

The School Nurses' Prescription

News You Can Use from Your Indiana Poison Center

Ten Things NOT to Worry About

October
2014

Last month we featured Ten Things that should make your pulse pound a little harder. This month we go the opposite direction, with Ten Things that you can actually relax about. These are items that are really NOT very toxic, at least in the usual accidental exposure. Of course, you should always call Indiana Poison Center at 1-800-222-1222 for assistance in assessing the situation and determining the course of treatment for your individual patient. You should also keep in mind that the rationale behind the ingestion (was it an accident or was the patient suicidal?) is an essential factor in the treatment decision.

1. **Elemental mercury** from glass thermometers or CFC lightbulbs – while elemental mercury CAN be a serious problem, as when spilled in large amounts as from a sphygmomanometer, in the amounts available in oral thermometers or curly lightbulbs, it is not a problem. Even if the elemental mercury is swallowed, the amount available makes it a non-toxic exposure.
2. **Digoxin** – one tablet of Lanoxin® or digoxin, is usually not a problem for a healthy child or adult. They would actually have to ingest more than a digitalizing dose, which is quite a large dose, requiring multiple pills, for toxicity to develop.
3. **Levothyroxine** – Synthroid® or levothyroxine, is another medication that is relatively safe in small ingestions. Large amounts are required to cause toxicity, and then symptoms are delayed 5 to 14 days post-ingestion.
4. **SSRIs** – Prozac®, Zoloft®, trazodone – all of the selective serotonin reuptake inhibitor class of antidepressants are pretty safe in accidental ingestions. Large amounts are required to cause toxicity and even then life-threatening symptoms are unusual. Serotonin syndrome occurs after exposure but requires very large doses or the use of two or more serotonergic agents with different mechanisms of action, and includes a change in the level of consciousness, fever, GI upset, tremors, hyperreflexibility, and tachycardia, and may last for several days even with aggressive treatment with benzodiazepines and cyproheptadine.
5. **Insulin** – Did you know insulin is ineffective if taken orally? It's true! Insulin is only active if injected parenterally, it has no effect if it is swallowed as it is broken down in the GI tract and is never absorbed.
6. **Metformin and "Glitazones"** – Glucophage®, Actos®, Avandia® – unlike the sulfonylurea drugs, these anti-diabetic medications are very safe if one is accidentally taken. They may cause minor GI upset, but rarely cause anything more. Metformin in very large doses can cause severe lactic acidosis

and hypoglycemia, but not in small amounts.

7. **ACE-Is** – Zestril®, Captopril®, Prinivil® – these antihypertensives are quite low in toxicity, especially when compared to their counterpart calcium-channel blockers and beta-blockers. They rarely cause drops in heart rates or blood pressures. The only slight problem associated with accidental ingestion of them is that they may require observation for up to 6 hours.
8. **Silica gel** – These ubiquitous little packets say "Do Not Eat" but they are completely non-toxic. Their labeling reflects the tendency of adults to mistake the packets for salt or sugar and sprinkle them on their food Or to mistake them for pills and swallow them whole! They are choking hazards.
9. **Ink** – the amount of ink that is in one ink pen is not enough to be a problem (even though it does make a big mess when ingested!) Only if a child drank cases of pen's ink would there be even a minute concern about toxicity. We worry more about the child eating some of the plastic or metal that constitutes the pen itself.
10. **Pencil "lead"** – Pencil "lead" is not lead, it is graphite, and graphite is non-toxic. There is no risk of lead poisoning with exposure to graphite. It does permanently scar, or "tattoo", the area of the skin where it is "poked in". If the tattoo will be in a place where it will be a problem (faces, young ladies' hands), it is worth sending the child in to their physician to have the area thoroughly cleaned.

Street Walking

Heroin is also known as diacetylmorphine. It is the product of the acetylation of raw opium obtained from the opium poppy, creating the 3,6-diacetyl-ester of morphine. Heroin is inert in its basic form but is metabolized in the body into morphine. It was invented by a British pharmacist in 1874 and originally marketed by the Bayer Pharmaceutical Company as a treatment for morphine addiction. (Then they found out about its metabolism!)

Afghanistan produces 75% of the world's opium, with Burma producing most of the rest. Some grows elsewhere in Southeast Asia, and some in Mexico and Columbia. From there it is smuggled, despite the death penalty risks for doing so in those Asian countries, out of those countries and into the United States, where it is sold through a variety of methods. It is also further refined and cut, to become Grade 3 ("brown sugar heroin", meant to be

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smoked) or Grade 4 (“white powder/salt”, meant to be injected) prior to being sold.

Heroin is usually either injected (“slamming”, “banging”, “shooting up”, “digging” or “mainlining”) or inhaled (by snorting or smoking it). Oral administration of heroin does not provide the “rush” the users desire, so it is not typically used that way. The desired effects are a sudden rush of euphoria, dizziness, drowsiness and relaxation. The problem with heroin is that the narcotic effects can be excessive and the person can become unresponsive and apneic, leading to respiratory and cardiac arrest, and death.

The antidote for heroin is the opioid antagonist, naloxone (Narcan®). The goal for using naloxone is to reverse respiratory depression while not precipitating opioid withdrawal. Naloxone can be administered IV or intranasally, at a dose of 0.4-2 mg IV, to reverse narcotic symptoms in a prompt fashion in non-heroin dependent patients. Smaller initial doses (0.1-0.2 mg) may be indicated in heroin dependent patients to reduce the potential for withdrawal symptoms. Often, after receiving naloxone, both types of patients suddenly “wake up” and are unhappy to have that happen! Nurses need to be prepared to safely restrain the patient so that he or she doesn’t inadvertently injure themselves. Patients who don’t adequately respond to large doses (10 mg total IV) of naloxone may not have been exposed to opioids.

A new treatment option is to equip non-medical first responders, such as police officers, and friends and family members of opioid abusers, with naloxone intranasal applicators. Then if they respond to the scene of a reported opioid overdose, or find a known opioid abuser “down”, they can quickly administer naloxone, while waiting for EMS to arrive. While this program is new in the last 1-2 years, anecdotal reports are showing good results.

Adequately responding to naloxone does not in any way lessen the need for ED evaluation or shorten the length of time necessary for ED observation for patients who have been exposed to heroin. The effect of naloxone is much shorter (20-90 minutes) than the effect of heroin as morphine (2-4 hours), so the patient may re-sedate within 2 hours after the administration of naloxone although this is rarer with heroin than other opioids. Observation for at least 4 to 6 hours is prudent. Repeated doses of naloxone or even a naloxone IV drip may be necessary to maintain an adequate level of consciousness and respiratory status.

Additional adverse effects of heroin included complications of CNS depression, including aspiration pneumonia and rhabdomyolysis, direct pulmonary injury reflected in pulmonary edema, and cardiac valve vegetative growth and endocarditis. Local tissue damage and infection where heroin is injected, at the site of “pops” or “tracks”, is also common. Risks associated with needle-sharing (particularly contracting Hepatitis B or HIV/AIDS) are also high.



Years ago heroin was an exotic toxin, seen only in the “big city” and mostly on the East and West coasts.

Now, unfortunately, it is commonly seen across the country and

is popular in the Mid-West because it is (relatively) inexpensive as compared to prescriptions opioids and is (relatively) simple to obtain and to use. Keep your eyes open for heroin making an inroad in your neighborhood!

Citations: Goldfrank’s Toxicologic Emergencies, 9th Edition. Nelson, Lewis S. (Editor) 2011. The McGraw-Hill Companies.

Dope	White Horse	Brown Crystal	Chieva	White Boy
Heron	Boy	Brown Sugar	Mexican Brown	Smack
Herone	He	Brown Tape	Mexican Mud	Scag
Hero	Black	Brown Rhine	Mexican Horse	Scat
Hera	Black Tar	White Girl	Junk	Sack
H	Black Pearl	White Stuff	Tar	Skunk
Big H	Black Stuff	Chiba	Snowball	Number 3
White	Black Eagle	Chiva	Snow	Number 4
China White	Brown	Horse	Dragon	Number 8
White Nurse	White Lady			

The School Nurses’ Prescription is an e-newsletter for Indiana school nurses from the Indiana Poison Center. If you have comments, suggestions, or topics you would like to see addressed in future e-newsletters, or if you aren’t on the Indiana School Nurse list-serve and would like to subscribe to this e-newsletter, please contact Gwenn Christianson at gchristi@iuhealth.org