

PART I

Nutrition & Hydration Macronutrients



What do we mean by nutrition?

Nutrition is the sum of the processes by which an organism takes in and utilizes food substances inclusive of any substance that promotes growth, provides energy and maintains life.

Hydration, the provision of water, is a form of nutrition as it is generally necessary to maintain life.

A **nutrient** is any such substance that provides nutrition. Macronutrients are required in relatively large amounts. Micronutrients are required in relatively small amounts.

What are **Macronutrients***?

- Provide “building blocks” of life
- Provide the energy to power the functions of life
- Often some macronutrients can do both given a person’s metabolic needs
- Macronutrients’ energy is measured in kilocalories
- aka Calories

Macronutrients

Carbohydrates | Fats (Lipids) | Proteins | Dietary Fibers | Water

Micronutrients

Vitamins | Minerals

* Water covered in Part II Hydration

Macronutrients | Carbohydrates

Definition:

Molecules consisting of carbon, hydrogen, oxygen

Carbs include:

- Sugars
- Starches
- Cellulose

Provides:

Metabolic energy
storage of energy
structural functions

Key to:

- Immunity
- Blood coagulation
- Reproduction
- Normal development
- Digestive health

Found in (Examples):

- Honey
- Fruits
- Starches
- Vegetables

On average provide
4 calories per gram

Should provide 50%
of daily calories

Carbohydrates Continued

Vast majority should be from whole grains, green vegetables, legumes, fruit

Body fat governed by Calories consumed vs. Calories expended

Restricting them may aid weight loss, however:

- This can cause fatigue, digestive irregularities, nausea, headache, halitosis and increased hunger
- Could increase the risk of some cancers as well as osteoporosis
- May lead to deprivation of other important nutrients

Macronutrients | Fats

Also Known As Lipids

Rich in energy and provide important structural materials

Important source of several micronutrients

Triglycerides are the most common type of fat in diets

2 essential fatty acids:
Alpha linolenic acid, linoleic acid

Generally dense and contain 9 Calories per gram on average

Type of fat consumed affects circulation, brain function, bone health, cancer risk, general wellness

Vast majority should be from whole grains, green vegetables, legumes

Know your % of fat intake

“Good Fats” vs. “Bad Fats”

Most Unsaturated Fats vs. Saturated Fats, Cholesterol, Trans Fat

“Good Fats”

Walnuts | Canola Oil | Sunflower Seeds/Oil | Sesame Seeds | Chia Seeds | Peanuts/Some Peanut Butter | Avocado Oil/Avocado | Olives/Olive Oil | Tuna | Wild Salmon | Whole Grain Wheat - Should = 20% to 25% of caloric intake

“Bad Fats”

Deep Fried Foods | Butter | Coconut Oil | Palm Oil/Palm Kernel Oil | Cheese | Ice Cream | Milk | Ground Sirloin Beef/Highly Processed Beef | Candy including Chocolate Candy Bars



Saturated



Monounsaturated



Polyunsaturated

Base your diet on the big and practical picture. Choose the unprocessed baked chicken over the fried chicken wing!

Macronutrients | Protein

Essential Nutrients for the human body

- Building block of body tissue and an energy source
- Should provide 20% to 30% of one's calories

Most important

features: Amino acid composition

Amino acids: Specific molecules when linked manufacture proteins

- Essential for growth and maintenance
- 2nd most abundant molecule in the body
- Found in all body cells

Dietary sources:

Meat, dairy, fish, eggs, whole grain, cereal, legumes, nuts

Failure to consume adequate amount of variety leads to disability and death

Gender, body habitus, physical activity, medical status should influence protein consumption

Macronutrients | Dietary Fiber

Aka roughage which is part of food not broken down by digestive enzymes

- Are mostly plant-based Carbohydrates
- Found in legumes, whole grains, cereals, vegetables, fruits, nuts & seeds
- Increases food value but not food's caloric content

We need to consume more dietary fiber!

Adult Men

Age 19 - 50 should consume 38 grams

51+ should consume 30 grams

Adult Women

Age 19 - 50 should consume 25 grams

51+ should consume 21 grams

Water Soluble Dietary Fiber

- Lowers LDL ("bad" cholesterol)
- Prevents constipation, promotes regularity
- It's viscous gel increases efficiency of transit via small intestine
- May influence regulation of acid base balance of intestines

