Lead and Chromium Poisoning Outbreak Linked to Cinnamon Applesauce Pouches

Apple Cinnamon Fruit Puree Pouches & Cinnamon Apple Sauce

The Centers for Disease Control and Prevention (CDC), Food and Drug Administration (FDA), and state and local partners are investigating a link between blood lead levels (BLLs) ≥3.5 µg/dL in children consuming certain cinnamon-containing apple purée and applesauce products.

Update

FDA product testing has also identified high levels of chromium, in addition to lead, in cinnamon samples and recalled applesauce pouch products. (Go **here** for a list of affected products.)

Potential Health Effects

Consumers should be aware of these elevated levels of chromium and lead found in the cinnamon applesauce pouches and the potential for adverse health effects.

Chromium is a naturally occurring element with trace levels normally found in the diet. The most common forms of chromium found in chromium compounds are trivalent chromium [chromium (III)] and hexavalent chromium [chromium (VI)]. Chromium (III) is considered an essential nutrient and can be found in a normal diet and in some dietary supplements. Chronic, prolonged exposure to chromium (VI) in occupational settings through inhalation and skin exposure has also been associated with chronic lung disease and ulceration of skin and mucous membranes. Chromium (VI) is a known carcinogen. The exact form of chromium in the recalled applesauce products is unclear. However, lead chromate has previously been reported as a contaminant in spices and foods.

There is limited information about health effects from consuming food contaminated with chromium compounds such as lead chromate. The main health problems seen in laboratory animals following ingestion of chromium (VI) compounds are irritation and ulcers (in the stomach and small intestine) and anemia.

However, the health effects of eating food contaminated with chromium (VI), in the form of lead chromate, are not well understood. Chromium (VI) compounds may be converted to chromium (III) in acidic environments. It is difficult to predict the amount of chromium (VI) and chromium (III) absorbed from ingestion of contaminated food.

While the health effects of chromium are difficult to predict in this scenario, we know that there is no safe level of lead. CDC recommends discarding all affected products and not eating any of them. Anyone who may have eaten the affected products should talk with their healthcare provider.

What can I do?

Do not eat cinnamon-containing apple purée or applesauce products included in the FDA recall announcements. Anyone who may have eaten the affected products should talk with their healthcare provider. Medical treatment for chromium exposure focuses on treating symptoms. There is no specific antidote to treat chromium exposure and there is no evidence to support the use of chelation therapy.

Additionally, if you suspect that you or your child may have been exposed to lead, **you should talk to your healthcare provider about getting a blood lead test.** Healthcare providers and most local health departments can test for lead in the blood. Many private insurance policies cover the cost of testing for lead in the blood. The cost of blood lead testing for children enrolled in Medicaid is covered by the Centers for Medicare & Medicaid Services.

More Information

Information about FDA's investigation, with current updates, can be found on the FDA website, Investigation of Elevated Lead Levels: Cinnamon Applesauce Pouches (November 2023) | FDA.

For more information on chromium, ToxFAQsTM for Chromium

Information for Clinicians can be found on the COCA Now webpage, Update on High Blood Lead Levels in Children Consuming Recalled Cinnamon Applesauce Pouches and Potential Chromium Exposure

Fast Facts

Data updated on January 5, 2024.

CDC has received the following reports from state and local health departments:

- Total Cases: 321
  - Confirmed Cases: 86
  - Probable Cases: 209
  - Suspect Cases: 26
- States: **(38 total)** AL, AR, CA, CO, FL, GA, IA, ID, IL, IN, KS, KY, LA, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NY, OH, OK, OR, PA, RI, TN, TX, VA, VT, WA, WI, WV
- Recall: Yes
- Investigation status: Active

Cases are reported to the CDC through state health departments. State health departments receive reports of potential cases from various sources, and then follow up to determine whether the case definition is met. In order to be considered in CDC's case count, the person must have had a blood lead level of 3.5 ug/dL or higher measured within 3 months after consuming a recalled WanaBana, Schnucks, or Weis brand fruit purée product after November 2022. Based on the amount of information available, CDC asks states to further classify cases as "suspect", "probable", and "confirmed". As the investigation progresses, cases might be assigned to different case categories.

What You Should Do

- **Do not eat any recalled apple cinnamon fruit puree pouches**. Throw them away or return them to where you bought them.
- **Call your healthcare provider** about getting a blood test for lead if you or your children may have consumed recalled products.

What Businesses Should Do

- **Do not sell or serve recalled apple cinnamon fruit puree pouches.**
- **To properly discard the product**, retailers should carefully open the pouch and empty the content into a trash can before discarding the packaging to prevent others from salvaging recalled products from the trash.
- **Clean up any spills after discarding the product,** and then wash your hands.

CDC Case Definition

CDC asks states to classify cases as “suspect,” “probable,” or “confirmed” based on several factors. CDC accepts the state’s classification.

CDC defines a person with a “suspect” case as anyone with a blood lead level of 3.5 µg/dL or higher detected through **capillary or unspecified testing** (not yet confirmed through venous blood testing) within three months of consuming a recalled product. Capillary and venous testing are both commonly used to test blood for lead levels. However, capillary testing might give a falsely high result. Venous testing is more accurate.

CDC defines a person with a “probable” case as anyone with a blood lead level of 3.5 µg/dL or higher detected through **venous testing** within three months of consuming a recalled product. People with a “probable” case:

- might not have had a follow-up assessment to rule out other potential sources of lead exposure or
- might have had a follow-up assessment completed, but the results indicated there were other potential sources of lead exposure (for example., lead-based paint).

CDC defines a person with a “confirmed case” as anyone with a blood lead level of 3.5 µg/dL or higher:

- Detected through **venous testing** within three months of consuming a recalled product and
- **must** have had a follow-up assessment that ruled out other potential sources as the likely cause of lead exposure.

Please note that as the investigation progresses, cases might move to different case categories. For example, a state may initially classify a case as “suspect,” but later determine that the case meets the criteria for being a “confirmed” case. In addition, these simplified definitions might not capture all the nuances of the case definition. We ask that states use our official case definition when classifying cases submitted to CDC. For more information, see CDC’s Lead and Chromium Poisoning Outbreak Linked to Cinnamon Applesauce Pouches – Case Definition.

Please note that CDC and FDA have different data sources, so the counts reported by each agency might not match. In addition, some people who were affected by the contaminated product might be counted in numbers reported by both FDA and CDC, so the numbers should not be added together. FDA relies on self-reported information submitted by healthcare providers, consumers, and some state partners who submitted an adverse event report to FDA. The reports were submitted as an initial step in determining if a product is a potential shared source of exposure amongst complainants.

Symptoms of Lead Exposure

Children with lead exposure may have no apparent acute symptoms. However, even low levels of lead have been associated with learning and behavior problems, hearing and speech problems, and slowed growth and development. This can show up as lower IQ, decreased ability to pay attention, and underperformance in school. Children who are exposed to large amounts of lead may develop symptoms of acute lead poisoning, including

- Abdominal pain, constipation, and nausea
- Anemia
- Weakness and fatigue
- Severe neurological symptoms (including seizures, encephalopathy, and coma)

If parents suspect that a child may have been exposed to lead, they should talk to their child’s healthcare provider about getting a blood lead test. Healthcare providers and most local health departments can test for lead in the blood. Many private insurance policies cover the cost of testing for lead in the blood. The cost of blood lead testing for children enrolled in Medicaid is covered by the Centers for Medicare & Medicaid Services.

The health effects of exposure are more harmful to children less than six years of age because their bodies are still developing and growing rapidly. Young children also tend to put their hands or other objects, which may be contaminated with lead dust, into their mouths, so they are more likely to be exposed to lead than older children.

See Also

- FDA: Investigation of Elevated Lead Levels: Cinnamon Applesauce Pouches (November 2023)
- FDA: WanaBana Recalls WanaBana, Weis, and Schnucks Apple Cinnamon Fruit Purée Pouches & Cinnamon Apple Sauce Due to Elevated Lead Levels
- HAN: High Blood Lead Levels in Children Consuming Recalled Cinnamon Applesauce Pouches

Last Reviewed: January 9, 2024