Nutrition and Spinecare

Anti-Oxidant Use and Spinecare

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Free radicals are organic and inorganic ions and small molecules that are highly reactive and damaging to cellular function. These chemicals may be endogenously created in the body through various chemical reactions as well as exogenous chemicals found in the environment.. The body has various mechanisms to inactivate free radicals. Once formed these highly reactive radicals can start a chain reaction, like dominoes. Their chief danger comes from the damage they can do when they react with important cellular components such as DNA, or the cell membrane. Cells may function poorly or die if this occurs. To prevent free radical damage the body has a defense system of antioxidants. Free radicals are formed naturally in the body, but increase during times of stress such as intense physical exertion, radiation, metabolism of environmental pollutants and administered drugs and immune system response to disease, tissue injury or infection.

Many dietary constituents can help prevent free radical damage. Antioxidants are molecules which can safely interact with free radicals and terminate the chain reaction before vital molecules are damaged. There are a variety of protective agents which include anti-oxidant vitamins and minerals to food additives that might enhance the action of natural anti-oxidants. Indeed, at least part of the beneficial effects of a high fruit and vegetable diet is thought to derive from the variety of plant anti-oxidants that might act as beneficial supplements in humans.

Although there are several systems within the body that scavenge free radicals, the principle micronutrient (vitamin) antioxidants are vitamin E, beta-carotene, alpha-lipoic acid and vitamin C. Additionally, selenium, a trace metal that is required for proper function of one of the body's antioxidant enzyme systems, is sometimes included in this category. The body cannot manufacture these micronutrients so they must be supplied in the diet.

One of the causes of inflammation is the overproduction of free radicals. Antioxidants are intimately involved in the prevention of cell damage, a common pathway for cancer, aging, and a variety of diseases. Antioxidants work together to combat the presence of free radicals and thus help decrease inflammation. Therapeutic approaches that neutralize the free radicals that cause inflammation help to reduce pain and tissue damage.