

Have you ever thought about how food works in your body?

How is your body able to digest a piece of cheese, or pizza, or a carrot?

Today we know a lot more about how the body breaks down foods so that they can be used for building blocks and energy.

That knowledge wouldn't be possible without the work of early chemists like Marie M. Daly!



Marie M. Daly

Chemistry

Chemists study materials. They study what substances are made of and how different substances act. Marie M. Daly was the first African-American woman to receive a Ph.D. in chemistry in the United States. A passion for science and a love of learning helped her accomplish such a feat. Dr. Daly was born in Queens, New York, to a family who greatly valued education. Her father studied chemistry at Cornell University. Unfortunately, he had to quit school. But it was his love of science that sparked Daly's interest.

Throughout her career, Dr. Daly made great discoveries in chemistry. While in graduate school, she studied how the body's chemicals digest food. Scientists now know that every food you eat or beverage you drink is made up of atoms and molecules. As you chew, food is broken down physically by your teeth, tongue, and cheeks. It is broken down chemically by enzymes in your mouth. After you swallow, the food continues through your body and gets broken down by other chemical reactions. Without these chemical reactions, your body wouldn't grow, because new cells couldn't be made. Eating is enjoyable, but its real purpose is the building blocks and energy your body needs as matter moves through it.

The same is true for all other organisms that eat. The bodies of a fish, a bird, and a goat all need food for the same reasons. Because all matter is conserved, those atoms in their food have to come from somewhere, and have to end up somewhere. Just like you, those animals all have an excretory system through which anything a fish, bird, or goat body can't use gets passed out of the body. What's especially interesting about animal droppings is that they serve—in some way—as fertilizer for the growth of other organisms in the environments they live in.

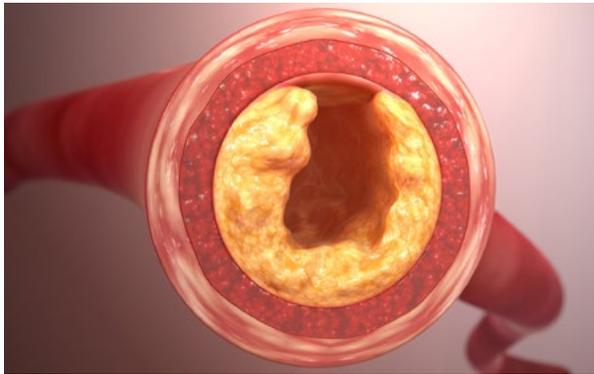
We know these things now, but there once was a time when all of these processes were just being researched for the first time. Someone had to figure out that organisms grow, heal, and have energy when they eat, and that the relationship is causal. The processing of food causes other things to happen. Dr. Daly's work has helped chemists and nutritionists today better understand the relationship between the body and food. She also studied heart attacks, leading her to uncover new information about how food and diet can affect the heart. This work continues as an important area of study for scientists. You may have heard about studies

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that have found that eating certain foods is good (or is bad) for your heart. Figuring out which foods actually cause heart problems is important research. This is the type of research that Dr. Daly laid the groundwork for throughout her career.

Dr. Daly's successful and groundbreaking career all started with a good education. She received her B.S. in chemistry from Queens College. She then received her M.S. in chemistry from New York University in one year. In 1947, she made history when she received her Ph.D. from Columbia University.

Besides her research, Dr. Daly also taught biochemistry courses. Biochemistry is the study of chemicals in living things. She has worked hard to encourage young African-Americans to enroll in medical schools and graduate science programs. Part of this effort was a scholarship Daly started at Queens College to help students pay for their education.



Plaque lining the intima of an artery

Works Cited

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