

# Mercury Hazard Widespread in Magico-Religious Practices in U.S.

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*People of Hispanic and Caribbean ethnicity use metallic mercury to ward off evil spirits by ingesting it, applying it to the skin, and wearing it in an amulet*

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I recently attended an extremely interesting scientific conference organized by the Southern States Mercury Task Force. This group of environmentalists, toxicologists, and scientists meet annually primarily to discuss the mercury hazard in many bodies of fresh water in the United States.

The conference was absolutely fascinating on this subject, and covered many aspects of potential health hazards for humans posed by mercury in marine animals and marine food sources. While the conference concentrated on this aspect of environmental science, I became sidetracked by an engrossing lecture delivered by Arnold P. Wendroff, PhD, a research associate at Brooklyn College in Brooklyn, NY.

Dr. Wendroff is a social scientist who was a career elementary school teacher in the New York City school system, working in a

facility primarily attended by Hispanic students. Dr. Wendroff said one day during a lesson about the periodic table, one young Hispanic student indicated that he was familiar with the symbol for mercury.

Dr. Wendroff asked the student if he knew mercury was used for, fully expecting him to say that mercury was used in thermometers. The student responded that his mother used mercury to ward

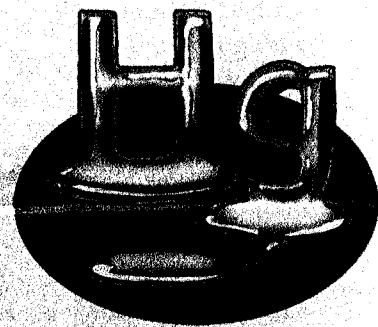
off evil spirits. This simple answer thrust Dr. Wendroff into the strange and unusual world of magico-religious practices and ceremonies and their associated potentially hazardous exposures. Because the student's answer baffled Dr. Wendroff, he asked the child to bring him some of the mercury, and the child complied. Dr. Wendroff began a local investigation that led to a most fascinating and important public health/toxicology discovery that I will describe in this special report.

**For Sale in 'Yerberias'**  
Elemental mercury — "azogue" as it is

## Magico-Religious Use of Metallic Mercury

- \* Used as a floor wash or cast directly onto floors to provide protection against evil spirits
- \* Sprinkled into automobile interiors for protection
- \* Ingested directly
- \* Applied to the skin or used in spiritual cleansing baths
- \* Placed in oil lamps or candles illuminated for protection
- \* Kept inside vials and worn as charms or amulets
- \* Used to provide love spells

Source: Michael I. Greenberg, MD, MPH



known in the Hispanic community or "vi dajan" in the Haitian community — is commonly found for sale over-the-counter in stores known as "botanicas" or "yerberias." These botanicas and yerberias are small, privately owned specialty shops, located primarily in Latino and U.S.-Caribbean communities, that stock and sell popular religious items as well as many items that are thought to provide healing/medicinal benefits. Within the Latino and Caribbean communities, some people practice ethno-religious rituals that are part of what is known as Santeria, Espiritismo, or Voodoo. Azogue, or mercury, often plays a very important role in these religious and ethno-medical rituals.

In the practice of Santeria, azogue is believed to give "resguardo" or protection or even provide "cantazo" or a "strike against the person." Espiritismo, also known as the "work of the dead," is part of a traditional healing ritual in which people maintain relationships with the "angel guardian" (guardian angel) and "gufas" (spirit guides). Mercury is integral in the ceremonial practice of these belief systems, and is apparently widely used in this

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See Report of EPA Superfund's 'Ritualistic Uses of Mercury Task Force' at [www.epa.gov/mercury/](http://www.epa.gov/mercury/) under 'Reports and Publications.' Also see the web site of the Mercury Poisoning Project [www.mercury-poisoningproject.org](http://www.mercury-poisoningproject.org)

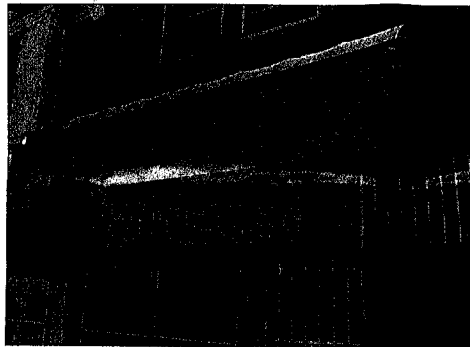
regard. The metallic mercury used by practitioners of these healing faiths is used in many different ways as listed in the table.

The uses of mercury in these magico-religious rituals are legion and appear to be widespread. In fact, a recent survey revealed that most U.S. cities with large Hispanic populations had functioning botanicas, and that the vast majority of these stores sold mercury over-the-counter. These sales are unregulated by local or state governments, and the product is unaccompanied by any significant cautionary information regarding the health hazards of mercury. In fact, many of the botanicas actually advocate the use of mercury in the most dangerous ways, usually resulting in aerosolization and creation of an inhalation hazard.

#### Total Mercury Sales

A 1996 report discovered that 35 botanicas in the Bronx, NY, had collectively sold more than 150 nine-gram units of mercury per day. This would represent total mer-

grossly elevated levels of mercury were reportedly found in her breast milk, thus posing a compound hazard to mother and child.



**Elemental mercury — "azogue" as it is known in the Hispanic community or "vi dajan" in the Haitian community — is commonly found for sale over-the-counter in stores known as "botanicas" or "yerberias," such as the one shown here.**

The magico-religious uses of mercury really tell a story of toxic potential rather than a story of specific and predictable toxicity. The fact is that the total potential that these sources of mercury pose is impossible to calculate or even estimate accurately. There are many important variables, and each locale where these practices occur may have specific threats germane to them.

It is clear, however, that the uncontrolled use of ceremonial mercury is widespread, not currently being evaluated effectively, and is certainly not well appreciated. In fact, a recent search of the Internet revealed numerous

"cyber-botanicas," all of which were advertising the sale of mercury. One Internet site advertised the unrestricted sale of azogue via mail for only \$18 per pound.

#### Medical Hazards

The medical hazards of aerosolized and inhaled mercury are well recognized and have been well described in the scientific literature. In fact, accidental mercury intoxication by entire families following inadvertent vacuuming of small amounts of spilled mercury is well known. What is not well known is the potential biological impact that large amounts of mercury dispersed within homes, cars, and directly onto individuals will pose.

If individuals live in a particular apartment and engage in such practices, the apartment or dwelling certainly will become contaminated with mercury. Subsequent inhabitants of these dwellings will never know they are facing the potential of continuing, potentially serious exposure to mercury.

Knowledge of the fact that mercury is being widely used by specific populations is critical information for emergency physicians. Specifically, chronic elemental mercury intoxication often presents

clinically with rather vague and non-specific findings such as fatigue and lethargy. In addition, tremor, visual difficulties, tachycardia, dermatographism, and gingivitis may also be seen.

A typical triad of symptoms of chronic elemental mercury intoxication includes excitability, tremor, and gingivitis. As in many environmental toxic exposures, the key to successful treatment, and, in fact, the first step in that treatment, involves identification of the source of exposure and its prompt removal.

The sorts of mercury exposures discussed in this report compel emergency physicians to be diligent and vigilant. The specific populations identified often

**If individuals engage in using mercury to ward off evil, their dwelling certainly will become contaminated with mercury**

**One Internet site advertises the unrestricted sale of mercury via mail for only \$18 per pound**

cury sales of more than 420 kilograms for these stores alone. Extrapolating this to the potential for environmental catastrophe and human health hazard, these numbers suggest that it is possible that more than 13,000 Bronx dwellings will have a mean weight of nine grams of mercury dispersed in them per year. Of course, the possibility does exist that fewer dwellings are contaminated but with even higher mercury burdens than reported.

In 1997, a report by the Chicago Department of Health revealed that 15 of 79 Hispanic adults interviewed in Chicago admitted to using mercury regularly for magico-religious purposes. In a non-published study, Dr. Clyde Johnson of the City University of New York discovered that 44 percent of adults of Caribbean descent and 27 percent of Hispanic ethnicity (n=203) indicated that they used mercury in their homes or carried it in their cars or on their person.

Shockingly, more than half of those interviewed indicated that they routinely disposed of mercury in their household garbage. One case of special interest involved a woman of Dominican descent who had been adding mercury to her cologne and applying the cologne to her skin daily. As a result of this practice,

present to inner city emergency departments. Practitioners in these areas are urged to explore the possibility that occult or overt mercury exposure may have occurred. Taking a careful history will require careful questioning, and in many cases will require careful language translation and interpretation.

Sensitivity to the fact that the exposures may be part and parcel of religious ceremonies will be essential. That these ceremonies are of special importance to the patient yet foreign to the physician may challenge the physician's history-taking skills. In any case, emergency physicians in any practice setting should be prepared to recognize the possible mani-

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festations of chronic elemental mercury exposure in ethno-religious ceremonies. In addition, emergency physicians may find themselves taking the lead in reporting environmental contaminations and exposures to local and state public health officials, and providing necessary educational information to patients who may be using mercury in this way. ■