Alcohol-Based Sanitizers:

The Bad, Ugly and Dangerous Side

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Sanitizer Hazardous to Children
From David Emery,

Netlore Archive: Forwarded email cites danger of children licking or eating hand sanitizer, which contains a high percentage of alcohol and can cause accidental intoxication or alcohol poisoning John V., 14 May 2007:
Hand Sanitizer alcohol poisoning Ok. I don't know where to begin because the last 2 days of my·life have been such a blur. Yesterday, My youngest daughter Halle who is 4, was rushed to the emergancy room by her father for being severely lethargic and incoherent. He was called to her school by the school secretary for being "very VERY sick." He told me that when he arrived that Halle was barely sitting in the chair. She couldn't hold her own head up and when he looked into her eyes, she couldn't focus them.
He immediately called me after he scooped her up and rushed her to the ER. When we got there, they ran blood test after blood test and did x-rays, every test imaginable. Her white blood cell count was normal, nothing was out of the ordinary. The ER doctor told us that he had done everything that he could do so he was sending her to Saint Francis for further test. Right when we were leaving in the ambulance, her teacher had come to the ER and after questioning Halle's classmates, we found out that she had licked hand sanitizer off her hand. Hand sanitizer, of all things. But it makes sense. These days they have all kinds of differences scents and when you have a curious child, they are going to put all kinds of things in their mouths.
When we arrived at Saint Francis, we told the ER doctor there to check her blood alcohol level, which, yes we did get weird looks from it but they did it. The results were her blood alcohol level was 85% and this was 6 hours after we first took her. There is no telling what it would have been if we would have tested it at the first ER
Since then, her school and a few surrounding schools have taken this out of the classrooms of all the lower grade classes but what to stop middle and high schoolers too? After doing research off the internet, we have found out that it only takes 3 squirts of the stuff to be fatal in a toddler. For her blood alcohol level to be so high was to compare someone her size to drinking something 120 proof. So please PLEASE don't disregard this because I don't ever want anyone to go thru what my family and I have gone thru. Today was a little better but not much. Please send this to everyone you know that has children or are having children. It doesn't matter what age. I just want people to know the dangers of this.
Thank you
Lacey Butler and family
Comments: True. On May 14,2007, Fox23-TV in Tulsa reported that 4-year-old Halle Butler of Okmulgee, Oklahoma was hospitalized with symptoms of intoxication after ingesting a small amount of hand sanitizer in her pre-kindergarten classroom.
The product, which consists of 62% ethyl alcohol (more than most hard liquors), had been applied to the children's hands by their teacher just before lunchtime, but instead of rubbing it in, Halle licked it off her skin and essentially got drunk. She was fine once the alcohol had worked its way through her system, but the incident threw such a fright into parents and administrators alike that further use of the product was banned in the school.
I should note that the email contains one apparent factual error (or perhaps it's only a typo), namely that the Halle's blood alcohol level was measured at "85%" in the emergency room --an impossibly high percentage. The author probably intended to write ".085"

A similar mishap was reported last January in Minneapolis, where 2-year-old Sydney Moe ate some of the hand sanitizer gel her mother kept by the sink and was rushed to the emergency room with a blood alcohol concentration of .10 percent --legally drunk, by the statutes in most states. She, too, recovered quickly, but the Minnesota Poison Control Center warned that the high alcohol content of hand sanitizers and other common household products such as mouthwash and perfumes can pose a serious health threat to small children and should be kept out of their reach except under parental supervision. Some hand sanitizers contain isopropyl (rubbing) alcohol instead of ethyl alcohol, making them even more dangerous to ingest.

THURSDAY, AUGUST 9, 2007

Hand Sanitizer Dangers

An alcohol rub, also known as an alcohol gel" hand sanitizer or healthcare personnel hand wash is used as a supplement or alternative to hand washing with soap and water. The active ingredient in alcohol rubs may be isopropanol, ethanol, or (in Europe) propanol. A variety of preparations are available, including gels, foam and liquid solutions. Hand sanitizers containing alcohol are more effective at killing germs than soaps and do not dry out hands as much as soaps.

Uses

When hands are not visibly dirty, the Centers for Disease Control and Prevention considers alcohol hand sanitizers as an acceptable alternative to soap and water for hand hygiene.

Alcohol concentration must be above 60% for alcohol rubs to be effective in killing microbes.
Researchers at East Tennessee State University found that products with alcohol concentrations as low as 40% are available in American stores. The optimum alcohol concentration to kill germs is 70 to 95 %. Alcohol gels containing 62 v/v alcohol are less effective germ killers than alcohol rubs containing at least 70 wt/wt % alcohol. Alcohol rubs, containing two different germ killers (i.e. alcohol and benzalkonium chloride) are significantly more effective than alcohol alone. Most alcohol rub formulations include a moisturizer to keep hands from drying out.

Efficacy

Alcohol rubs kill many different kinds of bacteria, including antibiotic resistant bacteria and TB bacteria. Alcohol rubs inactivate many different kinds of viruses, including the flu virus and the common cold .virus. Alcohol rubs also kill fungus.

Not all pathogens are equally susceptible. Certain bacteria, especially the spore-forming gram positives (e.g. Clostridium difficile) are relatively resistant and remain biologically viable. During the Anthrax attacks on the United States Postal Service, authorities warned that alcohol hand rubs would not kill anthrax spores. In environments with high lipids or protein waste (such as food processing), the use of alcohol hand rubs alone may not be sufficient to ensure proper hand hygiene.

More recently, and in connection with side effects of alcohol-based products..-specifically dry/irritated hands after prolonged or ongoing use, alternatives to alcohol-based products have been introduced to the marketplace. One product manufactured in Canada and distributed worldwide is active ingredient is benzalkonium chloride, FDA-approved and proven to have the same germ-killing efficacy as alcohol-based products. Unlike alcohol-based products, this is hypoallergenic and used as an antiseptic.

Safety

Alcohol gel can catch fire, producing a dim blue flame. This is due to the flammable alcohol in the gel. Some hand sanitizer gels may not produce this effect due to a high concentration of water or moisturizing agents.

There have been numerous, but rare, instances where alcohol hand gels have been implicated in starting fires, including a case where static electricity ignited the gel. To minimize the risk of fire, users are instructed to rub their hands until dry, which indicates that the flammable alcohol has evaporated.

It has been also noted that if ingested it can cause alcohol poisoning in small children. In the US alone, there have been more than 12,000 cases of child-related alcohol-poisoning directly attributed to hand sanitizer products. This doesn't include the growing number of teen-related incidents during which teenagers have been known to 'guzzle' hand sanitizers in effort to get stoned/high. Go figure.

Alcohol-.Based Hand Sanitizer Concerns

DWELL TIMES

The length of time that the sanitizer stays in contact with the microbes is critical. Too short a time and there is no assurance that the microbes have been killed.

DRY CRACKING SKIN

The fact that alcohol based Hand Sanitizers can cause drying and cracking of skin can actually pose a greater threat by increasing the potential for receiving and transmitting microbes, bacteria and viruses.

ESCAPE ROUTE DANGER

The potential to have access and exit routes cut off in the event of a fire because there is a bottle of flammable Liquid in each doorway.

FIRE DANGER

There have been cases where smokers have used and alcohol based sanitizer and lit a cigarette only to ignite the balance of the sanitizer on their hands.

POISON DANGER

Residents in some facilities have been known to add hand sanitizer to drinks to get intoxicated (alcohol-based hand sanitizers are twice as potent as store bought liquor but is also extremely poisonous)

The Possible Dangers of Hand Sanitizers to Alcoholics

By Jennifer Eblin, published Sep 14, 2007

The invention of hand sanitizers was one of the best things to happen in personal hygiene in the last decade. It makes it easier to clean our hands, its portable, and it works the same way as soap and water. But, is it really a good substitute for good old fashioned soap and water? Most hand sanitizers are around 65% alcohol based, and the experts previously said that unless the solution was at least 60% alcohol, it wasn't worth the time to use it. Now however, some of the experts are changing their tune simply because of its high level of alcohol.

Hand sanitizers are a deadly combination for recovering alcoholics because of its high alcohol content. Much the same way alcoholics are told to find an alcohol-free mouthwash, they are now being told to stay away from hand sanitizers. Two cases in the last year involved men getting sick from drinking the sanitizer. In one case, a 49-year-old Maryland prison inmate drank a gallon sized bottle of sanitizer in the one night, and had to be rushed to the hospital. An alcoholic in Cincinnati was admitted to the hospital with chest pains after drinking hand sanitizer. He explained to hospital workers that the alcohol content in that was higher than in vodka.

Those that do still stick by the 60% position, are becoming increasingly concerned by the lower and lower levels available in most brand name hand sanitizers. Some of the more popular brands are clearly marked as having less than 40% alcohol in them, which is disturbing because it takes at least 60% to kill microbes and germs. That means if you are using one of those versions, it isn't killing anything, and doing little more than if you simply rubbed your hands together vigorously.

When thinking about replacing soap and water with a hand sanitizer, consider this: sanitizers absolutely do not work if there is anything on your hands. The sanitizer is not strong enough to cut through dirt, blood, or anything else you might have on your hands, so in cases like that you are advised to use soap and water first. Why wash your hands and then rub sanitizer on it? That's like adding an extra step to your daily routine.

The Dangers of Hand Sanitizers

Who would have thought that hand sanitizer could be dangerous? Hand sanitizer is used to kill germs on your hands. Many teachers and other people who work with small children have hand sanitizers readily available so they can help prevent the spread of germs that can make people sick. Sanitizing hands is a good way to prevent the spread of germs that can cause sickness. Now we find out that. if you ingest hand sanitizer it can make you ill.

Hand sanitizers are now considered dangerous for small children.

Children are naturally curious creatures. Children learn by touching, feeling, smelling and yes even tasting the world around them. We all learn by the things that surround us. When small children use hand sanitizers they want to taste the hand sanitizer. Hand sanitizers come in a variety of scents so they seem appealing to taste. It only takes a small amount of hand sanitizer to poison a small child. Hand sanitizer has high amounts of alcohol in it.

Children like to imitate the adults in their lives. They might see an adult take medication from a bottle. Or they may witness an adult drinking a light colored liquid that looks appealing to the child. Children are not experienced enough to know that some pretty liquids may be harmful to them. So when they see the pretty, light colored liquid of hand sanitizer they try tasting it thinking it will do them no harm.

A child who has had an overdose of hand sanitizer has symptoms like a drunken person. The child becomes lethargic and incoherent. Speech can become slurred and their balance will not be very good. If they get a big dose of hand sanitizer they can die.

Many homes have hand sanitizer in them. Many people think that hand sanitizer is safe. It is now being advised that homes that have small children should not have hand sanitizer in them. A child can easily get a hold of hand sanitizer and ingest some before anyone suspects it.

If you have small children or you work with small children you should not have hand sanitizer easily available. Maybe you may want to consider not having hand sanitizer at all. Maybe dealing with a few germs is better then making a child sick from hand sanitizer.

Tony CenicolafThe New York Times
FOR GENERAL USE Some sanitizers can be a good supplement to soap 'and water. Many such sanitizers -whether a brand name or a generic version -work well, and are increasingly found in hallway dispensers in hospitals, schools, day care centers and even atop the gangways of cruise ships as one more safeguard against the hand-to...mouth spread of disease. Several studies from such settings have shown that use of the alcohol-based rubs on hands that aren't visibly soiled seems particularly helpful in curbing the spread of bad stomach and intestinal bugs.
But a study published in this month's issue of the journal Emerging Infectious Diseases found that at least one brand of sanitizer found on store shelves, as well as some recipes for homemade versions circulating on Web sites about crafts or directed at parents, contain significantly less than the 60 percent minimum alcohol concentration that health officials deem necessary to kill most harmful bacteria and viruses.
"What this should say to the consumer is that they need to look carefully at the label before they buy any of these products," said Elaine Larson, professor of pharmaceutical and therapeutic research at Columbia's nursing school. "Check the bottle for active ingredients. It might say ethyl alcohol, ethanol, isopropanol or some other variation, and those are all fine. But make sure that whichever of those alcohols is listed, its concentration is between 60 and 95 percent. Less than that isn't enough."
Scott Reynolds, a specialist in infection control at the James H. Quillen Veterans Affairs Medical Center in Mountain Home, Tenn., discovered the problem inadvertently, in the course of giving a simple demonstration on the merits of hand washing to a friend's class of biology students at nearby East Tennessee State.
Mr. Reynolds had the students place their hands on agar plates of growth medium before and after one of several experimental conditions: rubbing their hands briskly under tap water; sudsing with hospital-grade soap and then rinsing with water; or rubbing their hands with a dollop of one of two types of alcohol-based hand sanitizer_ The sanitizers used were a foam version from the hospital that contained 62 percent ethanol, and a gel version Mr. Reynolds's wife bought at a local discount store.
The next day, much to Mr. Reynolds's surprise, the culture plates from hands doused and rubbed with the store-bought gel were covered with clumps of bacteria that had, in some cases, formed a visible outline of the student's handprint on the plate. Only when he flipped the bottle around to read the label on the back did Mr. Reynolds see that the gel's active ingredient was "40 percent ethyl alcohol." "Otherwise, it looked like all the rest you see in the store," he said. "Same price. Same claims. Same pump bottle."

In a more formal follow-up study, Mr. Reynolds and two colleagues replicated the results, and confirmed that the lack of sufficient alcohol was to blame. If anything, he said, the faulty gel seemed to mobilize the bacteria, spreading them around the hand instead of killing them.

Allison Aiello, an epidemiologist at the University of Michigan who has studied the use and relative effectiveness of alcohol-based gels and antibacterial soaps by consumers as well as hospital workers, said she wasn't surprised by Mr. Reynolds's results from the low-alcohol sanitizer, but she was concerned to read that such a product was on the market.

"I used to work in a virology lab," Dr. Aiello said, "and we knew -it has been known for decades -that an alcohol concentration under 60 percent won't kill the microbes. It's really frightening to think that there are products out there that contain levels lower than that."

Since 2002, officials at the Centers for Disease Control and Prevention have recommended that health care workers routinely use high quality alcohol-based gels instead of soap and water on their hands when moving from patient to patient -as long the worker's hands aren't visibly soiled.

Alcohol doesn't cut through grime well, so dirt, blood, feces or other body fluids or soil must be wiped or washed away first, if the alcohol in the sanitizer is to be effective. In such cases, hand washing with soap and water is advised.

How much goop should you use? Vigorously rub all sides of your hands with enough gel or foam to get them wet, and rub them together until they are dry. If your hands are dry within 10 or 15 seconds, according to the C.D.C. guidelines (a minimum of 60 seconds 'wet') for health care workers, you haven't used enough.

CDC's "Germstoppers" campaign uses low-brow language to teach complex hand washing skills

The Centers for Disease Control (CDC) in the United States has a new program called "Germstoppers." This program consists --in part --of a full-page brochure that various institutions --such as health clinics and hospitals --can paste in their windows. The "Germstoppers" brochure attempts to educate Americans on how to practice basic sanitation and personal hygiene. What's amusing about this program, however, is how it has become necessary to water down the use of vocabulary in order to make the brochure understandable by your average American citizen.

For example, one of the concepts that the CDC wishes to get across in this brochure is that people should wash their hands with great frequency. Apparently, the word “frequency" is a little too complex for the average American citizen, and thus, the CDC chose to replace the word "frequency" with the two-word phrase, "A lot."

Now, the brochure says, "Wash your hands a lot," which sounds like something a middle-school teenager might say --but not something that should come from the Centers for Disease Control. Why not just replace the word "frequency" with the word "tons," because that seems to be a more common word with the undereducated American public? "Wash your hands tons!"