

Mercury is a heavy metal of known toxicity, noted for inducing public health disasters in Minamata Bay, Japan [1] and in Iraq [2–4]. Mercurous and mercuric salts chiefly damage the gut lining and kidney [5], while methyl mercury is widely distributed throughout the body [5]. It exists in several forms: inorganic mercury, which includes metallic mercury and mercury vapor (Hg_0) and mercurous (Hg_2^{++}) or mercuric (Hg^{++}) salts; and organic mercury, which includes compounds in which mercury is bonded to a structure containing carbon atoms (methyl, ethyl, phenyl, or similar groups). Inhaled elemental mercury vapor, for example, is easily absorbed through mucus membranes and the lung and rapidly oxidized to other forms (but not so quickly as to prevent considerable deposition of elemental mercury in the brain). Toxicity varies with dosage: large acute exposures to elemental mercury vapor induce severe pneumonitis, which in extreme cases can be fatal [5]. Methyl mercury is easily absorbed through the gut and deposits in many tissues, but does not cross the blood–brain barrier as efficiently as elemental mercury; however, on entering the brain it is progressively demethylated to elemental mercury [5]. Low–grade chronic exposure to elemental or other forms of mercury induces subtler symptoms and clinical findings, as discussed hereinafter.