



## **ENZYME RESEARCH GROUP**

### **Catalase: Anti-Oxidant Enzymes**

by Karen DeFelice, M.S

With each breath we take, the process of metabolizing the life-giving oxygen through respiration also releases harmful hydrogen peroxide and free radicals compounds into our bodies. Hydrogen peroxide is formed naturally through fatty acid metabolism and white blood cells acting on harmful bacteria. Hydrogen peroxide is toxic and can form carbon dioxide bubbles in the blood if not controlled.

Free radicals can cause havoc with DNA integrity and interfere with other cell reactions. Free-radicals have been associated with cancers, degenerative diseases, and general health breakdown.

Humans as well as other oxygen-dependent organisms must have some way to clear these harmful compounds out or it will be poisoned. Fortunately, we do! Catalase is a highly efficient enzyme produced naturally in the body that works to detoxify hydrogen peroxide and clear out free radicals. Catalase enhances the conversion of hydrogen peroxide to water and oxygen.

This enzyme also works to breakdown potentially harmful toxins such as alcohols, phenols, and formaldehydes. Thus, catalase may be very helpful for anyone suffering from chemical sensitivities in detoxification issues.

In an interesting correlation, catalase is a primary enzyme measured in determining soil health or when monitoring sewage and waste clean-up. As microbes degrade the organic matter (digest their food), catalase is released into the soil or sludge area. This enzyme is often present in these environments because it specializes in detoxification activities.

Two other enzymes with antioxidant properties similar to catalase are super oxide dimutase, often noted as SOD, and glutathione peroxidase.