Hazards in Art and Craft Materials

“Every child is an artist. The problem is how to remain an artist once we grow up.” ~Pablo Picasso

Art classes allow children to express themselves, use their imagination, build self-esteem, practice critical thinking skills, and develop coordination. Through career or hobby, many adults continue making art or crafts beyond their school days. Many art and craft products are chemicals, and like all chemicals could cause harm. In the past 3 years, the Blue Ridge Poison Center (BRPC) received nearly 800 calls about exposure to art and crafts materials. Most cases resulted in minor or no health effects. Several, however, were more serious and required medical attention. Some examples:

- **A 3-year old child drank the ink from a broken gel pen, and then began vomiting.**
- **A toddler ate two 5 oz. cans of modeling dough, which put him at risk for sodium (salt) poisoning. The BRPC referred the child to an emergency health care facility for monitoring and treatment.**
- **A woman complained of painful, difficult breathing after using spray paint in a poorly-ventilated room.**

Preschool and elementary grade children are at risk for exposure to art materials because they may be tempted to taste or eat products; particularly products that are

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Holiday Safety Tips for Families with Children

The Blue Ridge Poison Center receives more calls about children under the age of 6 than any other age group. The holidays are particularly full of opportunities for young children to encounter poisons. Children act fast! Adults and caregivers make mistakes when they are distracted from their normal routine. Plan ahead to protect loved ones with the safety tips on the next page:

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POISON TRIVIA

As a caterpillar, this insect only eats poisonous milkweed leaves. The poisons are stored in its body even into adulthood. This causes it to taste terrible to predators, and protects it from being eaten. What is this insect?

Answer on page 3
Provide guests with a safe place to store purses, suitcases, and toiletries.

Guests bring prescription medicines, over-the-counter medicines, and personal products like mouthwash, eye drops, or cologne into your home. They may leave them in easy-to-reach places like a suit case, the bathroom counter, or on a bedside table. Many of these items can be harmful to a child if swallowed or handled. Studies show that nearly 25% of childhood poisonings are the result of little ones getting into their grandparents’ medicines. Pills look just like candy to children.

Don’t leave alcoholic beverages unattended.

Be sure that glasses containing alcoholic beverages are emptied and rinsed immediately after use. Store alcohol in a locked cabinet out of the sight and reach of children. Even a small amount of alcohol can be deadly to a child.

Stay alert to toy recalls

The U.S. Consumer Product Safety Commission continues to discover toys in our stores that contain unsafe amounts of lead, cadmium, or other substances which could be harmful if sucked or swallowed. Small children who frequently put things in their mouth should not be allowed to wear or play with toy or “costume” jewelry. Products made in China are particularly suspect. Sign up to receive free notice of all toy recalls: www.cpsc.gov.

Keep plants away from very young children

Babies & toddlers are attracted to colorful berries and soft leaves. Poinsettias were once thought to be toxic but are now widely accepted as non-toxic. However, like any plant, they could pose a choking hazard or irritation to the mouth and throat. Holiday plants such as mistletoe, holly berries, bulbs (such as paperwhites), or Jerusalem Cherry could be toxic if swallowed. A more complete list of toxic indoor or outdoor plants can be found on the Blue Ridge Poison Center’s website: www.brpc.virginia.edu. Choose “The Learning Center” from the top menu bar, then choose “Fact Sheets” and locate the one titled “Plants.”

Beware of Button Batteries

These tiny, flat, coin-like batteries are commonly used in watches, cameras, hearing aids, games and toys. If swallowed, they could stick in the throat or esophagus, causing serious life-threatening burns. Be prepared!

Keep the Blue Ridge Poison Center’s toll-free number near every phone.

Medical experts are standing by 24 hours a day, even on holidays and weekends, to offer free & confidential advice and information. Most of the time, callers can be guided to treat a poisoning at home, without a costly trip to the doctor. Don’t wait for symptoms to develop. Call 1-800-222-1222 right away. Don’t guess...be sure!

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**News and Notes**

NEW! The Blue Ridge Poison Center has a Facebook page. Follow us to get timely tips and information about poisons in the news and poisoning prevention advice. Type ‘Blue Ridge Poison Center’ into Facebook’s search bar.

Blue Ridge Poison Center toxicology fellow, Dr. Justin Rizer, presents his research on essential oil poisoning in children at the North American Congress of Clinical Toxicology in Vancouver, Canada. We are more than just a call center! Many of our staff engage in research and publishing.

The FDA estimates that about 1.3 million people are injured by medication errors in the U.S. each year. Some people end up taking the wrong dose of a medication or the wrong pill. Sometimes, they don't wait long enough before taking a second dose. Other times, a health professional may be at fault. A pharmacist might have accidentally dispensed a medication at the wrong concentration, for example.

These kinds of mistakes are on the rise, according to a study published Monday in the journal Clinical Toxicology. Which drugs are most frequently tied to errors at home? Cardiovascular medications are at the top. Read more: http://n.pr/2hlhKoM
brightly colored, that smell good, or are being stored in dishes normally used for food and drink. Young children are especially susceptible to chemical exposures because their bodies are smaller and their nervous systems and organs are still developing.

Older children may engage in horseplay or exercise poor judgment in handling art and craft products, which can lead to accidental exposure. They may also be at risk for abusing products for purposes of getting “high” or causing harm to themselves. Many paints, glues, and solvents used in creating art projects are popular substances of inhalant abuse.

Other people at high risk for exposure include those with visual or hearing problems, physical disabilities, cognitive disabilities, and asthma.

Read your product labels! Accurate knowledge of art materials and their potential hazards can help assure a safe studio, home, and classroom. In addition to any safety information offered on product labels, here are some general guidelines for using art and craft materials safely:

- Supervise children closely when using art materials.
- Limit exposure by providing access to the smallest amount necessary. Example: teachers should pour paint or glue into smaller single-use containers.
- Don’t eat, drink, smoke, or apply make-up near art materials.
- Store all products in original, labeled containers.
- Store all products in a locked cabinet when not in use, out of the sight and reach of children.
- Keep a tidy, well-ventilated, and well-lit studio.
- Wash hands after handling products.
- Discard any expired or unwanted materials according to the label’s instructions.

- Keep the toll free Poison Helpline number nearby. Call right away if you suspect exposure to art materials. Don’t wait for symptoms. 1-800-222-1222.

Art Materials and The Law

In 1988 Congress passed the Labeling of Hazardous Art Materials Act (LHAMA), which required manufacturers to have all products evaluated by a toxicologist to determine any potential harmful health effects. Products must be evaluated for harm from single exposures as well as repeated, long term exposure.

According to LHAMA, if a product presents any health hazards, it may not be used by children in grade 6 or below. Also, the manufacturer MUST:

☑ State all health risks on the label.
☑ List all hazardous ingredients.
☑ Provide instructions for safe use; including clean up, storage, and disposal.
☑ State “not suitable for children in grade 6 and below” on the label.

Regardless of any potential health hazards, all labels must verify their adherence to the law with the words “Conforms to ASTM [American Society for Testing and Materials] D4236” or similar statement. One of the following seals usually accompanies the statement: the AP ‘Approved Product’ seal for non-toxic products, or the CL ‘Cautionary’ seal for those with potential health hazards.

There are some limitations to the 1988 LHAMA Act. Products do not have to comply with the labeling requirements if they are not intended for sale to schools or for use by children. Examples include industrial or commercial products like house paint, certain ceramic materials, or silk screen printing inks. Furthermore, the risk of injury from exposure to art
The table below presents some of the hazards associated with commonly used arts and craft materials. It is adapted from *Artist Beware: Updated and Revised* by Dr. Michael McCann (The Lyons Press, 2005), an excellent source for more detailed information.

<table>
<thead>
<tr>
<th>MEDIA</th>
<th>Potential Hazards</th>
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<tbody>
<tr>
<td>Airbrush and spray painting</td>
<td>Airborne droplets may contain toxic pigments, solvents, or propellants which can remain suspended in a poorly-ventilated room for hours.</td>
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<tr>
<td>Ceramics</td>
<td>Handling wet clay is not a poisoning risk. However, mixing powdered clay with water can lead to inhaling large amounts of dust containing silica, talc, or asbestos. Sanding dry, unfired pieces may also create dust. “Raw” glazes may contain various metals or metal oxides (including arsenic, cadmium, copper, barium, or lead) and other compounds like solvents, silica, or soda ash, which are dangerous to swallow or breathe. Only lead-free glazes should be used by students. Lead glazes on dishes can leach lead into food or beverages. Kiln firing can produce highly toxic gases like chlorine, fluorine, sulfur dioxide, ozone, metal fumes, and carbon monoxide.</td>
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<tr>
<td>Glues and Adhesives</td>
<td>GROUP 1: water-based adhesives such as basic craft glue, homemade flour and water pastes, or animal-based glues. These are relatively nontoxic, and the only glues recommended for young children.                                                                                      GROUP 2: organic solvent-based adhesives, including rubber cement and modeling glue. These may be toxic by inhalation or ingestion.                                                                 GROUP 3: adhesives which depend on chemical reactions between two compounds that are mixed. Includes epoxy glues, polyurethanes, and “instant” glues. These may be toxic by inhalation or ingestion.</td>
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<tr>
<td>Spray fixative</td>
<td>Often contains solvents, notably n-hexane</td>
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<td>Markers, inks</td>
<td>“Permanent” solvent-based markers and inks may contain toluene, xylene, or alcohols, and may be toxic through inhalation or through the skin, particularly in high concentrations. Water-based markers and inks, including gel pens, are generally non-toxic. However, some people are concerned that scented markers encourage children to sniff and taste art materials. Teachers should use their discretion.</td>
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<td>Paint, water-based</td>
<td>Some pigments may contain toxic inorganic compounds of lead, cadmium, manganese, mercury, cobalt, or chrome. Grinding pigments, or mixing from a powder, presents a risk of inhalation exposure. Some paints may contain trace amounts of ammonia, formaldehyde, or other preservatives</td>
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<tr>
<td>Paint, oil-based</td>
<td>Some pigments may contain toxic inorganic compounds of lead, cadmium, manganese, mercury, cobalt, or chrome. Solvents like turpentine and mineral spirits are often required as thinners or for clean up.</td>
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<tr>
<td>Paint, commercial</td>
<td>Paints designed for signs, cars, houses, or other industrial uses may contain lead compounds, toluene, xylene, or other dangerous compounds.</td>
</tr>
<tr>
<td>Pastels</td>
<td>Pigments may contain compounds of lead, cadmium, mercury, manganese, and chrome. Pastels create a lot of dust. The risk of inhalation exposure increases when artists “blow off” excess dust from their artwork.</td>
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<tr>
<td>Photography</td>
<td>There is a wide variety of photochemicals (too numerous to mention here). Many are toxic through ingestion, skin contact, or inhalation. Darkrooms should be well ventilated, and chemical baths should remain covered when not in use. Fatalities have been reported from accidental drinking of concentrated developer; keep all photochemicals in labeled containers out of the reach of children.</td>
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<tr>
<td>Product &amp; Carving</td>
<td>Plaster molding &amp; carving</td>
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<td>Powdered mixes may create airborne dusts of calcium compounds, silica, potassium compounds, borax, and vermiculite. Read the label: some plasters are not suited for use on body parts and will burn the skin.</td>
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</table>

| Printmaking (lithography, screen printing, etc.) | Printmaking inks can be water-based, solvent-based, or oil-based. All may use pigments which may contain toxic inorganic compounds of lead, cadmium, manganese, mercury, cobalt, or chrome. Some inks may contain trace amounts of solvents, preservatives, benzene, oil of cloves (which slows drying), or other toxic compounds. Solvents are commonly used for clean up. Some printmaking involves the use of acids, such as hydrofluoric acid, to etch an image onto the medium. Using solvent-based inks may expose users to high amounts of vapors, during the printing and also the drying process. |

| Sculpture (stone) | Stones create dust when sanded, which may contain large amounts of silica. Examples: sandstone, soapstone, and slate. Some soapstones may contain asbestos. |

| Stained glass | The metal used to wrap around individual pieces of glass—and the solder used to bind them together—often contain lead. |

| Varnishes and lacquers | Varnishes and lacquers are made of resins dissolved in volatile solvents such as turpentine, methyl alcohol, acetone, toluene, or petroleum distillates. |

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and craft materials depends on many factors. Even relatively non-toxic items could pose danger under certain conditions. Some factors which may affect risk of injury include:

- **Product ingredients**—Example: one swallow of water-based tempera paint may not cause any health effects, but one swallow of oil-based artist paint may contain a dangerous amount of lead.

- **Amount or concentration**—Example: inhaling the scent of an ink marker while using it in a well ventilated room usually causes no problems. However, concentrating the fume in a baggie and inhaling it with the intent of getting ‘high’ could be deadly.

- **Frequency and duration of exposure**—Example: a single accidental taste of a brush cleaning solvent may not cause injury, but a habit of using your mouth to form your paintbrush bristles into a point every time you dip the brush into the cleaning solution may cause health effects over time.

- **Route of exposure**—many products may be safe to spill onto your skin, but dangerous to swallow (or vice versa).

A final note of caution: Some products manufactured in countries with less strict laws may not be properly tested or labeled. For example: certain brands of sidewalk chalk and crayons, both made in China, were found to contain harmful amounts of lead. These items have since been recalled from U.S. stores.

Poison Safety Tips & More! Follow us on Twitter @blueridgepoison or find us on Facebook

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