

## Where Does Body Fat Go When You Lose Weight?

What happens to body fat when you shed pounds — do you sweat it out, pee it out or breathe it out? The answer is yes, yes and yes.

How on earth does this happen? "It helps to understand that our bodies are designed to store excess energy in fat cells," says endocrinologist Bartolome Burguera, MD, PhD.

If you're carrying extra pounds, it means you're taking in more energy (calories are units of energy) than you're using.

"The extra energy is stored in adipose tissue all around your body in the form of triglycerides," says Dr. Burguera. Smaller amounts of energy are stored in your liver and muscles as glycogen. How does your body use energy? In more ways than you'd think:

- When you're resting. Your heart needs energy to pump, your lungs to breathe and your brain to think. (That's your basal metabolism.)
- When you're active. Your muscles need energy whether you're only getting up from a chair or running a marathon.
- When you're eating. Your digestive system needs energy to break down and store food.

## What happens to body fat when you diet?

When you diet, you take in fewer calories than your body needs. Because of this deficit, your body turns to fat reserves for energy.

*Your body must dispose of fat deposits through a series of complicated metabolic pathways.* The byproducts of fat metabolism leave your body:

- As water, through your skin (when you sweat) and your kidneys (when you urinate).
- As carbon dioxide, through your lungs (when you breathe out).

"Meanwhile, fat breakdown liberates energy for biological functions and physical activity," he says. "It also generates heat, which keeps body temperatures normal."

## What happens to body fat when you exercise?

Your muscles first burn through stored glycogen for energy. "After about 30 to 60 minutes of aerobic exercise, your body starts burning mainly fat," says Dr. Burguera. (*If you're exercising moderately, this takes about an hour.*)

Experts recommend at least 30 minutes of cardio two to three times a week.

They also recommend weightlifting and resistance training. Increasing muscle mass may help you burn more calories and raise your basic metabolic rate.

Exercise also increases your respiratory rate, so more CO2 leaves your body when you work out.

## About exercise and weight loss

"Exercise is key to weight loss and to maintaining that weight loss," says Dr. Burguera.

But it may take time to move the number on your scale, so be patient.

Everyone's response to exercise varies: Some people lose weight, others maintain it, and a few may even gain a few pounds.

"Generally, however, people who successfully lose weight and keep it off tend to be physically active — up to an hour per day," he says. "Engaging in some form of exercise three times per week is highly recommended."

Cleveland Clinic is a non-profit academic medical center.