Body fat gets a bad rap. But it’s essential for protecting our organs and storing energy. You may think you know the color of human fat from looking at cuts of meat. But human fat is different from that of a cow or pig. Here’s your field guide to human body fat. Discover the different colors, what they mean, and which kind of fat can kill you.

Most fat cells in your body are white. These cells soak up dietary fat and store it for future energy needs. But they can also do something crazy. Feed them too much dietary fat, and they will keep getting bigger – growing and growing to the point of dangerous dysfunction.

OK, truthfully, most of those white cells really look yellow. Like schmaltz. (The Yiddish word for chicken fat). Why? Because humans can’t quickly metabolize the yellow carotene found in vegetables and grains. So carotene migrates to our fat cells and settles there.

Brown fat cells interact with white fat cells to burn energy in cold weather and create heat. Lean people have more brown fat than non-lean people. Some scientists think that if they can find a way to stimulate brown fat cells, they can help people lose weight. (They’re working on it.)

Beige cells are mixed in with white fat. We actually have more beige fat than brown fat. Beige cells are inactive until you get cold. Then they start burning energy like brown fat cells, only not as well. Beige cells are being studied for their potential to help regulate insulin and protect organs like the liver.

White

Yellow

Brown

Beige

Belly

nature.com/nature/journal/v508/n7496_supp/full/508S52a.html
jci.org/articles/view/45887
rsc.org/learn-chemistry/resource/rws04444129/carotene
npr.org/blogs/health/2014/12/16/371210831/when-you-burn-off-that-fat-where-does-it-go

Q. I HAVE A BIG STOMACH, BUT IT’S HARD AS ROCK.
That’s not all muscle. Your stomach is as hard as a rock because all the fat is packed under the abdominal wall. This is incredibly dangerous (see “Belly fat” above).

Q. IS BODY FAT GOOD FOR ANYTHING?
A. You’d die without body fat. It stores crucial energy, serves as insulation, protects certain organs, and literally helps hold cells together. But too much of a good thing can also be fatal. Lose your excess body fat by exercising more and following the Mediterranean diet. (Don’t worry. If you’re overweight or obese like 60% of Americans, you’re in almost no danger of dying from too little body fat.)

Q. WHAT HAPPENS TO BODY FAT WHEN YOU LOSE WEIGHT?
A. You exhale it. Fat is metabolized into carbon dioxide and a little water. Aerobic exercise increases your exhalation rate, causing you to lose more fat.

Q. IS BODY FAT GOOD FOR ANYTHING?
A. Here’s the deal. Fat is essential for protecting our organs and storing energy. But too much fat can also be dangerous. Lose your excess body fat by exercising more and following the Mediterranean diet. (Don’t worry. If you’re overweight or obese like 60% of Americans, you’re in almost no danger of dying from too little body fat.)