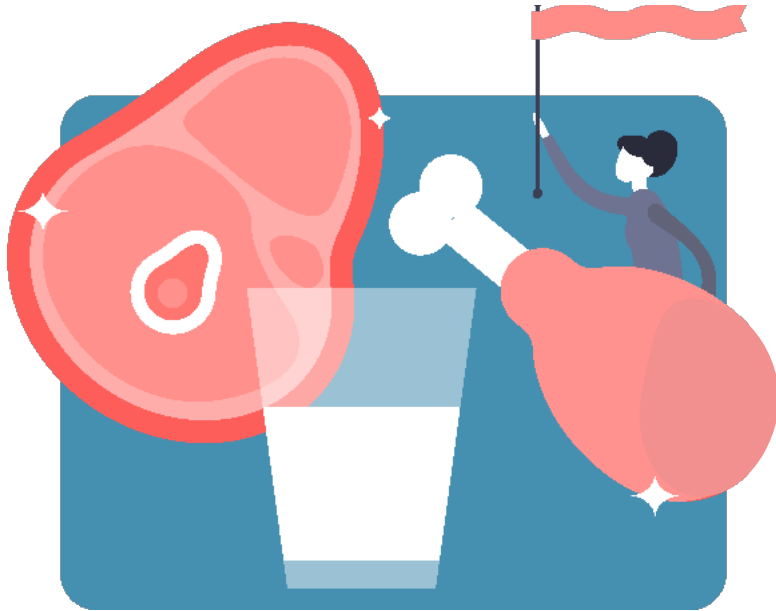
Disclaimer

I am not a physician or Registered Dietician. This ebook is for informational purposes only and does not substitute or replace professional medical advice, diagnosis, or treatments. If you have concerns about your health, and before you start any new nutritional program, you should consult your doctor or another healthcare provider.

BENEFITS OF A PLANT-BASED DIET

There is insurmountable research, books, and publications that provide supporting scientific evidence of the healthy benefits associated with a plant-based diet. Studies have shown that a whole foods, plant-based diet is associated with lower rates of heart disease, hypertension, type 2 diabetes, and cancer.





**“Reduce
greenhouse gas
emissions by
two-thirds.”⁸**

ADVERSE EFFECTS OF ANIMAL PROTEIN

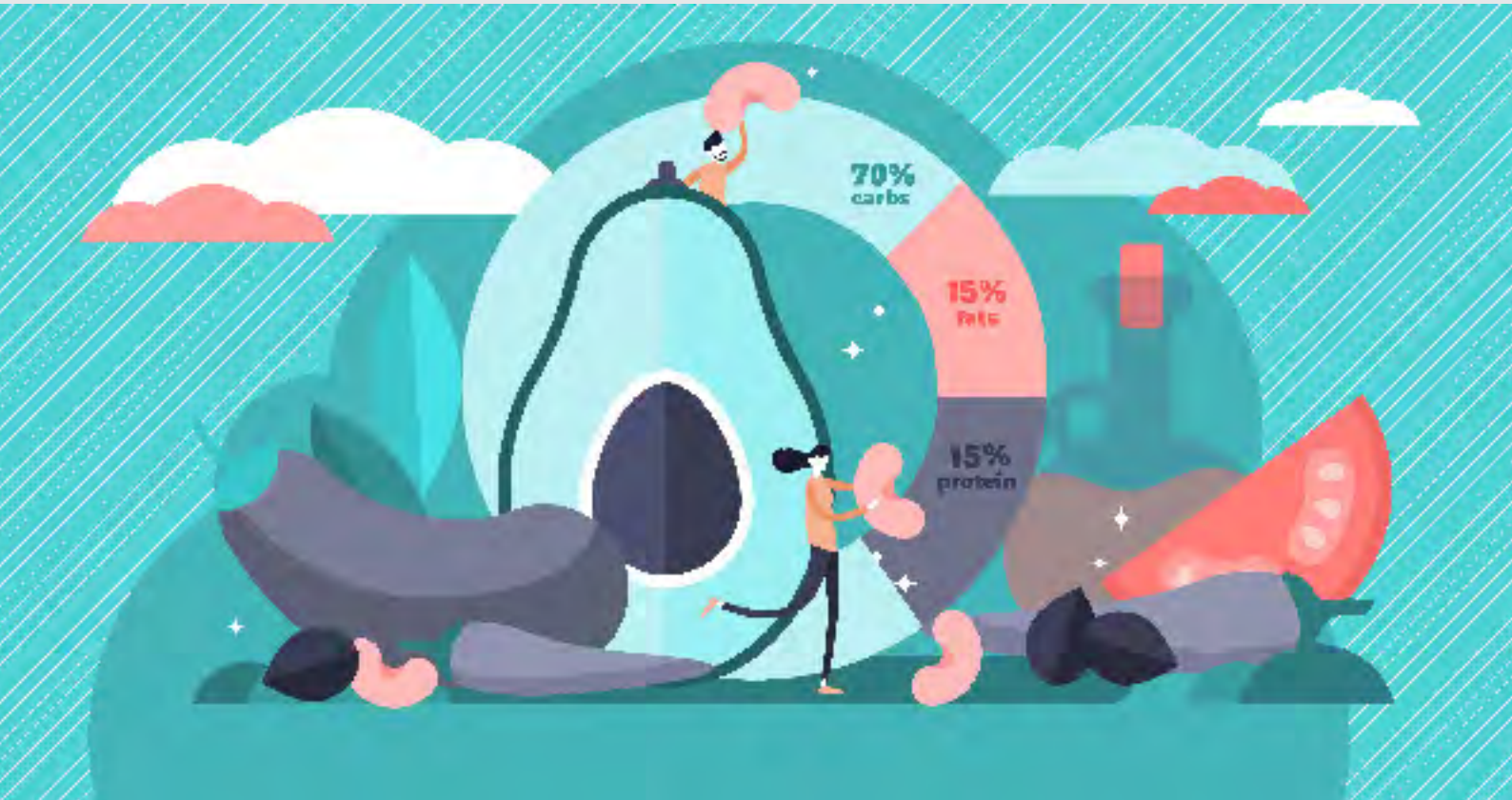
Dean Ornish, American physician, researcher, and founder of the Preventive Medicine Research Institute explains, “research is showing that a diet high in animal protein increases your risk of premature mortality (early death) from all causes by 75%, from cancer by 400%, and from type 2 diabetes by 500%—independent of the amount of fat and carbs [that are also consumed]. However, increasing plant-based proteins did not increase the risk and was found to be protective.”¹

PLANT-BASED DIET AND OUR PLANET

Eating a vegan diet can be surprisingly easy, affordable, and delicious. It is also vastly better for the environment. A study at the University of Oxford defined this improvement: “A global switch to diets that rely less on meat and more on fruit and vegetables could save up to 8 million lives by 2050, reduce greenhouse gas emissions by two thirds, and lead to healthcare-related savings. It could also avoid climate-related damages of \$1.5 trillion.”⁸ Incredible, huh?



02 BASIC HUMAN NUTRITION NEEDS



I realize that not everybody's heart rate races when they talk about nutrition so I'm going to keep this as succinct as possible. It is, nonetheless, helpful and important to know some basics about your body's nutritional needs.

T Colin Campbell^{*}, nutritional biochemist, author, and researcher who spent most of his career at Cornell's Division of Nutritional Science, recommends that your daily calories from protein are comprised on the lower end - making up about 9-10%² of your daily calories.

These are the recommended daily caloric proportions from the World Health Organization (WHO):⁴

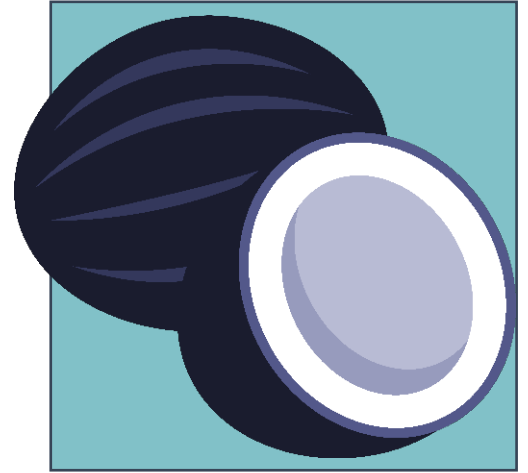
- **55-75% carbs**
- **15-30% fat**
- **10-15% protein**

^{*}T Colin Campbell is also the author of *The China Study* and *Whole*, a senior science adviser to the American Institute for Cancer Research, and a whole lot more. He's one of those old, extremely wise, seemingly disgruntled guys who cares nothing about the fluff that doesn't matter--kind of like Bernie Sanders. T. Colin Campbell is the Bernie Sanders of nutrition.

03 WORLD HEALTH ORGANIZATION GUIDELINES

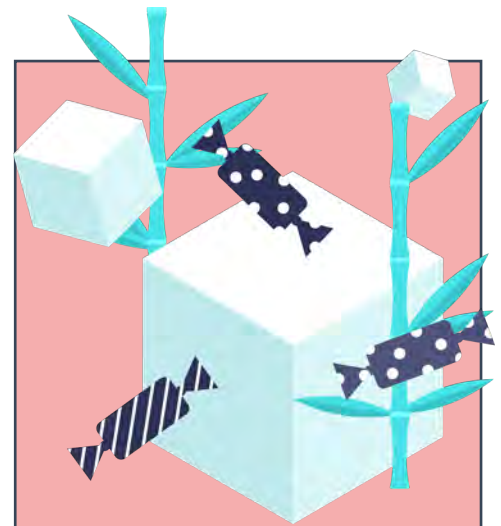
SATURATED FAT

Saturated fat can typically be identified as fat that's solid at room temperature (butter, Crisco, even coconut oil). Research now tells us that saturated fats greatly contribute to our cholesterol levels, so it's wise to limit these bad boys.



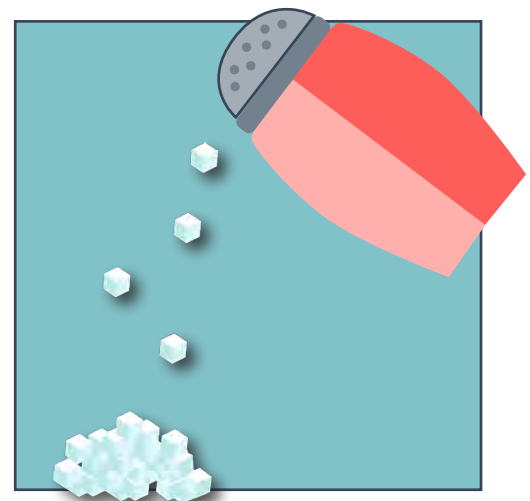
ADDED SUGARS

Added sugars are any sugars not occurring naturally in a food (i.e. juice that's had sugar added to it). There are many types of added sugars. We'll show you how to easily identify all the different names for added sugars listed on ingredient lists.



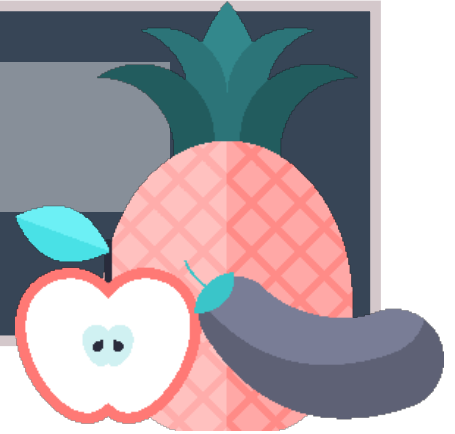
SODIUM

The Dietary Guidelines for Americans will tell you to cap your sodium intake at 2300mg per day because Americans have a serious salt problem; however the WHO recommends even less with a max of 2000mg per day, which is preferable.⁴



WORLD HEALTH ORGANIZATION GUIDELINES: KEEP IT SIMPLE

5 OR MORE PORTIONS OF FRUITS
AND VEGGIES EVERY DAY⁴



KEEP TOTAL DAILY CALORIES FROM
ADDED SUGARS LESS THAN⁴

<5-10%

<2000mg

OR LESS OF SODIUM EVERY DAY⁴



KEEP TOTAL DAILY CALORIES
FROM FAT LESS THAN⁴

30%



04 CALORIE WORKSHEET: HOW TO CALCULATE YOUR RESTING METABOLIC RATE

Your resting metabolic rate (RMR) is the amount of calories you burn each day at rest - this doesn't include any calories you expend from exercise or additional activity. This RMR formula is one of several empirally designed formulas used to calculate resting metabolic expenditure. This particular equation is used by the WHO and doesn't predict RMR with perfect precision but is designed to be used as a guide in dietary planning.⁵

STEP 1 Find your weight in kilograms

$$\underline{\hspace{2cm}} \text{ lbs} / 2.2 = \underline{\hspace{2cm}} \text{ kg}$$

your weight (lbs) your weight (kg)

STEP 2 Use your age range and gender to find your equation

<i>Age Range</i>	<i>Women</i>	<i>Men</i>
10-18	(12.2 x weight) + 746	(17.5 x weight) + 651
18-30	(14.7 x weight) + 496	(15.3 x weight) + 679
30-60	(8.7 x weight) + 829	(11.6 x weight) + 879
Over 60	(10.5 x weight) + 596	(13.5 x weight) + 487

↑
1st chart
number

↑
2nd chart
number

STEP 3 Plug in your weight and equation

$$\underline{\hspace{2cm}} \text{ 1st chart number} \times \underline{\hspace{2cm}} \text{ your weight (kg)} \text{ kg} + \underline{\hspace{2cm}} \text{ 2nd chart number} = \underline{\hspace{2cm}} \text{ your resting metabolic rate} \text{ cal/day}$$

05 PROTEIN NEEDS



HOW MUCH PROTEIN?

The general consensus in the nutrition community, and the recommendation by the WHO is 0.8g protein per kg of body weight, or 0.36g protein per lb of body weight⁴ (per day)--for the average sedentary adult.

$$0.36\text{g protein} \times \text{body weight (lbs)} = \text{g daily protein}$$

Populations that may need more protein are athletes/body builders; older adults (lean muscle decreases with age, creating a need for increased protein intake); pregnant and nursing women; and those recovering from injury, are malnourished, or hospitalized.¹

Those who are active should consume a little more than the recommended amount for sedentary adults (about 15% of your total calories).¹

TWO OPTIONS FOR CALCULATING YOUR PROTEIN NEEDS

1

EXAMPLE OF CALCULATING PROTEIN INTAKE BY GRAMS PER POUND OF BODY WEIGHT (FOR 120 LB FEMALE):

$$0.36\text{g} \times 120\text{ lbs} = 43.2\text{g protein}$$

CONVERTED INTO CALORIES:

$$43.2\text{g protein} \times 4\text{cal/g} = 173\text{ calories of protein}$$

2

EXAMPLE OF CALCULATING PROTEIN INTAKE BY PERCENTAGE OF TOTAL CALORIES (2000 CAL/DAY DIET WITH 15% PROTEIN):

$$2000\text{ calories} \times 15\% = 300\text{ calories of protein}$$

06 COMPLETE AND COMPLEMENTARY PROTEINS

“A meal of rice and beans provides a complete protein, no different from the protein found in eggs or meat.”¹

-Dean Ornish

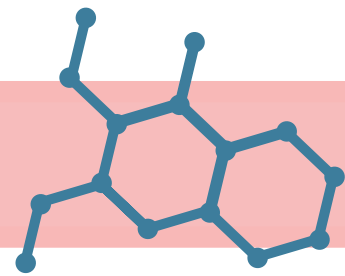
PROTEIN ON A PLANT-BASED DIET

This is probably the number one question most people have about plant-based diets: “Where do you get your protein?”. Let me give you a little background on the basic structure of proteins so you can get a full understanding.



AMINO ACIDS AND COMPLETE PROTEINS

The building blocks of proteins are amino acids. Our bodies need specific ones to function and we even produce some ourselves. However there are nine amino acids that we must get from our diet. Foods with all nine of these essential amino acids are sometimes referred to as “complete proteins”. While meat, dairy, and other animal proteins have all essential amino acids, there are also vegan foods that have all nine: buckwheat, soy, chia seeds, and quinoa, to name a few.

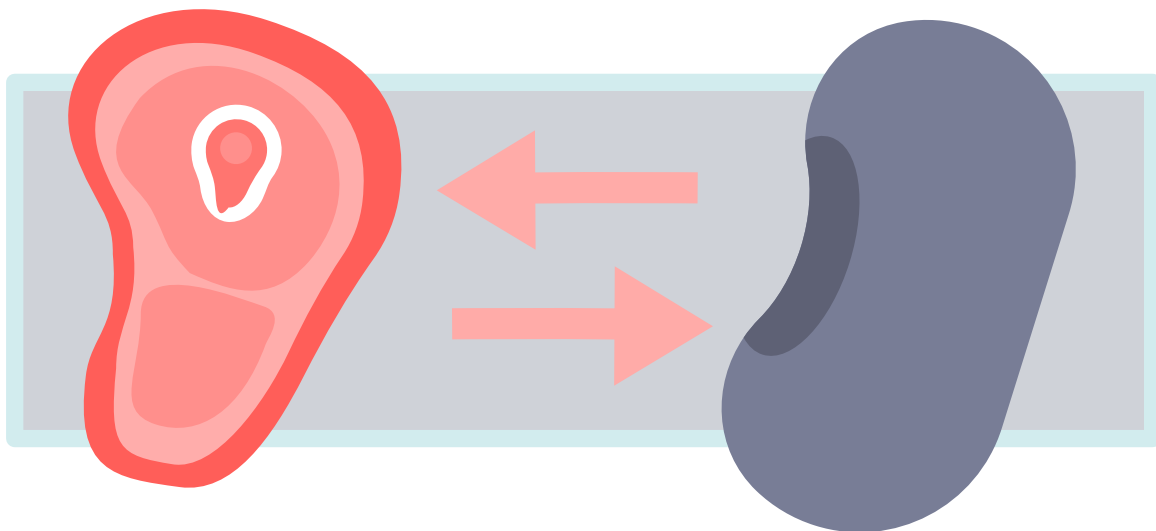


07 PROTEIN QUALITY

PROTEIN = PROTEIN

Don't overthink it. Simply put by Dr. Dean Ornish, "It's easy: just eat any grains and any legumes sometime during the same day."¹

Dr. Ornish also explains "Legumes [beans, for example] are high in lysine [one of the nine essential amino acids] but low in tryptophan and methionine [two other essential amino acids]. Grains [rice, for example] are low in lysine but high in tryptophan and methionine. A meal of rice and beans, therefore, provides a complete protein, no different from the protein found in eggs or meat."¹



PROTEIN QUALITY

Maybe you've heard that whey protein, or animal protein in general, is higher "quality" than the proteins found in plants. Well, sister, that just ain't true. As you know, from the concepts you've learned about in previous sections, amino acids are the molecular building blocks of proteins - and at a cellular level, they're all the same. There's no difference

in the actual structure of amino acids in an animal protein versus the structure of the same amino acids in a plant protein.¹ It's simply the type of amino acid and the quantity that differs.

Furthermore, plant-based protein is typically accompanied by more nutrients like antioxidants, fiber, vitamins and minerals. In comparison to animal protein, plant-based protein also comes with less saturated fats and cholesterol. Pretty cool, huh?



The same chemical structure of protein is found in both animal-based protein and plant-based protein."¹



08 CARBOHYDRATES

Our culture, unfortunately, is terrified of carbohydrates. Thanks to Keto, Paleo, Dr. Adkins, and so many other fad diets, we think carbs are “bad” and have been convinced that a bacon-wrapped scallop is better for us than a bowl of pineapple. Well, folks, I’m here to set the record straight.

TYPES OF CARBOHYDRATES

Not all carbohydrates are equal. I’m sure you’ve heard of different types - simple and complex. Simple carbs are broken down quickly into glucose that swiftly enters the blood stream and increases blood glucose levels. Complex carbohydrates are metabolized more steadily, providing lasting glucose supply to our blood. How quickly foods are broken down into glucose is measured by a standard called the *Glycemic Index*. Like almost everything in nutrition, there are some choices of both simple and complex carbs that are more beneficial to our health than others.

SIMPLE AND COMPLEX CARBOHYDRATES



SIMPLE CARBOHYDRATES

Simple carbohydrates are thought to be “unhealthy” and typical examples are sugary items like candy, soda, and table sugar. While these foods are indeed minimally—if at all—nutritious, there are other foods that fall into the simple carb category that are quite healthy for us. We call them: fruit. This is probably one of the most damaging diet myths. For the record - *Fruit is not bad for you. Fruit will not make you fat.* Of course if you ate 5,000 apples in one day you might gain some weight (or get a horrific case of the runs), so just use common sense. Logic is always part of a healthy diet.



Fruit is not bad for you. Fruit will not make you fat.

A NOTE ON FRUIT

Fruit is full of vitamins, minerals, and other key nutrients like fiber that are beneficial to healthy digestion. Plus fruit is delicious! I am talking about fruit in its whole form—fresh/frozen/canned fruit that hasn’t been processed or overhauled with added sugars. By processed I mean when fruit is broken down and the skin, fiber, or other nutrient-dense component is removed. For example, in the production of commercial juice, you’re removing fibrous parts of the fruit, leaving just the liquid. You aren’t getting most of the healthful benefits as you would if you had just eaten a whole piece of fruit. Fruit with skin removed also won’t digest the same as fruit in its whole form. There’s a key difference.



ADDED SUGARS: HOW TO SPOT THEM

Added sugars are sugars added during processing and are used to sweeten foods, usually providing no real nutritional benefit.

ALL THE DIFFERENT NAMES FOR ADDED SUGAR

Agave nectar	Corn syrup	Glucose solids	Panocha
Barbados sugar	Corn syrup solids	Golden sugar	Powdered sugar
Barley malt	Date sugar	Golden syrup	Raw sugar
Barley malt syrup	Dehydrated cane juice	Grape sugar	Refiner's syrup
Beet sugar	Demerara sugar	HFCS (High-Fructose Corn Syrup)	Rice syrup
Brown sugar	Dextrin	Icing sugar	Saccharose
Buttered syrup	Dextrose	Invert sugar	Sorghum Syrup
Cane juice	Evaporated cane juice	Malt syrup	Sucrose
Cane juice crystals	Free-flowing brown sugars	Maltodextrin	Sugar (granulated)
Cane sugar	Fructose	Maltol Maltose	Sweet Sorghum Syrup
Caramel	Fruit juice concentrate	Mannose	Treacle Turbinado sugar
Carob syrup	Glucose	Maple syrup	Yellow sugar
Castor sugar		Molasses	
Coconut palm sugar		Muscovado	
Coconut sugar		Palm sugar	



COMPLEX CARBOHYDRATES

Complex carbs are the bread and [not-so-much] butter of a healthy diet . Carbohydrates in general are your body's (including your brain!) preferred source of energy--specifically glucose. Carbs contribute to cognitive functioning, our active energy levels, and are essential to healthy digestion. Complex carbs are broken down slower than simple carbs and don't elicit blood sugar bursts the way simple carbs do.

This brings us to processed foods. When you're trying to weigh the benefits of, say, steel cut oatmeal (whole oats) to instant cinnamon sugar oats - there's a clear difference. The instant oats have been processed to the point they contain less nutrients (like fiber, since it's already been broken down in processing) than the whole oats. Instant oatmeal with added sugars will digest differently and affect our blood glucose levels more severely than whole oats. Thus, we may not have as steady of an energy stream or we may not stay full as long.

Essentially, whole foods are where it's at. Whole fruits and vegetables are some of the healthiest things we can consume. Just use common sense. For example, fresh raspberries are obviously a superior choice to a raspberry popsicle that has added sugar and no fiber . You know that. See? You've got this.



09 DIETARY FATS



THE SKINNY ON DIETARY FATS

There are different types of fats--saturated and unsaturated. Saturated fats can typically be identified as fats that are solid at room temperature (butter, margarine, animal lard, etc.). Our body doesn't need saturated fat to function, and the World Health Organization recommends limiting consumption of saturated fats to less than 10% of your daily caloric intake.⁴

Monounsaturated (MUFAs) and polyunsaturated fats (PUFAs) are types of unsaturated fats. Both types of fats can help decrease your cholesterol levels, with polyunsaturated fats having the most heart-healthy benefits. One type of PUFA - omega-3 fats - are essential to the human body and must be consumed in our diet. These fats provide lots of health benefits for your heart, including maintaining a steady rhythm and moderation of healthy blood pressure levels.⁶ There are three major types of Omega-3s -eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA), and alpha-linolenic acid (ALA). ALA is found in foods such as flax seeds, leafy greens, and walnuts. EPAs and DHAs are mostly found in fish but can also come from algae supplementation.⁷

10 A NOTE ON MICRONUTRIENTS

While it's very easy to get all the necessary nutrients in a plant-based diet, you do need to be relatively methodical about it. In addition to omega-3 fats, there are a few top micronutrients to monitor to ensure you're consuming sufficient amounts. The Ornish Program recommends several in the list below.⁷ You can easily find a high-quality multivitamin that contains everything you need.

We'll talk more about logistics and planning for a healthy plant-based diet in future ebooks, but for now, we hope you've enjoyed covering the basics with us!

- iron
- zinc
- calcium
- vitamin D
- riboflavin
- vitamin B-12
- vitamin A
- omega 3 fatty acids
- iodine



REFERENCES

1. A., Me, N., S., P., D., & Richling, C. (n.d.). Getting Enough Plant-Based Protein - Ornish Lifestyle Medicine. Retrieved from <https://www.ornish.com/zine/i-worry-a-bit-about-getting-enough-protein-on-the-reversal-program-what-is-solid-advice-on-daily-protein-intake/>
2. Campbell, T. C. (2019, January 7). Dr. T. Colin Campbell's recommendations for Dietary Guidelines. Center for Nutrition Studies. <https://nutritionstudies.org/2015-dietary-guidelines-commentary/>
3. FAO, UNU, & WHO. (2007). Protein and amino acid requirements in human nutrition: Report of a joint FAO/WHO/UNU Expert Consultation (Technical Report Series 935). Geneva: World Health Organization.
4. Gupta-Smith, V. (2020, April 29). Healthy diet. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>
5. Livesey, G. (1987). Energy and protein requirements the 1985 report of the 1981 Joint FAO/WHO/UNU Expert Consultation. *Nutrition Bulletin*, 12(3), 138-149. doi:10.1111/j.1467-3010.1987.tb00040.x
6. Omega-3 Fatty Acids: An Essential Contribution. (2019, May 22). Retrieved from <https://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/fats-and-cholesterol/types-of-fat/omega-3-fats/>
7. Richling, C.. (n.d.). Plant-Based Eating: Getting the Right Nutrition. Ornish Lifestyle Medicine. Retrieved from <https://www.ornish.com/zine/smart-approach-vegetarian-diet/>
8. Springmann, M., Godfray, H. C., Rayner, M., & Scarborough, P. (2016). Analysis and valuation of the health and climate change cobenefits of dietary change. *Proceedings of the National Academy of Sciences*, 113(15), 4146-4151. doi:10.1073/pnas.1523119113

