



# Working out on an Empty Stomach?

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Should I workout on an empty stomach first thing in the morning? In a perfect world it would make so much sense to workout on an empty stomach and just burn fat. The problem is this is not a perfect world and we use other systems in our body to regulate glucose metabolism. Here is some information to better understand why we need to eat before exercising.

## Here is the physiology behind energy conversion from lack of food:

- First let's understand the 3 macronutrients in nutrition. **Carbohydrates**, in the form of **glucose** provide energy, **Proteins**, in the form of amino acids provide muscle repair/growth and **Fats**, in the form of lipids provide insulation, nerve conduction, organ and joint protection and reserved energy.
- **Glucose** is the principal circulating sugar in the blood and the *major energy source of the body*.
- If you use the analogy of a car using gas for fuel; when a car runs out of gas it stalls out, it doesn't use anti-freeze, oil, windshield washer fluid or transmission fluid to keep running. The human body can use other systems to regulate energy. One process is called **gluconeogenesis**.
- **Gluconeogenesis** is the process that converts amino acids or fatty acids to glucose and is performed by liver cells. If we had no glucose (sugar) from carbohydrates in the body for energy, our system would then have to convert another source into energy. Proteins and fats would be the next systems to play a role in glucose metabolism.
- The **Adrenal glands** secretes a hormone called **Glucocorticoids** which promotes the break down of tissue protein to amino acids, especially in muscle cells.
- **Amino acids** are the structural units from which proteins are built.
- **Amino Acids** now formed move out of tissue cells into blood and circulate to the liver. Liver cells then change them to glucose by process of **Gluconeogenesis**. Newly formed glucose leaves the liver and enters the blood. This action increases blood glucose concentration. **This means we are burning muscle to use muscle.**

## What this mean to the everyday exerciser who works out on an empty stomach:

- When you think you are losing weight because you step on a scale and the number is lower, the actual truth is muscle loss has occurred.
- Muscle weights more than fat and fat floats on top of water.
- People spend too much time in the gym thinking weight loss occurs during a workout; in actuality we stimulate muscle to metabolize fat throughout the day.
- If we workout on an empty stomach our body would have to breakdown muscle to use for energy and then we would be burning muscle to use muscle.
- Always eat 1 hour before exercising and 1 hour post exercising to help regulate metabolism and in turn burn body fat and help maintain lean muscle mass.

The clear choice is to ***always eat a carbohydrate 1 hour prior to exercising.*** Taxing the internal organs for the purpose of glucose metabolism will have a negative output on the body and interrupt homeostasis. Knowing the facts will help make better choices and keep people healthy and wise.