



Disclosures

- I have no real or potential conflicts of interest to disclose

Learning Objectives

- Recognize potentially toxic household items
- List the dosage of common OTC medications that require medical attention
- Describe the role of the pharmacy technician in toxicology and overdose

Pre-assessment

1. Which would NOT pose a health risk to a child if swallowed?

- I. Crayola Crayons
- II. Tide Pod dishwasher detergent
- III. Bucky-ball magnets
- IV. Desiccant package from new pair of shoes
- V. Moldy bread

a) I only
b) I,III, V
c) II, IV
d) I, IV, V

Pre-assessment

2. A mother calls your pharmacy and states that her 17 kg, 4 year old son got into her bottle of Tylenol 325 mg and ate at most 4 tablets. She wants to know if she should take her son to the ER. Your response is

- a) Send her directly to the ER
- b) Reassure her that this dose will not cause any harm to her son
- c) Reassure her that this dose will likely not harm her son and refer her to the poison control hotline
- d) "I'm sorry I can't help you with that question."

Pre-assessment

3. A pharmacy technician can play a role in overdose prevention by

- a) Participating in health fairs and poison prevention week
- b) Referring callers to the poison control center
- c) Reminding parents and others to keep their medications safe from children
- d) All of the above

MOST IMPORTANT SLIDE

1-800-222-1222

2nd Most Important Slide

Throw away your syrup of ipecac


- Vomiting is often (very often) worse than the poison
 - Can cause aspiration
 - Can cause injury due to vomiting
- Parents get over anxious (rightfully so) about small, probably insignificant exposures

Principles of Toxicology

- Who
 - Age of person involved
 - Actual caller
- What
 - Type of exposure
 - Ingestion
 - Ophthalmic
- When
 - How long ago
- Why
 - Accidental or intentional

Dangerous...or Not?

- Sally's mom calls your pharmacy and states that she found Sally and her friend having a tea party with purple Play-Doh. Both Sally and her friend decided to eat some of the fake cookies.
- Are you concerned?




Credit: <http://www.pinterest.com/typopal/>

Playthings

- Play-Doh, crayons, markers, and most other children's toys
 - Manufacturers know that children like to put things in their mouths
 - Could be a choking hazard
 - Older toys may contain lead paint
- **Typically: Not Dangerous**

Will it Dry You Out?

- You just bought a new pair of shoes but left the box on the floor. Your 2 yo son found the desiccant package in the box and has successfully ripped it open and you see beads in his mouth. You are not sure if he has swallowed any beads.
- Is he in danger?




Credit: <http://www.sigmadirect.com>

Desiccant Packets

- Used in both food and non-food products
- Contain silica gel to preserve freshness and prevent moisture
- Products state "Do not eat" to prevent consumers thinking that it is part of the product
- Potentially a choking hazard
- **Not Dangerous**

Wash With Water...or Not?

- A dad calls the pharmacy and states that he was doing the laundry and dropped one of his tide pods on the ground. His hands were full so he didn't pick it up right away. Later, he found his 3 yo son chewing on the packet, which has broken and is leaking everywhere.
- What do you tell him?




Credit: <http://www.1.800.com>

Concentrated Detergents

- Case reports in children include profuse vomiting, CNS depression, aspiration and respiratory distress
- Could include large amounts of dishwasher detergent and laundry detergent (especially powder)
- Also Drano
- **Very Dangerous**

Clean Inside and Out?

- You are shopping at a supermarket when you notice a child in the cart in front of you who has the tip of a bottle of "Lysol with bleach" in his mouth. The mother quickly takes the bottle away but notices the nozzle was on and there is a small amount in the child's mouth.
- How do you help?



Credit: www.lysol.com

Dilute Cleaners


- In a child this is almost never a problem
 - Adults may drink more intentionally
- Rinse out mouth and face to prevent skin irritation
- Drink fluids
- Child may vomit, but not likely,
 - Would usually occur within the first few minutes to an hour
- Most items okay, older more concentrated window cleaners may be a problem
- **Call poison control**

Soaps and Shampoo

- Similar idea as previous
 - Children tend not to get enough to be a problem
- May cause local irritation
- Rinse out mouth
- Give child something to drink
- **Typically Not Dangerous**

A Good Way to Stay Warm?

- Your father-in-law is working in the garage late at night. To stay hydrated he has been drinking Gatorade from a large bottle. This time he unintentionally grabs the small bottle of antifreeze and takes a gulp before realizing what he has done.
- Are you concerned?




Credit: www.livescience.com

Antifreeze (Ethylene Glycol)

- Children
 - Anything more than a lick, sip, or taste need to be referred to a health care facility
- Adults
 - More than a “swallow”
 - More likely to intentionally ingest this product
- Lethal dose is as little as 1.5 ml/kg
- What about alcohol?
- **Very Dangerous**

Fun...or Fatal?

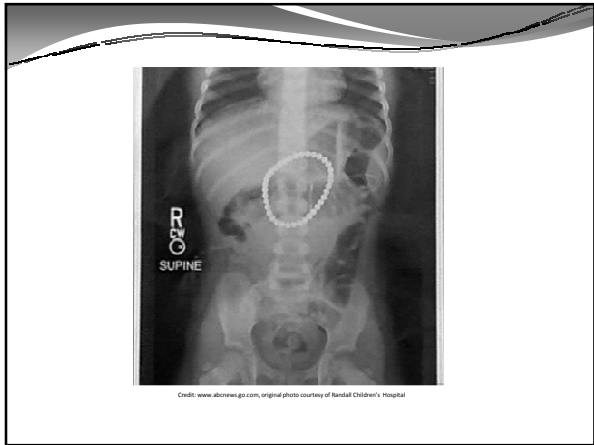
- Johnny gets a set of Bucky-balls in his stocking for Christmas. A few days later you find Emily (3 yo) playing with them and find that there are at least 7 balls missing. You ask Emily if she swallowed any but she won't give a solid answer.
- What do you do?



Credit: www.the-buckyballs.com

Magnets and Batteries

- Very strong magnets
 - Able to be attracted through tissue in the GI tract
 - If this occurs it may cause perforation
 - May be fatal
- Small batteries
 - Risk of battery getting caught in esophagus and causing burns
 - Need x-ray to ensure battery is passing through GI tract
- **Very Dangerous**



Toxic Time Bomb?


- In most situations we are concerned about the acute toxicities associated with overdose
- Occasionally we need to watch for late onset toxicity
 - Delayed release products
 - Mushrooms
 - Aspirin
 - Acetaminophen

Acetaminophen

- Acute
 - Adults
 - 200 mg/kg or 10 g, whichever is less
 - Pediatric (less than 6 years of age)
 - 200 mg/kg or more
 - Unknown amount ingested
 - Usually not a toxic problem when ingested accidentally
- Chronic
 - > 4 gm per day
 - Major concern is hepatotoxicity

Candy...or Caution?

- Your 14 yo son just had his first football practice of the year and is feeling really sore. You tell him to take some ibuprofen to help. Being a teenager he thinks more is better so he takes 10 tablets because he is really sore.
- Will this be a problem?




Ibuprofen

- Less than 200 mg/kg ingestions rarely cause significant toxicity
- Doses up to 48 g have been well tolerated by healthy adults
 - 240, 200 mg tablets
- An adult died following an overdose of 105 g of sustained-release ibuprofen.
 - 525, 200 mg tablets

Nutritious...or Noxious?

- You are visiting your cousins who have gummy vitamins every morning for their children. Your 4 yo really likes these "candies" and finds them during the day and eats a handful before any can stop him.
- Are you concerned?




Credit: www.singlekid.com

Multivitamins

- Major concern is iron
 - At one point was a leading cause of death in children
 - As little as 20 mg/kg can be toxic, 60 mg/kg can be fatal
 - Vitamins contain from 10-30 mg/tablet
- Gummy vitamins do not contain iron
 - Very little concern for a one time overdose of other components
- **Very Dangerous (maybe...call poison control)**

Night-time Relief...or Nightmare?

- You get home late from work and have a stuffy nose and sore throat. You are very tired and want a good night sleep. You go to the medicine cabinet and drink 5 teaspoonfuls (25 ml) of cough syrup before you realize the directions say 5 ml.
- Are you in trouble?




Credit: www.coughingabuse.com

Cough Medicines

- Many different formulas-difficult to know if toxic
 - Many contain acetaminophen or aspirin
- Dextromethorphan
 - Can be used to get a feeling similar to a high
 - 7.8 mg/kg doses may result in seizures, hallucinations, tachycardia, hypertension, respiratory distress
- Guaifenesin
 - Considered to be non-toxic
- Antihistamines
 - Can cause drowsiness and sedation at higher doses
 - Newer generation antihistamines (Zyrtec) may be safer
- **Call poison control**

Clean Your Teeth...Not Your Stomach

- At his last soccer game Freddy got blue punch as a after game treat. At home, he thinks the blue mouthwash would taste just as good.
- Should you let him try some?



Credit: www.amazon.com

Alcohol

- Any amount of alcohol in a child is very dangerous
 - 6-26% alcohol in mouthwash
 - Up to 85% in perfumes
- Children don't have the same ability to metabolize alcohol and may have more severe intoxication
- May also result in hypoglycemia
- 0.5 ml/kg can result in toxicity
- **Very dangerous**

Technician Role

- Employee of a poison control center
 - Take incoming calls from home callers
 - Answer questions about common household products
 - Defer to pharmacist for certain exposures as defined in protocol
- In the community
 - Refer callers to the poison control center
 - 1-800-222-1222
 - Participate in poison awareness teaching activities

Post-assessment

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Thanks

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