

THE SKINNY ON METABOLISM

BY D. BURACK

**METABOLISM BEARS THE BRUNT OF SO MANY BODY WEIGHT COMPLAINTS
DOES IT REALLY DESERVE THE BLAME ?**

“If only I had a faster metabolism, then for sure I’d be able to lose weight!”

Mentioned in almost every conversation that bemoans the results of dieting efforts, metabolism is a word that rolls off the tongue comfortably. Yet as frequently as it’s mentioned, if you were asked for a real explanation of the term – what would you say? If the question leaves you speechless, read on for a good answer that you’re welcome to repeat!

Metabolism refers to a complex biochemical process that essentially converts all that you eat into usable energy. Calories are combined with oxygen, which releases the energy to power your body’s functions. Growth, repairing cell damage, reproduction, and response to the environment are all possible due to the chemical reactions that make up metabolism. Even at rest, your body needs energy to keep on breathing and circulating blood.



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There are two basic processes that comprise metabolism:

ANABOLISM

aka: biosynthesis) refers to the chemical reactions that require energy to synthesize larger molecules from smaller components. For example, anabolism allows the body to maintain tissues, mineralize bones, increase muscle mass and grow new cells. Anabolism is responsible for building up all of the compounds needed by the body's cells for normal use. Some typical anabolic hormones that are involved in these processes include growth hormones, testosterone, insulin and estrogen.

CATABOLISM

Catabolism is the system of chemical reactions that release energy when breaking down complex molecules into smaller units. This energy is utilized by the body for physical activity, from the tiny cellular level right up to gross body movements. Familiar catabolic hormones include cortisol, glucagon, and adrenalin.

Here's a simplified play-by-play of metabolism at work:

1. You bite heartily into a tuna fish sandwich and slurp your ice coffee.
2. Your favorite lunch foods reach your digestive system, where a slew of enzymes deconstruct it into different molecular compounds.

3. These compounds are absorbed into your bloodstream.

4. Circulating blood carries the compounds to your cells, where other catabolic enzymes release the energy from the compounds. This energy can be thought of as necessary fuel for the body. Whether you need to run a marathon, grow taller, or ponder politics, your body actions are then powered by this fuel and anabolism.

Now that the defining groundwork is laid, let's move on to the winning question: How is metabolism connected to body weight?

Catabolism – Anabolism = Body Weight. To elaborate: if you compute the energy released into your body minus the energy expended by your body, the result will be the amount of excess energy (calories) in your body. This excess energy is stored as either fat or glycogen (which is stored in the liver and muscles).

Metabolism is obviously linked to body weight, but don't go pointing fingers at it as the primary cause of the rising numbers on your scale! On the contrary, Mayo Clinic experts stress that it is rarely the source of excess weight gain.

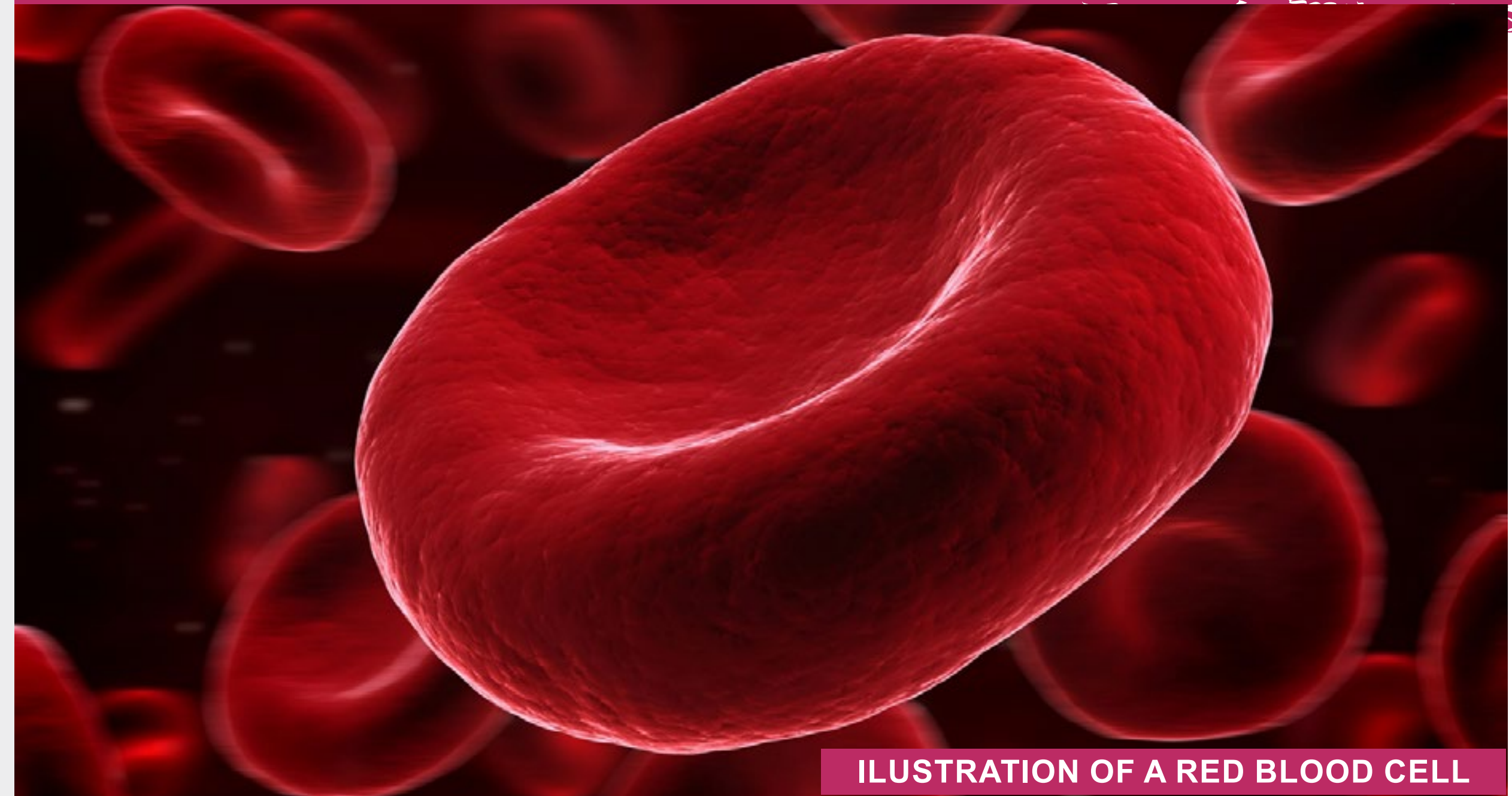


ILLUSTRATION OF A RED BLOOD CELL

While there are underlying medical conditions that do impact metabolism and can bring about weight gain (e.g., hypothyroidism or other metabolic disorders), metabolism is usually not the culprit of weight gain in a healthy functioning body. Rather, extra weight is due to excess calories, which derive from an imbalance between the amount of food and drink consumed, level of physical activity, and the body's needs.

Yet, on the playing field of metabolism, all is not equal between the players. Some people are able to lose weight more quickly and easily than others, and some gain body fat more readily. Now we're finally hitting upon the origin of the pesky "I have a slow metabolism" grievance!

Alongside the medical assertion that metabolism is generally not the reason for excess body fat, there is still awareness that metabolic rate influences a body's caloric needs. Some people have a faster metabolism than others, and these people can therefore eat more without gaining extra weight.

What determines metabolic differences between people?

In the big picture, approximately 70% of the caloric energy that your body requires daily is taken up by your

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basal metabolic rate (BMR). Your BMR refers to the rate at which your body burns calories while you are peacefully at rest. The higher your BMR, the more calories you can ingest before you're eating in excess. Genetics play a key role in fixing one's BMR. Yet in addition to what was inherited, age, gender and body weight are also powerful determinants of a person's BMR.

Age: According to research, each decade after age 40 is accompanied by a 5% decrease in metabolism. This is primarily due to loss of muscle mass, which lowers caloric needs. Aging also initiates hormonal changes that consume less energy. Decreased physical activity is another root of lower metabolic rates. Gender: Men naturally have a higher metabolism than women, because muscle-to-fat ratio is generally higher. On the average, men thereby burn more calories than women of the same weight. In fact, gender is so closely tied to metabolic rate that there is a joke among nutritionists that the best way to lose weight, is to be male!

Body Weight: Larger body mass requires more energy to move and maintain

than a small body mass. Keep in mind that muscle not only weighs more than fat, but also requires more calories. Therefore, people with a higher muscle to fat ratio will have a higher BMR than people who weigh the same but have a lower ratio.

Is metabolism is set in stone, or is there a way to rev it up?

Miracle vitamins and magic potions to speed up metabolism, are nothing more than the hype of great ad campaigns. Some of these products are also known to possibly cause dangerous side effects, so be cautious if you choose to try them. (Always check with your doctor before taking supplements) If you're disappointed to hear that a faster metabolism can't be bottled, don't despair – there are other legitimate strategies to boost your rate!

Lift weights. Increasing muscle mass is proven to affect and increase metabolic rate over time.

Eat protein and iron-rich foods.

Drink green tea. Some studies demonstrate that catechins in green tea give a lift to metabolism especially when drunk first thing in the morning and then periodically throughout the day.

Maintain proper vitamin D levels.

Request a blood test, and then take supplements as medically advised.

Eat regularly. Small meals eaten throughout the day are believed to be the best way to maintain a higher metabolism.

Get fit with any and all physical activity. This brief and general overview of metabolism– an extremely complicated biochemical system– will hopefully lead to a greater appreciation of the bodies Divinely designed for us. And now, when the word metabolism is casually dropped into a conversation, you'll be able to chime in with an educated voice and share the real skinny on what metabolism is, and what it does!

SOURCES

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