

## CHAPTER 2

### Mercury: Not Just a Fish Story

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Mercury was the Roman god of commerce as well as the fleet-footed, wily, deceptive, changeable, and quick-witted messenger of the gods. One of Mercury's jobs was to conduct the dead to Hades. But the mercury that concerns us here is the metallic element—changeable like the Roman god and the only metal that is liquid at room temperature. Many of us remember playing with liquid mercury as children, pouring it from one palm into another, and perhaps wiping the residue on our pants. Also known as “quicksilver,” mercury has seen a variety of industrial uses over the years.

Like lead, mercury has been known to be toxic in high doses since Roman times. In this chapter I tell you a little of the history of mercury pollution. Then I review the research on how mercury in small amounts affects people, especially children who are exposed prenatally. There is also scientific controversy over mercury, but it is more routine than what we saw for lead. Research studies show slightly different results. The different results have all been used in a risk assessment of prenatal exposure to mercury. When I walk through it, you will see that risk assessment is not cut and dried. Judgment calls must be made at virtually every step. But what are the judgment calls, and how do they affect what our government tells us about the hazards of mercury? Ultimately, the judgment calls embedded in the risk assessment influence how mercury is regulated.

#### Mercury Poisoning

Mercury poisoning has been called “Mad Hatter's syndrome” or “Hatter's shakes.” The substance was used in the process of felting wool for hats, and workers exposed to enough of it developed serious symptoms. “Mad Hatter's syndrome” in particular emphasizes that some of the toxic effects are psychological.

The symptoms of mercury poisoning in adults are shown in Table 2.1. The first symptoms to appear are usually sensory. But, mercury is a “sneaky” poison because its effects are delayed. You could be exposed to a toxic dose today, but it would take about 30–60 days for the neurological effects to show up. A silent pollutant with latent effects, mercury lends itself to the “I always did this before and was fine” fallacy. This is why it may be difficult for people to connect their mercury exposure to their symptoms.

*Mercury Is “Natural”*

Like lead, mercury is an element. Its symbol in the periodic table in your chemistry textbook is Hg. Because it is an element, it exists naturally in rock and in water. So how does mercury become a pollution problem?

Mercury is deposited in the environment in unnaturally large quantities in several ways: industrial uses of mercury in gold mining, chemical and paper

**TABLE 2–1.** Symptoms of mercury poisoning in adults

Sensory effects	Loss of sensation in extremities
	Loss of sensation in areas around mouth
	"Tunnel" vision
	Loss of hearing
	Altered taste and smell
Motor effects	Abnormal reflexes
	Loss of coordination in walking
	Slurred speech
	Tremor
Cognitive	Loss of fine motor coordination
	Lowered intelligence
Psychological	Forgetfulness
	Irritable temperament
Other	Social withdrawal
	Anxiety
	Depression
	Insomnia
	Fatigue
	Joint pain
	Increased reflexes
	Blushing easily
	Headache
	Dizziness
	Weight loss
Convulsions and seizures, coma	
Death	

Sources: Compiled from Weiss, 1983, 2000 (Bakir et al., 1973; Harada, 1995)