

# Boyd Haley, PhD

## The toxicity of mercury and its relationship to neurological illness and oxidative stress

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### **About the lecture:**

Data from the 1009-2000 and 2005-6 NHANES imply that the percent of American women with detectable levels of inorganic mercury in their blood has increased from 2% to 30% in the intervening 5-6 years. Also, the detection of markers for dementia seem to increase with increasing mercury levels in the report prepared at UCLA. Also, several recent publications have shown that mercury exposure causes biological damage at low levels which may not be obvious until years after the exposure. Data also indicates that there is a genetic subset of the human population that is unable to effectively excrete mercury from low level exposures. This leads to a retention toxicity in this subset at levels of exposure that is easily excreted by the bulk of the healthy population. Autistic children seem to fit into this subset. The observed low levels of mercury in the blood, urine and hair of autistics, when compared to the higher levels retained in their other body tissues, indicates that retention toxicity occurs. This susceptible subset of the population, due to the low frequency, is very likely to be overlooked or not be apparent in most epidemiological studies that consider general populations. However, individuals with the inability to excrete mercury would be expected to develop neurological problems such as autism, AD, etc. Sorting out these individuals and comparing their toxicity status to the general, healthy population produces results strongly indicating that mercury exposures may be the cause of their neurological problems.

### **About Dr. Haley:**

Dr. Haley received his BS in Chemistry/Physics from Franklin College in 1963. From 1964 to 66 he served as a medic in the U.S. Army. He obtained his M.S. in Chemistry at the University of Idaho (1967) and his Ph.D. in Chemistry/Biochemistry at Washington State University (1971). He was an NIH Postdoctoral Scholar in the Department of Physiology, Yale University Medical School from 1971 to 1974. His first academic appointment was at the University of Wyoming in 1974 where he was promoted to full professor in 1983. In 1985 he was hired by the University of Kentucky Markey Cancer Center with academic appointments as professor in the College of Pharmacy in the Division of Medicinal Chemistry and in the Department of Biochemistry. He was appointed to be Chair and Professor of Chemistry/Biochemistry in the Department of Chemistry from 1996 to 2005. He retired from the University of Kentucky in July 2008. He has lectured throughout the world and testified before Congressional committees and the Institute of Medicine regarding various aspects of mercury toxicity and neurological diseases.