



Iowa Statewide Poison Control Center

Partnership between Iowa Health System and University of Iowa Hospitals and Clinics

401 Douglas Street, Suite 402; Sioux City, IA 51101

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Children and Ethanol-Based Hand Sanitizers (EBHS)

There has been a recent spate of e-mails warning of the hazards of EBHS's. The Iowa Poison Center has received calls from 53 Iowans who have been exposed to EBHS's in the first five months of 2007. Many hand sanitizers contain 62% ethanol, and by comparison, most brands of hard liquor (whiskey, etc.) are 40-50% ethanol though a few are up to 75% ethanol. Many perfumes have high ethanol concentrations, ranging from 60% to 90%. EBHS's come in containers ranging from 0.5 to 32 ounces. Many "purse sized" EBHS's are from 2 to 6 ounces.

The main poisoning concern regarding EBHS is from people drinking these products. Ingestion of an EBHS can lead to ethanol intoxication and have all the same signs and symptoms of ethanol intoxication that results from drinking beer, wine or mixed drinks.

Some hand sanitizers use isopropyl alcohol instead of ethanol. These isopropyl hand sanitizers pose the same danger to children as the EBHS's.

How Much EBHS Is Too Much?

Dermal

A single lick of a hand sanitizer that has been spread on the hands is unlikely to cause intoxication or produce symptoms more than irritation of the mouth and tongue.

Ethanol intoxication by absorbing the ethanol through intact skin is highly unlikely. Repeated applications of EBHS to non-intact skin (i.e. psoriasis, burns, abrasions) can lead to absorption of ethanol. However, it is likely that the irritant effects of the EBHS would lead to stopping the application of the EBHS before a significant amount of ethanol could be absorbed.

Ingestion

If a typical 2 year old, weighing about 27 pounds, drank his mother's entire 2 ounce bottle of EBHS, he would have a *theoretical* blood ethanol level (BEL) of 445 mg/dL. The legal limit for driving drunk in Iowa is 80 mg/dL (0.08 g/dL). A single swallow of an EBHS in this child would produce a BEL of approximately 50mg/dL. Symptoms of ethanol intoxication in children can begin at a level of 50mg/dL.

The symptoms of ethanol intoxication in a child include irritability, dizziness, nausea, vomiting, unsteady gait, loss of muscle control, and sleepiness. Severe ethanol intoxications can lead to coma, respiratory arrest and death. Children who are intoxicated with ethanol are particularly susceptible to dropping their blood sugar and can suffer the effects of low blood sugar (irritability, clouded thinking, seizure, coma, death).

Soap & Water versus Hand Sanitizers

Washing hands with soap and water for 20 seconds is the best way to remove dirt and germs from the hands and is preferred to the use of EBHS. However, EBHS are an excellent choice when there is no access to soap and water (such as field trips, etc.).

What To Do If My Child Drinks Some EBHS?

First is prevention: the same way a parent would not let their child play with a bottle of vodka or whiskey, they should not let their child play with an EBHS. EBHS should be kept out of reach of children in the same way that prescription drugs and other chemicals are.

If a child is exposed to an EBHS, call the **Iowa Poison Control Center at 1-800-222-1222**. Nurse specialists will assess the situation and provide medical treatment advice.