

Nutrient Dense or Energy Dense?

Are the foods you eat energy dense or nutrient dense?

Energy density and nutrient density are two important terms to understand when making food choices. Foods that are **energy dense contain a higher number of calories per serving**, while foods that are **nutrient dense contain a higher level of vitamins, minerals, and other important nutrients** with little or no added sugars or fats that raise calories. Think of the difference between potato chips and a plain baked potato, or sweetened yogurt and plain yogurt, or creamed spinach vs steamed spinach. Adding fat or sugar to foods increases the calorie content, making these foods more energy dense.

Choosing nutrient-dense foods more often allows us to consume a higher number of essential vitamins and minerals that promote good health, while avoiding consuming too many calories that can lead to overweight or obesity. At daily calorie levels between 1,200 and 1,800, <10% of the total calorie budget remains after consuming foods that contain all the nutrients we need. By the time you eat all the fruit, vegetables, whole grains, and protein foods that your body needs for optimum health, there



are only 120-180 calories left over each day for sugars and fat. If we choose energy-dense versions of these foods — for example eating sweetened canned fruit, vegetables with extra butter or cheese, or processed grains like French fries instead of potatoes, and higher-fat protein foods like sausage or deli meats — then we will consume far more calories than we need.

120-180 calories don't go very far: 12 ounces of regular soda contain 150 calories — all from sugar — while 1 ounce of potato chips contains 155 calories — primarily from fat.

Another benefit of nutrient-dense foods is that they are **often high in water and fiber which increases their volume without increasing calories.**

For example, compare the volume of 100 calories of a raw apple with 100 calories of apple juice. About 2

cups of sliced raw apples contains 100 calories, while 1 cup of unsweetened apple juice contains 113 calories. You'll feel more satisfied after eating the apples instead of drinking the juice because the total volume of food that we consume is the primary reason for satiety.

We can eat a larger volume of low-energy, nutrient-dense foods and lose weight while feeling satisfied.

What's the Science?

A recent meta-analysis of 13 experimental and observational studies that looked at over 3600 people age 18 to 66 years showed a significant association between consuming low energy-density foods and body weight. In other words, people who ate more nutrient-dense foods that are naturally low in calories – foods like fresh vegetables and fruit, whole grains, fat-free dairy products and lean sources of protein – weighed less than people who consumed more foods that are higher in calories and low in nutrients.