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The prevalence and impact of toxic aldehydes upon mental and physical fitness

Aldehydes are toxic chemicals that are freely found in the environment and within metabolic reactions in each individual. Toxic aldehydes are also generated as a response to oxidative stress, which can occur during infections, a traumatic brain injury, stroke, or heavy exercise. Most individuals can neutralize and clear an average load of aldehydes. However, if there are errors in the genes of detoxifying proteins, such as occur in cases of familial alcoholism and various neurological disorders, or there is excessive exposure to aldehydes during periods of oxidative stress, then the aldehydes will cause cellular damage that affect mental and physical well-being. The presentation will focus on the sources and prevalence of toxic aldehydes, the symptoms of aldehyde damage, and micronutrient suggestions to detoxify the aldehydes.

Speaker Biography

Frances Journak completed her Ph.D. in Chemistry at the University of California Berkeley and then changed research area to Biochemistry and Molecular Biology at the Massachusetts Institute of Technology. She taught and did research as a faculty member in the Department of Biochemistry at the University of California, Riverside for 19 years and then transferred as a faculty member to the Department of Physiology and Biophysics in the School of Medicine, University of California, Irvine for 15 years before retiring several years ago. Her major research area involved crystallographic and biochemical analyses of medically relevant proteins, earning over 3000 citations for nearly 100 peer reviewed publications. In recent years, she has focused on the prevalence and impact of aldehydes in mental and physical health, authoring a detailed review of the pivotal role that aldehydes play in autism spectrum disorders.

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