

Health-Full Eating & Nutrition



Calculating Your Nutritional Needs Based on Age, Weight, and Gender

Introduction

Your nutritional needs are like your fingerprints; they are unique and likely do not match anyone else's. The USDA Dietary Guidelines estimate that adult women should take in between 1,600 and 2,400 calories per day and adult men 2,000 to 3,000 calories per day. To narrow down where you fall in these ranges it is important to take into consideration a few factors; age, weight and gender. The first step to determining what your daily caloric needs are is to find your Basal Metabolic Rate (BMR).

Basal Metabolic Rate

You burn calories continually throughout the day in order to sustain basic life functions, such as breathing, circulation, and digestion. BMR is an estimate of the minimum number of calories you need each day to maintain these functions at a resting state. It also takes into account your height (in centimeters), weight (in kilograms), age and sex. Based on your sex use one of the two formulas below to calculate your basal metabolic rate:

• **Male:** $9.99 \times \text{weight (kg)} + 6.25 \times \text{height (cm)} - 4.92 \times \text{age} + 5$

• **Female:** $9.99 \times \text{weight (kg)} + 6.25 \times \text{height (cm)} - 4.92 \times \text{age} - 161$

Activity

In addition to resting energy expenditures you also burn calories while being active. Even small movements, like standing out of your chair, can add up over time. Next you need to determine your activity level to find your multiplying factor.

- **Sedentary.** If you get minimal or no exercise, multiply your BMR by 1.2.
- **Lightly active.** If you exercise lightly, one to three days a week, multiply your BMR by 1.375.
- **Moderately active.** If you exercise moderately three to five days a week, multiply your BMR by 1.55.
- **Very active.** If you engage in hard exercise six to seven days a week, multiply your BMR by 1.725.
- **Extra active.** If you engage in very hard exercise six to seven days a week or have a physical job, multiply your BMR by 1.9.

Now you have your personalized daily calories needs! To account for error give yourself a + or - 100 calorie range.

Changes in Nutritional Needs

Age

As you age your nutritional needs will change. Aging generally results in a decrease of muscle mass and an increase in fat mass. The decrease in muscle mass slows your BMR, which results in the need to decrease daily calories otherwise weight gain will occur.

Weight

Changes in weight, particularly changes in fat and muscle, will affect your nutritional needs. If you lose weight you are likely to lose a combination of fat and muscle. Like stated above, a decrease in muscle mass slows your BMR and ultimately lowers your nutritional and caloric needs. The opposite is true for weight gain. If you put weight on you likely have added some muscle mass which will increase your BMR and require more calories to sustain.

Physical Activity

While you don't have much control over the speed of your basal metabolism or age, you can control how many calories you burn through your level of physical activity. The more active you are, the more calories you burn. You can burn more calories with:

- **Regular aerobic exercise.** Aerobic exercise is the most efficient way to burn calories and includes activities such as walking, bicycling and swimming. As a general goal, include at least 30 minutes of physical activity in your daily routine. If you want to lose weight or meet specific fitness goals, you may need to increase the time you spend on physical

activity even more. If you can't set aside time for a longer workout, try 10-minute chunks of activity throughout the day.

- **Strength training.** Experts recommend strength training exercises, such as weightlifting, at least twice a week. Strength training is important because it helps counteract muscle loss associated with aging. And since muscle tissue burns more calories than fat tissue does, muscle mass is a key factor in weight loss.
- **Lifestyle activities.** Any extra movement helps burn calories. Look for ways to walk and move around a few minutes more each day than the day before. Taking the stairs more often and parking farther away at the store are simple ways to burn more calories. Even activities such as gardening, washing your car and housework burn calories and contribute to weight loss.



References:

1. <https://www.healthline.com/health/what-is-basal-metabolic-rate#estimating-bmr>
2. <https://pubmed.ncbi.nlm.nih.gov/15883556/>
3. <https://www.medicalnewstoday.com/articles/basal-metabolic-rate#how-to-calculate-it>
4. <https://www.mayoclinic.org/healthy-lifestyle/weight-loss/in-depth/metabolism/art-20046508>