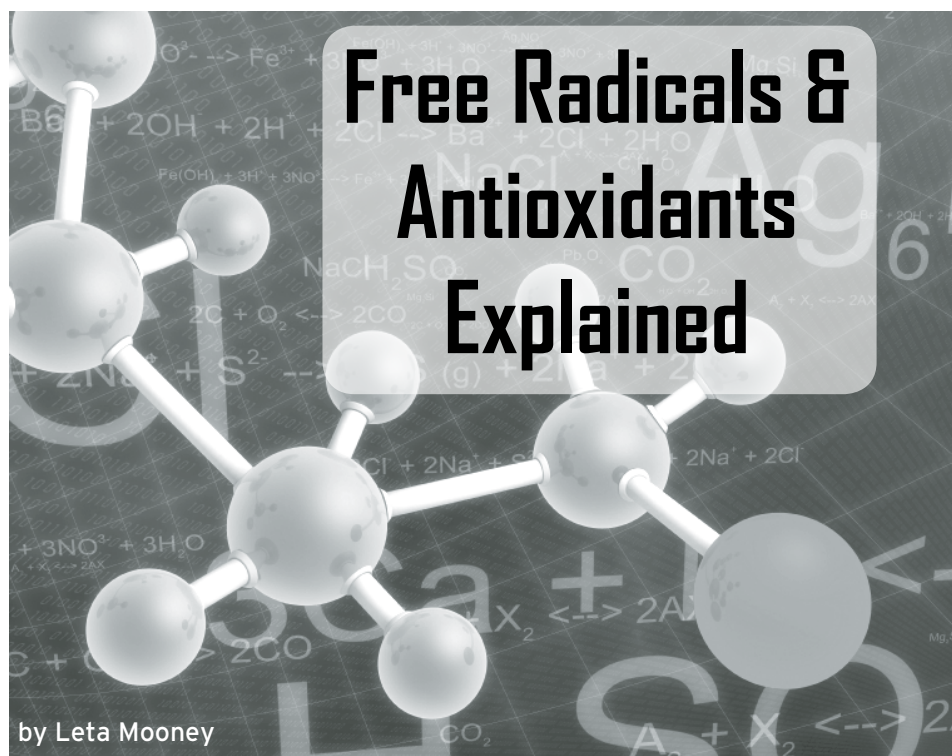


Did you know that everyone actually has two ages? You have a chronological age and a biological age. Now don't go out and buy a second birthday cake just yet. The year you were born determines your chronological age, but biological age relates to the age you might feel or appear because of your health. Your biological age is related to the amount of free radical damage your body has suffered. So what are free radicals, and what kind of damage can they do to your body? Let's answer both questions very simply:

Our bodies are composed of many different types of cells made up of many different types of molecules. As you may remember from grade school science, molecules consist of one or more atoms of one or more elements joined by chemical bonds. Atoms contain a nucleus, neutron, protons and electrons. The number of protons in the nucleus determines the number of electrons surrounding the atom. The innermost shell of the atom is full when it has two electrons. When the first shell is full, electrons begin to fill the second shell. When the second shell has eight electrons it is full, and so on. Atoms often complete their outer shells by sharing electrons with other atoms. By sharing electrons, the atoms are bound together and satisfy the conditions of maximum stability for the molecule. A substance that has a full outer shell tends to not chemically react.

Usually these shared chemical bonds don't split and leave a molecule with an unbalanced, unpaired electron; but when a weak bond does split, free radicals are formed. They can react swiftly with other vulnerable compounds desperate to capture the electrons they need for balance. They might break cell membranes, annihilate enzymes and even break down DNA just to steal an electron from another molecule. That assaulted molecule then also becomes a free radical. This chain reaction results in damage to living cells.

It is true that some free radicals occur naturally as cells burn food for energy, and occasionally the immune system creates free radicals to neutralize viruses and bacteria. Environmental



factors, such as pollution, radiation, cigarette smoke and manufactured chemicals, create free radicals in the body, and natural free radical damage can result from exposure to excessive solar radiation. Heavy metals in the body multiply the free radical chain reactions by the thousands. If antioxidants aren't available, or if free radical production is excessive, noticeable damage occurs, then called oxidative stress. This damage increases with age and accelerates biological aging and disease associated with aging.

Antioxidants neutralize free radicals by donating one of their own electrons, thereby stopping the electron stealing reactions. The antioxidants do not become free radicals themselves, because they are stable in either form and remain out of service until they are recharged or replaced. Acting like scavengers, they clean up free radicals to prevent cell and tissue damage, disease and aging.

Where do we get antioxidants? The absolute best way to ensure adequate antioxidant nutrient intake is through a balanced diet consisting of grains, legumes, fruits and vegetables. These will raise your antioxidant intake to optimum levels and reinforce your body's natural defenses against free radicals and oxidative stress. By eliminating or at least limiting your consumption of foods of animal origin (meats, poultry, fish and dairy products), you can significantly reduce your free radical exposure. Animal products are abundant in free radical forming fats and are more likely to contain residues of pesticides, herbicides and other free radical producing toxins. Since different antioxidants have different functions, make sure you are getting a broad range, rather than one or two.

In supplement form, vitamin E is one of the most efficient chain braking antioxidants available. Water soluble antioxidant vitamin C also works especially well at combating free radical formation caused by cigarette smoke. Coenzyme Q10 fields the barrage of free radicals that is released as the mitochondria convert food into energy. Consult your naturopathic or homeopathic doctor about which supplements and dosage is right for you.

Start fighting those free radicals now, and you'll have many more birthdays to celebrate. Better yet, when your biological age is much younger than your chronological age, people may begin to believe you when you say you're "just 39," again.

Leta Mooney works at T&J Organic Emporium in Market Common, 926 H Iris St., Myrtle Beach. She can be reached at (843) 839-2211. See ad page 23.