

Energy Balance

Energy balance is the state where energy intake is equivalent to energy expenditure.

- **Energy intake** refers to the food you eat (energy in).
- **Energy expenditure** is energy expended through physical activity and exercise (energy out).
- **Balance** encompasses the energy coming into the body with energy leaving the body.
- In order to maintain a healthy weight, **energy coming in must equal energy going out.**



ENERGY BALANCE STATES

- Energy Intake = Energy Expenditure → Weight Maintenance
- Energy Intake > Energy Expenditure → Weight Gain
- Energy Intake < Energy Expenditure → Weight Loss

How many calories do I need?

An easy way to determine your **ideal body weight (IBW)** is to use this formula:

- Women: 100 pounds for the first 5 feet of height plus 5 pounds for each additional inch.
- Men: 106 pounds for the first 5 feet of height plus 6 pounds for Each additional inch.

To roughly estimate your **calorie needs for weight maintenance**, you can use the following formulas:

- 10 calories per pound of IBW if you are sedentary or very obese.
- 13 calories per pound of IBW if your activity level is low, or if you are over age 55
- 15 calories per pound of IBW if you regularly do moderate activity
- 18 calories per pound of IBW If you regularly do strenuous activity

One pound of body fat is about 3500 calories – to lose one pound of body weight, an individual must expend 3500 calories more than is taken in. The optimal strategy for weight loss is to combine reduced intake with increased expenditure.

Creating a calorie deficit:

- Switch from whole milk to 2%
- Walk 30 minutes, 2 times a day
- Eat fruit for dessert instead of a brownie
- Take the stairs instead of the elevator
- Switch to diet soda or non-caloric beverages
- Play racquetball for 1 hour

The recommended rate of weight loss should be about 1-2 pounds/week. This can be achieved by creating a deficit of 500 to 1000 calories each day.

MODERATE INTENSITY PHYSICAL ACTIVITY

- Walking briskly
- Water aerobics
- Bicycling
- Gardening

VIGOROUS INTENSITY PHYSICAL ACTIVITY

- Jogging or running
- Swimming laps
- Jumping rope
- Hiking uphill