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### Health Alert

*Please distribute this Health Alert to all clinical staff in primary care, dermatology, internal medicine, pediatrics, family practice, neurology, psychiatry, laboratory medicine, and emergency medicine. Attached is also a one-page fact sheet in English and Spanish for distribution to community members*

### Mercury Poisoning Linked to Use of Face Lightening Cream

The California Department of Public Health (CDPH) is investigating several cases of mercury poisoning due to an unlabeled face cream from Mexico used for lightening the skin, fading freckles and age spots, and treating acne. The cream contained very high levels of mercury: 56,000 parts per million (ppm) or 5.6%. The U.S. Food and Drug Administration allows only trace levels of mercury (less than 1 ppm) in face cream products.

Signs and symptoms of mild to moderate toxicity due to inorganic mercury may include nervousness and irritability, difficulty with concentration, headache, tremors, memory loss, depression, insomnia, weight loss, and fatigue. Other symptoms may include numbness or tingling in hands, feet, or around the lips. Renal effects include proteinuria, nephrotic syndrome, and renal tubular acidosis. Gingivitis and excessive salivation may also occur. In children, prolonged exposure to inorganic mercury may also cause acrodynia, irritability, anorexia, and poor muscle tone.

CDPH asks medical providers to alert their patients who may be using unlabeled, non-prescription face creams from Mexico for lightening the skin, fading freckles and age spots, and preventing acne that these products may be harmful to their health. Providers should urge their patients to immediately stop using any of these products.

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**Investigation Details**  
**May 19, 2010**

Several cases of mercury poisoning were identified when a 39-year-old Latino woman and her children participated in the National Health and Nutrition Examination Survey (NHANES) conducted by the Centers for Disease Control and Prevention (CDC). CDC analyzed the family's blood for multiple chemicals and found elevated levels of inorganic mercury. During the follow-up investigation, several family members were found to have elevated urinary mercury levels. The highest urinary mercury levels were in the woman (482 µg/L) and in the four-year-old child (107 µg/L). The woman's urine mercury level was over 100 times background levels, which are typically 0-4 µg/L.

A clinical evaluation showed that the woman experienced mild to moderate symptoms of mercury toxicity, including numbness and tingling in her hands and lips, dizziness, forgetfulness, headaches, depression, irritability, and anxiety. The four-year-old appeared to be developing normally with no clinical symptoms of mercury toxicity. The family remains under medical observation.

Further investigation revealed that the woman used an unlabeled, non-prescription face cream twice daily and her husband, a 39-year-old Latino, used the cream once a day. Both had been using the cream for about three years to fade freckles and age spots. The cream contained 5.6% or 56,000 ppm mercury. The U.S. Food and Drug Administration allows only trace levels of mercury (less than 1 ppm) in face cream products.

The face cream was produced by a layperson in either Jalisco or Michoacan, Mexico, and was carried into the U.S. by a relative of the person who used the cream. The cream was packaged in a four-ounce, white plastic jar with no label. Face cream jars obtained from affected individuals are pictured below:



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The index family has relatives in Virginia who have also been using face creams from the same source in Mexico. This investigation has also identified other individuals in California using similar skin lightening creams from Mexico. CDPH is collaborating with health officials in Virginia, and has alerted Mexican authorities as part of the ongoing health investigation.

Mercury-containing face creams and soaps have historically been imported to the U.S. from Mexico and the Dominican Republic. These were commercial products (with labels) and have been used for lightening skin, fading freckles and age spots, removing wrinkles, and treating acne. During an investigation in 1995-1996, 104 people in four states, including California, were found to have elevated levels of mercury ( $>20 \mu\text{g/L}$  in urine) from using a mercury-containing face cream product from Mexico. Also, mercury-containing germicidal soaps have been sold in the U.S. In some cases, “mercury,” “mercurio,” or “calomel” (mercurous chloride) has been listed on the label. These products may also be purchased from Mexico and possibly other countries by mail or via the internet.

Because unlabeled face creams for lightening skin, fading freckles and age spots, and preventing acne may contain mercury, CDPH recommends that unlabeled products should not be used. Also, any face cream or soap product that lists mercury in the ingredients should not be used. CDPH recommends that medical providers discuss the possibility of mercury exposure with patients who may be using these products, especially Spanish-speaking patients.

#### Mercury Absorption and Toxicity

The face creams that CDPH tested contained inorganic mercury. This is different from organic mercury (methylmercury), which is found in seafood. Inorganic mercury in face cream is absorbed following application to the skin and toxic levels in the body can develop gradually with prolonged use. The target organs for toxic effects are the central nervous system and kidneys. Most inorganic mercury is excreted in the urine. The biological half-life of inorganic mercury is approximately 30 – 60 days.

#### Signs and Symptoms of Inorganic Mercury Poisoning

Signs and symptoms of mild to moderate toxicity due to inorganic mercury may include nervousness and irritability, difficulty with concentration, headache, tremors, memory loss, depression, insomnia, weight loss, and fatigue. Other symptoms may include numbness or tingling in hands, feet, or around the lips. Toxic effects on the kidneys may cause proteinuria, nephrotic syndrome, and renal tubular acidosis. Gingivitis and excessive salivation may also be observed. In children, prolonged exposure to inorganic mercury may also cause acrodynia, irritability, anorexia, and poor muscle tone.

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Medical Testing

The most accurate method to confirm exposure to inorganic mercury is a urine test. A 24-hour collection is the most complete; however, a first morning void collected in an acid-washed container also yields accurate results. Background levels in urine are normally 0-4 µg/L. Symptoms are typically absent when urine levels are below 20 µg/L. Effects on the nervous system and renal function may be observed when urine levels are 100-500 µg/L.

Mercury may also be measured in whole blood. Background levels in blood are normally 0-5 µg/L. However, blood mercury levels are not an accurate indicator of inorganic mercury toxicity. Elevated blood mercury levels should be followed up with urine tests as described above. Renal function tests, including a urinalysis, creatinine, BUN, urine microglobulin, and microalbuminuria, should be assessed in individuals with elevated urine mercury levels.

Medical Treatment and Follow Up

Anyone using an unlabeled skin lightening cream from Mexico should stop using it immediately. Mild to moderate symptoms may resolve over two to six months without further therapy. However, in patients with mercury urine levels > 20 µg/L, testing for urinary mercury should be repeated every one to two months to confirm that levels are declining. For signs and symptoms of neurologic or renal impairment, chelation therapy may be considered. Chelation should only be performed in consultation with medical toxicologists with expertise in heavy metals.

Disposal

Any face cream product that is suspected to contain mercury must be disposed of as household hazardous waste. The face cream container should be labeled "contains mercury," placed in a sealed plastic bag, and disposed of at local household hazardous waste collection facilities. A listing of local household hazardous waste collection facilities can be found at the California Department of Toxic Substances Control website: <http://www.dtsc.ca.gov/HazardousWaste/UniversalWaste/HHW.cfm>.

For Further Information

Poison Control Center  
1-800-222-1222

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