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Nutritionists Explain the Subtle Difference Between Macronutrients and Micronutrients

By: Erica Sweeney | August 16, 2021

You've likely heard people talk about counting their "macros" and "micros" when discussing their diets. This refers to micronutrients and macronutrients, two broad categories of nutrients that are essential for your body to function as healthily as possible.

Macronutrients and micronutrients are needed in different quantities, and both serve the body in unique ways. "We need macronutrients to help with energy, to provide the body with fuel which is needed for growth, especially for growing children and pregnant women," says Jerlyn Jones, MS, RDN, spokesperson for the Academy of Nutrition and Dietetics. "Micronutrients, then, help support overall health and play important roles in cell metabolism and neurological functions."

Consisting of vitamins and minerals, micronutrients as a whole help produce energy to power through your day, Jones adds. They also aid in wound healing, bone formation, regulating your immune system and eye, skin and cardiovascular health. Both macronutrients and micronutrients can reduce your risk for a handful of diseases.



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Harnessing these nutrients is important, which is why you'll need to be able to differentiate between them — plus, identify the healthiest staples in each category, all while learning why they're essential in your diet.

What is the difference between macronutrients and micronutrients?

It's likely that you've heard of individuals "counting" macronutrients. Macronutrients refer to broad categories of nutrients, including fats, proteins and carbohydrates, that the body needs in large amounts to provide energy and calories, explains Elroy Vojdani, M.D., a functional medicine physician and founder of Regenera Medical in Los Angeles. Because they're not always used to power you through the day, many are unaware of the significant role that micronutrients play. These are minerals and vitamins that help your body run smoothly, so to speak, and are needed in smaller amounts for cellular function beyond energy creation. "Macronutrients are to create chemical energy, which we use to fuel our body, whereas micronutrients are those that are necessary for the cells themselves to function and do what we want them to," Dr. Vojdani says.

What are the essential three macronutrients?

To keep it simple: Carbohydrates, fats and proteins are the three major macronutrients. Protein: This group of dietary staples provides your body a solid source of amino acids, which it needs for continual growth, development, repair and maintenance of essential body tissue, Jones explains. "Protein provides structure to muscle and bone, repairs tissues when damaged, and helps immune cells fight inflammation and infection." Fish, seafood and poultry, along with eggs, nuts and seeds, soybeans and legumes are the healthiest protein sources, she adds.

Carbohydrates: Work to provide the body raw energy to work with and power you through the day, which is why they are entirely essential (and not something to cut out!). Fruits, vegetables and whole grains are healthy carbs that don't cause a blood sugar spike.

Dietary fat: Otherwise known as "good" fat, this group provide structure to your cells and cushions cell membranes to help prevent damage, Jones explains. Fats are also essential for absorbing fat-soluble vitamins. Olive oil, sunflower oil, nuts, avocado, milk, cheese and fish are among the fat sources Jones would recommend.

Exactly how much of each macronutrient you need each day varies, Dr. Vojdani explains, "based on how old someone is, how much they weigh, what diet they're on and how much exercise they do daily." According to the Dietary Guidelines for Americans, adults' macro range should be 45% to 65% carbs and 20% to 35% fat. The recommended amount of protein is 0.8 grams per kilogram of body weight, which you can calculate by multiplying your weight in pounds by 0.36, per info published by Harvard Medical School.



Water is sometimes considered a macronutrient, too, since your body requires it in large quantities and it's a vital component for all body tissues, says Alexander Ford, D.O., R.D., an osteopathic resident physician at Cleveland Clinic and registered dietician.

What are the four micronutrients?

Water-soluble vitamins, fat-soluble vitamins, macrominerals and trace minerals are the four categories of micronutrients. These nutrients are essential for your immunity, growth, and other vital functions, but your body doesn't need them in large quantities, Ford says — you'll need anywhere from 15 mg to 100 milligrams a day or less.

Water-soluble vitamins: These include vitamin C and a host of B vitamins, and dissolve in water while not being easily stored in your body. Citrus fruits and Brussels sprouts are the best food sources of vitamin C, Jones says, and whole grains, eggs, milk, fish and meat are B-vitamin rich.

Fat-soluble vitamins: Including vitamins A, D, E, and K, are absorbed best when consumed with healthy fats. They're needed for the function, growth, and maintenance of bodily tissue. Fatty fish, like salmon and tuna, egg yolks and fortified cereals and bread are vitamin D rich, and beef, liver, sweet potatoes and spinach provide vitamin A, Jones says.

Macrominerals: You'll need higher quantities of these nutrients — including calcium, phosphorous, and magnesium — are needed than other micronutrients on this list as they're key to performing bodily functions, Ford adds. Calcium and phosphorous, for example, are vital for skeletal muscle function and blood clotting regulation. Dairy products, dark leafy green vegetables, almonds and black beans are rich in macrominerals.

Trace minerals: This group of nutrients include elements that you don't normally need to count as they're consumed in the smallest quantities, such as iron and zinc; but they're still vital to your health. Iron supports red blood cell function, immunity, and cognitive function, Ford says. Zinc aids immune function, wound healing, and enzyme production. Lean beef, beans, chicken, nuts, whole grains, and dairy are rich in trace minerals. How many micronutrients you need each day varies on your own dietary habits and lifestyle factors, Ford says. The Dietary Reference Intakes offers recommendations for each nutrient.

What's the most important macronutrient and micronutrient?

Balance is key when counting your macros and micros, since you need them *all* in a healthy diet. "Consuming a balanced diet including fruits, vegetables, dairy, protein foods and whole or enriched grains helps ensure the body has plenty of nutrients to use," Jones says.



Don't skimp on any one group amid carbs, proteins, and fats, as your body needs more macronutrients than less. Not getting enough micronutrients could lead to vitamin and mineral deficiencies, experts say. Vitamin A, for example, is an especially vital micronutrient to count, as it supports better eye health as we age; plus calcium and magnesium, which helps muscles and blood vessels relax and prevents chronic high blood pressure, Jones says.

Which diet focuses on macronutrients and micronutrients?

The Mediterranean Diet has been ranked the Best Diet Overall by U.S. News & World Report for the past few years, including 2021. "It focuses on minimally processed, plant-based foods," Jones says, and includes foods rich in macronutrients and micronutrients, including:

Lots of fruits and vegetables

Whole grains

Beans

Nuts and seeds

Olive oil as the primary source of fat

Dairy products

Eggs

More poultry and fish than red meat

The diet limits added sugar and highly processed foods high in sodium, sugar and saturated fat, Ford says.

The bottom line:

Talking to your doctor about nutrition and any proposed changes to your diet is always a good idea, Jones says. Targeting your macros and micros in a balanced detailed dietary routine can work to help some individuals supercharge their health, but usually this work is done under the guidance of a qualified nutritionist — it can be tough to balance dietary limits with any other pre-existing conditions on your own.

If you begin to count macronutrients or micronutrients and find yourself experiencing symptoms including fatigue, weakness, dizziness, headaches, brittle hair and nails, hair loss, skin conditions, gastrointestinal problems or any other unexplained change in your health status, reach out to your primary healthcare provider. "There may be a vitamin or mineral deficiency that needs to be addressed," Jones explains.

<https://www.goodhousekeeping.com/health/a37305530/macronutrients-and-micronutrients/>