



TOXTALKS

A BULLETIN FOR HEALTHCARE PROFESSIONALS WHO MANAGE POISONED PATIENTS

Blue Ridge Poison Center

University of Virginia Health

December 2022

Holiday Hazards

With the holiday season in full swing, December is a great time to review unique toxic items that may be encountered this time of year. While most are of low toxicity, this article discusses possible clinical effects from these items.

Bubble lights

While less common today, bubble lights were originally produced in the 1940s and consist of a light bulb with a sealed glass tube that bubbles when heated. The sealed tube contains a hydrocarbon called methylene chloride, which, due to its low boiling point, allows the liquid to bubble at lower temperatures. If the liquid is ingested, there is danger of aspiration leading to hydrocarbon pneumonitis. Methylene chloride is metabolized to carbon monoxide in the body, however the amount in a single bulb is not enough to cause significant toxicity.

Tinsel

Tinsel or lametta has been used to emulate icicles on Christmas trees since the 1600s. Initially made of silver, other metals including tin, copper, antimony, aluminum, and lead have also been used. Lead was popular because it did not tarnish like silver and it hung heavier on branches. As the dangers of lead exposure to children became apparent, the FDA banned production of lead tinsel in 1971 and banned its import in 1972. Today, tinsel is made from PVC and coated with a metal finish. While tinsel may represent a choking hazard for small children, there are no reports of tinsel toxicity in humans. There is a single case report of a dog developing zinc toxicity from ingestion of tinsel.

Artificial Trees

Older artificial Christmas trees containing PVC needles or branches used lead as a stabilizer. A study performed in 2004 examining the lead content of various brands and ages of artificial trees showed that lead content was higher in older trees, however all trees tested shed lead dust over a 4 week period. The highest amounts were seen in trees greater than 10 years old. While not enough lead was found to cause acute toxicity, the numbers were high

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enough to raise public health concern. PVC in artificial trees made today utilize less toxic metals as a stabilizers.

Vintage décor

Vintage ornaments, figurines, or toys that are family heirlooms or thrift store finds may contain lead paint. The use of lead paint in consumer products was banned in the US in 1978 but may still be present in products from other countries. Crystal glassware is also a potential source of lead. Leaded crystal contains 24-32% lead oxide which leaches out of the crystal more quickly in the presence of acidic beverages (soda, wine, orange juice, etc). While use during a holiday meal is unlikely to cause any issues, consistent use of crystal should be avoided.

Nutmeg

An essential addition to any eggnog, nutmeg can be toxic if ingested in large doses. It contains myristicin, elemicin, and safrole which are psychoactive compounds thought to exhibit weak monoamine oxidase inhibition and serotonergic activity. Ingestion of large amounts of nutmeg can lead to nausea, vomiting, tachycardia, delirium, and hallucinations. Treatment is supportive.

Poinsettia

Poinsettia (*Euphorbia pulcherrima*) was introduced to the United States in the 1820s by Joel R. Poinsett, the American ambassador to Mexico. Known as the “Christmas star” or “Christmas flower,” it gained popularity as a decorative Christmas plant shortly after its introduction. The plant produces a sap that can produce local skin irritation and dermatitis. Large ingestions can lead to nausea, vomiting, and abdominal cramping. Poinsettias have been unfairly associated with severe toxicity stemming from a single isolated case report of a fatality involving a 2 year old child in Hawaii in 1919. A retrospective review of American Poison Center data evaluated 22,793 poinsettia exposures between 1985 and 1992 and found no fatalities. The vast majority of ingestions (92.4%) did not develop any toxicity, most involved children under 5 (90.6%), and almost all were accidental (98.9%). The majority of cases of exposure can be managed at home by washing the affected area of skin to prevent dermatitis.

Holly

American Holly (*Ilex opaca*) and English Holly (*Ilex aquifolium*) are another common sight around the holidays. The leaves, while sharp, are non-toxic. Holly berries contain a mixture of alkaloids, saponins, steroids, polyphenols, and triterpenoids. Saponins are the toxic component and can lead to GI distress if a sufficient number of berries are consumed (around 20-30 berries for adults, 5 for children). Most cases will be asymptomatic. In cases of severe vomiting, antiemetics, fluid hydration, and repletion of electrolytes are the mainstays of treatment.

Mistletoe

American mistletoe (*Phoradendron leucarpum*) is native to North America and is used as a decoration in place of European mistletoe (*Viscum album*) which started the holiday tradition. European mistletoe has been associated with cases of severe toxicity and this reputation has been transferred to American mistletoe undeservingly. American mistletoe contains phoratoxin and ligatoxin, both GI irritants leading to

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nausea, vomiting, and diarrhea if enough is ingested. A retrospective review using poison center data evaluated 1754 American mistletoe exposures between 1985 and 1992 and found no fatalities. The majority (94.7%) were asymptomatic, most involved children (92.1%), and almost all were accidental (95.4%). In another review of 92 cases, only 11 developed symptoms. Of these 1 developed ataxia and 1 had a seizure. There is one reported death in the literature following ingestion of a concentrated tea brewed from berries intended as an abortifacient. Treatment for mistletoe ingestion is supportive. Antiemetics, electrolyte repletion, and IV fluids can be considered in cases of severe GI distress.

While most of these holiday ingestions are benign, the University of Virginia's Blue Ridge Poison Center is always available for guidance with managing these exposures. Please contact us at 1-800-222-1222 or use our dedicated healthcare provider hotline 1-800-451-1428. Happy Holidays!

