

CDC report calls attention to hand sanitizer risk in children

Hand sanitizers are everywhere. They are cheap, effective disinfectants, and many are easy to carry around. But lately, these products have been scrutinized for the potential harm they can have on children.

"Many caregivers are unaware of the very high alcohol content present in alcohol-based hand sanitizers, which can contain up to 60% to 95% alcohol," said Cynthia Santos, MD, from CDC's National Center for Environmental Health. "Young children may inadvertently consume these hand sanitizers because of their appealing scents, like apple, vanilla, and citrus."

In a new report from CDC,¹ researchers analyzed data reported to the National Poison Data System (NPDS) from 2011–14 on exposures to alcohol- and non-alcohol-based hand sanitizers in children who were 12 years old or younger. A total of 70,669 hand sanitizer exposures in this age group were reported to NPDS, including 65,293 (92%) alcohol-based exposures and 5,376 (8%) non-alcohol-based exposures. Adverse health effects were more likely to be reported for alcohol-based hand sanitizer exposures, and they tended to be worse than those for non-alcohol-based hand sanitizer exposures.

"Younger kids are more susceptible to adverse effects [from these products] because there is not as much glycogen in their liver," said Greene Shepherd, PharmD, clinical professor at the University of North Carolina Eshelman School of Pharmacy.

The most common type of adverse health effects for both alcohol- and non-alcohol-based hand sanitizers were ocular irritation, vomiting, conjunctivitis, oral irritation, cough, and abdominal pain. Rare effects included coma, seizure, hypoglycemia, metabolic acidosis, and respiratory depression.

Differences in age groups

The researchers stratified the NPDS data into two age groups: 0 to 5 years and 6 to 12 years. They looked only at exposures to ethanol-based sanitizers, isopropanol-based sanitizers, and non-alcohol-

based sanitizers—no NPDS reported calls about co-exposures to other agents were included in the analysis.

Most exposures—91%—occurred in children aged 5 years or younger. Children aged 6 to 12 years had more intentional exposures, a finding the



report authors said could indicate that these products are being abused among older children. Shepherd said that abuse of alcohol-based hand sanitizers can be equivalent to consuming roughly 120-proof liquor.

Recommended hand hygiene method

Health care providers, including pharmacists, should inform patients, parents, and caregivers of the potential dangers associated with alcohol-based hand sanitizers. The report stated that alcohol-based hand sanitizers should be used under adult supervision with proper child safety precautions and stored out of reach of young children to reduce unintended, adverse consequences.

Besides emphasizing the knowledge health care providers can pass along about safety precautions, the report authors took the opportunity to recommend washing hands with soap and water when available, which is currently the recommended method of hand hygiene in non-health-care settings. If soap and water are not available, use of a hand sanitizer that contains at least 60% alcohol is recommended, or a non-alcohol-based hand sanitizer or wipe can be used.

FDA made the same recommendation about using soap and water (in a non-health-care setting) in 2016 when it banned 19 active ingredients in antibacterial soaps and body washes, including triclosan and triclocarban—the two most commonly used ingredients.

Most exposures—91%—occurred in children aged 5 years or younger. Children aged 6 to 12 years had more intentional exposures, which could indicate that these products are being abused among older children.

In an article *Pharmacy Today* published about the announcement, an FDA spokesperson said that emerging research showed that some antibacterial ingredients could pose health risks in people.

"Short-term animal studies suggest that daily exposure to high doses of triclosan resulted in decreases in some thyroid hormone levels, the significance of which in humans is currently unknown," she said.

The FDA ban does not apply to hand sanitizers, hand wipes, or antibacterial soaps used in a health care setting.

Reference

1. MMWR Morb Mortal Wkly Rep. 2017. doi: <http://dx.doi.org/10.15585/mmwr.mm6608a5>

Loren Bonner, senior editor

www.pharmacytoday.org