



The Role of Energy Balance in Weight Management

Calories are how we measure the energy our bodies use as fuel^{1,2}



How do our bodies utilize energy?

¹

Normal body functions

protein production, heart function, body temperature regulation, muscle function, respiration, etc.

Physical activity

both usual daily movements and exercise

Estimating Energy or Calorie Needs

Everyone needs a specific baseline amount of calories each day for our bodies to maintain normal function. This is referred to as our **Estimated Energy Requirement (EER)**, which varies depending on age, gender, activity level, and life stage, among other factors.³

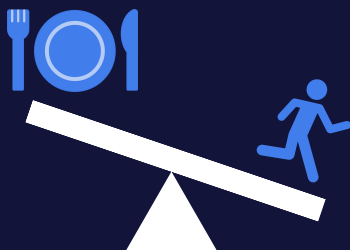
If you don't consume enough calories you could experience negative consequences such as^{3,4}

Risk for low blood sugar – fatigue, light-headedness, fainting
Potential to lose muscle and bone mass instead of fat

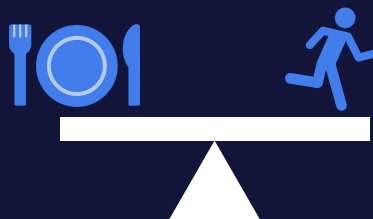


Energy Balance

Energy balance is a comparison between your **ENERGY IN** (calorie intake from the foods / drinks you consume) and **ENERGY OUT** (calorie output from daily movement & physical⁸ activities). Monitoring this balance can help with your weight goals:



To lose weight:
ENERGY IN < ENERGY OUT



To maintain current weight:
ENERGY IN = ENERGY OUT



To gain weight:
ENERGY IN > ENERGY OUT



Energy IN

Macronutrients serve as the main sources of energy for your body. The amount of calories in each gram of macronutrient are:¹

Carbohydrates: 4 calories
Protein: 4 calories
Fat: 9 calories

While **alcohol** is not a macronutrient, it also provides energy at **7 calories / g**

Energy OUT

You use calories by expending energy through both normal body functions & physical activities.

If you don't use up all of the energy or calories you take in, your body will store them as fat for later use, leading to weight gain.³



**1 pound
 = 3500
 calories**

Therefore, if you want to lose approximately **1 pound per week**, you need to create a calorie deficit via less calories in and/or more calories out of **500 calories / day**.^{*2}

*note: the actual amount of weight lost can vary depending on your body, age, gender, or other lifestyle factors.

EXAMPLE: How to achieve a 500 calorie deficit using a combination of

Food / beverage swaps

Lower calorie options

12 oz can regular soda (150 calories) → 12 oz can diet soda (0 calories)
= 150 calories



Smaller portion sizes

3 oz bag cheese tortilla chips (400 calories) → 1 oz bag cheese tortilla chips (150 calories)
= 250 calories

Physical activity

(estimated based on 155 lb person):⁴



30 minutes walking (3.5 mph)
= 140 calories



**TOTAL:
 540
 calorie
 deficit**

Regardless of your goal, you should work with a registered dietitian nutritionist (RDN) to accurately estimate your calorie needs and ensure you are getting the nutrition your body needs both in terms of energy & nutrient recommendations.

References:

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2. Mayo Clinic. (2024, Sept 5). Counting Calories: Get Back to Weight-Loss Basics. Accessed Nov 19, 2024. <https://www.mayoclinic.org/healthy-lifestyle/weight-loss/in-depth/calories/art-20048065>
3. National Institute of Health (NIH) (2013, Feb 13). Balance Food and Activity. NIH National Heart, Lung, and Blood Institute. Accessed Nov 19, 2024. <https://www.nhlbi.nih.gov/health/educational/wecan/healthy-weight-basics/balance.htm#:~:text=What%20is%20Energy%20Balance%3F,calories%20burned%20through%20physical%20activity,>
4. U.S. Centers for Disease Control and Prevention (CDC). Physical Activity and Your Weight and Health. CDC – Healthy Weight and Growth. Dec 27, 2023, Accessed Nov 19, 2024. <https://www.cdc.gov/healthy-weight-growth/physical-activity/>