

Antioxidants

This week takes us from snack food to super science dork at blazing speed.

Fruits, vegetables, some juices and other foods claim on their label that they are “high in antioxidants.” This may be, but you say to yourself, “What do I care? What is an antioxidant and why does that sound like something I want to put into my body?”

To get to the heart of this matter, we will discuss a little bit of chemistry. Everything can eventually be broken down into the individual molecules that compose it. At the end of the line, when things are seen as the smallest particles, we are left dealing with atoms. The atoms are made of electrons, protons and neutrons. These are the three basic parts of everything.

The atom can be imagined as a tight ball of the protons and neutrons clumped together with the electrons swirling all around the outside, in little orbits, rotating around the clump in the middle. When chemical reactions occur, the number of electrons around the outside change.

This is what is called an oxidation-reduction reaction. This is similar to the word “oxygen” which makes sense, since oxygen is very good at stealing electrons from other atoms.

Stay with me now—science talk is almost over. I warned you it was going to be pretty dorky...

Oxidation means that one of the electrons was plucked away from the outside of the atom. This changes the atom.

Here is an example: iron atoms have an electron that is easily plucked away from the orbits around them. When this electron leaves, the iron is said to have been oxidized—and we commonly call this rust. Rust is oxidized metal.

So, back to your body and the snack food. These electrons can also be plucked away from atoms in your body. When this happens, the body is damaged. Cells can have problems, DNA can be changed or mutated, and stress to the body from oxidation is associated with many medical problems, including strokes and brain problems.

Basically, you can think about it like this: you do not want the small molecules in your body to be “rusting.”

Antioxidants do just this—they limit the amount of oxidation that goes on within your cells. Medical science does not entirely understand what is going on with the oxidation, and we do not know exactly what the consequences of this cell “rusting” are. But, it is fairly obvious that we do not want our DNA to “rust.” Future research will look at the problems caused by the oxidation and what diseases may be affected by it.

Plant and animal cells know this rusting is bad for them, so they make antioxidants. Some of the antioxidants they make are: vitamin C, vitamin E and many enzymes. There are many different types of antioxidants that have different roles to play with cells. And, juices and snacks that have “high levels of antioxidants” have an increased ability to prevent rusting within your cells.

So, think of this next time you think of snacking on potato chips or fruit. Which one do you think may have more antioxidants for your body?

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▯▯▯ *This column is about health related issues with a focus on a rural community. The purpose of this column is to be informative and to comment on interesting medical and health related topics. Any questions or concerns that may arise regarding topics covered by this article should be addressed to your primary care doctor. ▯*

▯▯▯ *Justin can be reached by email at Justin.Tyler.Newman@gmail.com with comments or ideas for topics that you may desire to be addressed in this column. The goal of this column is*

Health is not a condition of matter, but of mind

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that you find it not only entertaining and informative but also that it creates a desire to take a life-long interest your health and body.