



## Metabolism 101

Metabolism is a complex process that involves converting nutrients into energy. This energy fuels everything from breathing and circulating blood to building and repairing cells and other tissues.

There are two main metabolic processes: catabolism and anabolism. Catabolism occurs when molecules in your body are broken down for energy and anabolism is when your body uses nutrients to build more complex molecules from simpler ones. When your metabolism is working properly, there is a healthy balance between these two processes.

However, factors like genetics, muscle mass, hormones, sleep quality, and lifestyle choices can all disrupt this balance leading to metabolic dysfunction. Common causes can include insulin resistance, type 2 diabetes, metabolic syndrome, and hypothyroidism. These conditions can slow your metabolism and cause your body to store more fat.

While metabolism naturally slows with age, there are still some things you can do to maintain balance. Try these simple strategies to better support your metabolic health:

- **Build lean muscle.** Muscle is more metabolically active than fat, which means it burns more calories, even at rest. By including strength and resistance training exercises at least 2-3 times per week, you can build and preserve your lean muscle, which also boosts your resting metabolic rate.

- **Eat enough protein.** Protein burns more energy during digestion than carbohydrates and fat. Aim to include protein at every meal, and focus on lean protein sources like eggs, chicken, tofu, Greek yogurt, and beans.
- **Move throughout the day.** Usual daily activities like walking and taking the stairs help your body process nutrients more efficiently. Prioritizing movement throughout the day can help keep your metabolism active.
- **Ask your doctor about other options.** Talk with your provider about possible blood work to assess your metabolic function, or ask for a referral to see a registered dietitian. While not necessary or appropriate for everyone, certain medications can help boost metabolism by mimicking a naturally occurring gut hormone that regulates blood sugar and appetite.

Metabolism is about more than just burning calories. It determines how well your body digests food, stores fat, and balances your body weight. Eating a well-balanced diet that includes essential nutrients, adding movement to your daily routines, and staying current with blood work can help ensure your metabolism is functioning properly.



## Thyroid Health

The thyroid gland is a small, butterfly-shaped organ located in the front of your neck. This gland releases hormones that play a key role in regulating your metabolism, body temperature, and weight. When your thyroid functions poorly, it can lead to an underactive thyroid (hypothyroidism) or an overactive thyroid (hyperthyroidism), each of which results in unique symptoms.

Hypothyroidism occurs when your thyroid gland does not make enough hormones, while hyperthyroidism results from excessive hormone production.

Abnormal blood test results may indicate thyroid dysfunction, but thyroid disorders can share symptoms with many other conditions, so it is important to work with your provider to get an accurate diagnosis. A simple blood test can help diagnose thyroid imbalances early.

The following lab values are generally considered normal:

- **Thyroid-stimulating hormone (TSH):** 0.4 to 4.0 uIU/L
- **Free T4:** 0.8 to 1.8 ng/dL
- **Free T3:** 2.3 to 4.2 pg/mL

You may be at a higher risk of thyroid disease if you are female, have a family history of thyroid disease, are over the age of 40, smoke or vape, have a history of autoimmune disease, or have been pregnant recently.

One of the most noticeable symptoms of thyroid disease is the presence of a goiter—a visible bulge around the neck that happens when the thyroid gland becomes enlarged. Goiters can occur with both hypo- and hyperthyroidism, so it is important to have a healthcare provider confirm the diagnosis with a blood test.

Hypothyroidism is typically treated with daily thyroid hormone replacement (levothyroxine) to restore normal hormone levels. In contrast, hyperthyroidism is commonly treated with antithyroid medications like radioactive iodine to shrink the thyroid. However, in some cases, surgery may be needed to correct the imbalance.

To support your thyroid, eat a balanced diet rich in minerals, stay physically active, avoid smoking, and schedule regular check-ups with your healthcare provider to check your thyroid hormone levels, especially if you have risk factors.

| <b>Symptoms of hypothyroidism</b> | <b>Symptoms of hyperthyroidism</b> |
|-----------------------------------|------------------------------------|
| Fatigue and sluggishness          | Unexplained weight loss            |
| Weight gain                       | Rapid or irregular heartbeat       |
| Dry skin and thinning hair        | Anxiety or nervousness             |
| Cold intolerance                  | Tremors in the hands or fingers    |
| Depression or low mood            | Increased sweating                 |
| Constipation                      | Difficulty sleeping                |



## How Does Intermittent Fasting Work?

Intermittent fasting (IF) has gained popularity in recent years, largely due to positive effects on metabolic health. Unlike typical diets that focus on what you eat, IF focuses on when you eat. The practice involves scheduled periods of fasting, giving your body a chance to rest between periods of eating.

While there are many health benefits associated with IF, it is not appropriate for everyone. People with a history of disordered eating behaviors, those who are pregnant or breastfeeding, individuals with poorly controlled diabetes, or anyone taking a medication that requires food should consult with their healthcare provider before starting a fasting schedule.

### How IF Works

Success with IF requires understanding how it works, how your body responds to fasting, and how to adapt it to fit your lifestyle. When you fast, your pancreas produces less insulin because it is not needed for digestion. This drop in insulin allows your body to tap into and burn stored fat for energy. Meanwhile, your liver plays a critical role by converting stored sugar (glycogen) into glucose, which your body uses for energy during fasting hours. IF can also reduce inflammation and improve insulin sensitivity, which can help improve blood sugar control and reduce the risk of developing type 2 diabetes.

*IF can also reduce inflammation and improve insulin sensitivity...*

### Getting Started

There are several types of intermittent fasting. One of the most popular is the 16:8 method, where you fast for 16 hours and then eat within an 8-hour window. The 5:2 method involves eating normally for five days a week and significantly reducing calorie intake (by around 500 to 600 calories) on the following two days. However, simpler methods include alternate-day fasting, where you fast every other day, or time-restricted eating, where the eating window is shorter but there is no reduction in calories. It is important to experiment with different types of fasting to see which type fits your lifestyle and preferences.

For those new to IF, it is best to ease into it gradually. Start by delaying your first meal by one hour, then slowly extend your fasting window over a period of days or weeks. During your eating windows, choose nutrient-dense foods like non-starchy vegetables, lean proteins, and healthy fats. Apps like Zero, Window, and Fastic can also make it easier to track fasting habits.

Intermittent fasting is a style of eating that works well for some but may not be equally effective for everyone.

This recipe makes for a perfect snack or appetizer. Filled with bold flavors and bright colors, this shrimp recipe also has an impressive nutrition profile.

### Ingredients

- 1½ tbsps Extra Virgin Olive Oil
- 1 tbsp Honey
- 1½ tsps Paprika
- 1 tsp Granulated Garlic
- ¼ tsp Sea Salt
- pinch Cayenne (optional)
- 14 ozs Shrimp large, peeled and deveined
- 1½ tbsps Water
- 1½ tsps Lemon Juice
- Ground Black Pepper to taste (optional)

### Instructions

1. In a large bowl, whisk together olive oil, honey, paprika, garlic, and salt. Sprinkle in cayenne, if using. Whisk again to combine.
2. Add the shrimp to the large bowl and toss to coat thoroughly in the marinade.
3. Heat a large pan or skillet over medium-high heat.
4. Once warmed, add the shrimp along with all of the marinade to the pan. Cook shrimp for 1 to 2 minutes per side.
5. Add water and lemon juice to the pan. Stir well to coat the shrimp in the marinade.
6. Continue cooking to allow the sauce to reduce slightly, then remove from the heat. Season with lemon juice and additional salt, to taste.
7. Top with freshly ground pepper and serve immediately. Enjoy!

**Servings:**  
4



### Nutrition Facts

Calories: 177  
Carbs: 7g  
Fibre: 0g  
Sugar: 5g  
Protein: 23g  
Fat: 6g