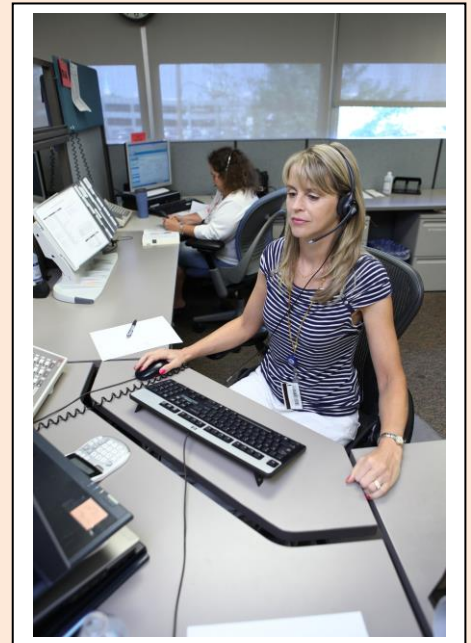




# DPICTIONS

## Summer 2016



### Cincinnati Drug and Poison Information Center

**Website:**

<http://www.cincinnatichildrens.org/service/d/dpic/default/>

**Blog:**

<http://cincinnatichildrensblog.org/category/safety-and-prevention/>

# Heroin Laced with Elephant Sedatives

Rob Goetz PharmD, DABAT

Dylan Koch PharmD candidate



American  
Association of Poison  
Control Centers  
www.aapcc.org

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On July 28th, 2016, the *National Post* posted an article on their website titled, “A new threat in fight against overdoses: It’s not heroin or fentanyl, it’s elephant sedatives.” The elephant sedative is carfentanil and its presence in heroin was first reported in Columbus, OH where it was linked to one death and 9 overdoses within hours of each other on July 10<sup>th</sup>. The death toll in Akron is even worse with 91 overdoses and 8 deaths reported over the course of two days. This unprecedented spike in overdoses has continued during August, and most recently the Hamilton County Coroner confirmed the presence of carfentanil in 8 overdose deaths with more confirmations expected in the coming days.

The source of the carfentanil is unclear, but officials have proposed that the drug is either being prepared illegally in the United States or is being imported from China. Currently, the latter source seems more plausible considering the advanced techniques and equipment needed to manufacture carfentanil.

Carfentanil is an analog of the synthetic opioid analgesic fentanyl. It is one of the most potent opioids known and the most potent used commercially. Carfentanil was first synthesized in 1974 by a team of chemists at Janssen Pharmaceuticals. Its potency is approximately 10,000 times that of morphine and 100 times that of fentanyl, with activity in humans starting with a dose as little as 1 microgram (0.001 milligrams). Carfentanil is only intended for sedating and immobilizing large-animal (elephants, gorillas, etc.) as its extreme potency makes it inappropriate for use in humans.

Patients addicted to opioids tend to be looking for their next big high or to attempt to achieve the feeling they got when they first injected an opioid. As a result, news of a newer more potent opioid on the street may actually motivate users to try it rather than deter them as one might expect. Among users, a person who overdoses is considered to have gotten greedy. Unfortunately, for either accidental or purposeful users of carfentanil instead of the best trip ever it may be the last trip for them.

The extreme potency of carfentanil has raised fears among first responders and emergency room personnel. The concern is that inadvertent exposure to powder, liquids prepared for injection or a victim’s body fluids could put these health care workers at risk. Exposure to aerosolized carfentanil as is thought to have occurred in the hostage rescue attempt in Moscow in 2002 is very unlikely. However, inadvertent mucus membranes exposure to the powdered drug, or to a prepared liquid form of the drug is likely to result in potentially serious toxicity even with immediate removal. Similarly, needle sticks and even scratches from needles containing drug residue could result in dangerous symptoms.

While the uniform precautions adopted years ago to minimize exposure to blood borne pathogens should also minimize the risks involved in caring for overdose patients, adequate doses of naloxone or other reversal agents should be readily available in case of need. Veterinarians and animal health technicians who have legitimate need to use these agents for immobilizing large animals have policies and procedures in place that can be used as starting points to protect health care workers.

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# Harmful Algal Blooms



Ohio conducts monitoring and notification of bacteria and algal toxins at certain state park beaches and boat ramps, and semi-private beaches located along the Ohio Lake Erie border, inland lakes and the Ohio River. The purpose of beach, lake and river monitoring is to test water quality of the state's swimming beach waters and boat access area's to notify the public whenever bacteria or algal toxin levels present a potential health risk to those engaged in water activities. BeachGuard provides data on bacterial and algal toxin advisories and monitoring activity.

<http://publicapps.odh.ohio.gov/BeachGuardPublic/Default.aspx>

[http://wwwapp.epa.ohio.gov/gis/mapportal/HAB\\_Monitoring.html](http://wwwapp.epa.ohio.gov/gis/mapportal/HAB_Monitoring.html)

## First implantable drug Probuphine to treat Opioid Addiction

On May 26<sup>th</sup>, 2016 the Food and Drug Administration approved the first implantable drug to deliver long-lasting medication for patients addicted to opioids called Probuphine (Buprenorphine). Prior to the implantable form, buprenorphine was available in a pill or film form. Probuphine is an implant that can provide a 6 month continuous dose. The implant is aimed at patients who are already deemed stable, taking low dosages of other forms of buprenorphine. The cost is estimated to be ~ \$5,000.

Proprietary ProNeura Technology: Probuphine Implant

EVA polymer + Buprenorphine → Blended & Extruded → Probuphine (26 mm long, 2.5 mm diameter)

- Implant contains 80 mg of buprenorphine HCl, uniformly distributed throughout the ethylene vinyl acetate co-polymer (EVA) matrix
- No reservoir, therefore no risk of drug dumping
- Following subdermal placement Probuphine implant delivers non-fluctuating, stable blood levels of buprenorphine for 6 months; expected to enhance patient compliance and retention

INNOVATIONS IN MEDICINE™

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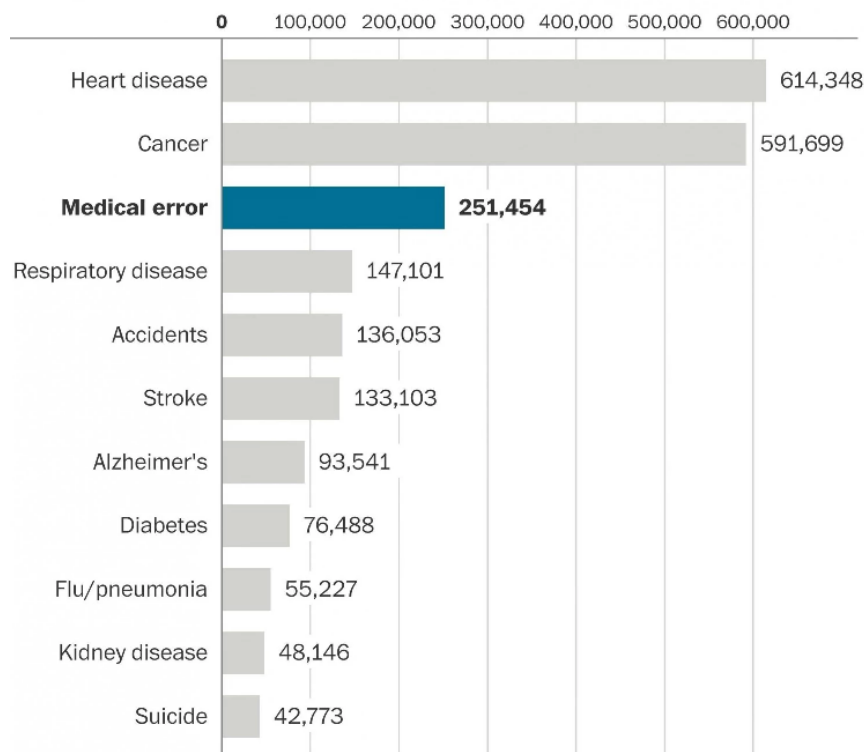
# Medical Errors now Third Leading Cause of Death in the US

Marc Lowy

Once in a while, you hear something about a patient receiving the wrong drug, surgeons removing the wrong body part or patients contracting an infection while in the hospital. You may have assumed these types of mistakes were infrequent. However, a patient-safety research study by John Hopkins University School of Medicine indicates that medical errors account for more than 250,000 deaths per year in the United States. This analysis was published in the BMJ on May 3, 2016 by Martin Makary, professor of surgery at John Hopkins. According to Makary, reasons for medical error deaths range from bad doctors to systemic communication breakdowns. “It boils down to people dying from the care that they receive rather than the disease for which they seek care”, Makary said. This research was based on 4 large studies that took place between 2000 and 2008.

## Death in the United States

Johns Hopkins University researchers estimate that medical error is now the third leading cause of death. Here's a ranking by yearly deaths.



Source: National Center for Health Statistics, BMJ

THE WASHINGTON POST

Medical error now represents about 9.5% of all deaths in the U.S

### Reference:

Makary, M.A., Daniel, M. Medical error: The third leading cause of death in the US. BMJ 2016;353:i2139 doi: 10.1136/bmj.i2139 (Published 3 May 2016).



# Protecting Ohio from the Zika Virus

Angela Campos RN, MSN, CSPI

Zika virus is a mosquito-borne flavivirus. Zika virus infection has been associated with Guillain-Barre Syndrome (a disorder in which the body's immune system attacks part of the peripheral nervous system.) Zika virus infection during pregnancy is suspected to cause microcephaly and other severe fetal brain defects. Of date in the state of Ohio there have been 20 confirmed cases acquired from travel and 1 acquired by sexual transmission. Areas in Miami, FL have been identified where Zika virus is being spread by mosquitoes. The best way to protect yourself against this and other mosquito borne diseases is to prevent bites by wearing an EPA registered insect repellent, long sleeves and pants. Remove breeding sites such as containers with standing water, and keep screens on your windows and keep doors shut. If traveling to an area of known Zika transmission additional precautions should be taken such as remaining in air conditioned places, sleeping under a mosquito net, and treating gear and clothing with permethrin. When selecting and using an EPA registered insect repellent be sure to read the entire label, apply it only per the label instructions, and always keep it in the original container.

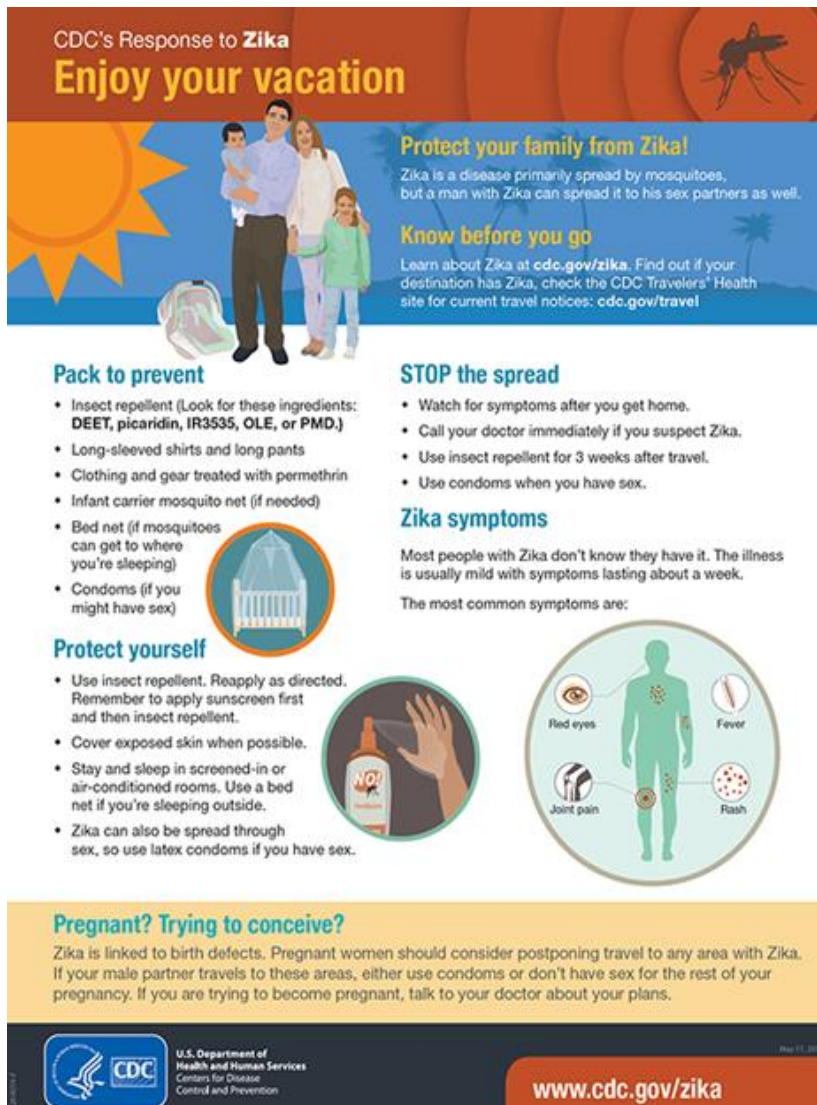
**Health professional tip:** In cases of suspected Zika infection, recent data suggests Zika RNA can persist in urine for at least two weeks post symptoms onset. CDC now recommends persons with suspected Zika disease have a Zika virus rRT-PCR performed on both urine and serum within 7 days of symptom onset. A positive rRT-PCR result on either specimen confirms Zika infection. A Negative result on either sample does not exclude Zika virus infection, rather additional testing for IgM antibody should be performed.

## References:

<http://www.odh.ohio.gov/zika>

<http://www.emergency.cdc.gov/han/han00389.asp>

<http://www.cdc.gov/zika/>



**CDC's Response to Zika**  
**Enjoy your vacation**

**Protect your family from Zika!**  
Zika is a disease primarily spread by mosquitoes, but a man with Zika can spread it to his sex partners as well.

**Know before you go**  
Learn about Zika at [cdc.gov/zika](http://cdc.gov/zika). Find out if your destination has Zika, check the CDC Travelers' Health site for current travel notices: [cdc.gov/travel](http://cdc.gov/travel)

**Pack to prevent**

- Insect repellent (Look for these ingredients: **DEET, picaridin, IR3535, OLE, or PMD.**)
- Long-sleeved shirts and long pants
- Clothing and gear treated with permethrin
- Infant carrier mosquito net (if needed)
- Bed net (if mosquitoes can get to where you're sleeping)
- Condoms (if you might have sex)

**STOP the spread**

- Watch for symptoms after you get home.
- Call your doctor immediately if you suspect Zika.
- Use insect repellent for 3 weeks after travel.
- Use condoms when you have sex.

**Zika symptoms**  
Most people with Zika don't know they have it. The illness is usually mild with symptoms lasting about a week.  
The most common symptoms are:

- Red eyes
- Joint pain
- Fever
- Rash

**Protect yourself**

- Use insect repellent. Reapply as directed. Remember to apply sunscreen first and then insect repellent.
- Cover exposed skin when possible.
- Stay and sleep in screened-in or air-conditioned rooms. Use a bed net if you're sleeping outside.
- Zika can also be spread through sex, so use latex condoms if you have sex.

**Pregnant? Trying to conceive?**  
Zika is linked to birth defects. Pregnant women should consider postponing travel to any area with Zika. If your male partner travels to these areas, either use condoms or don't have sex for the rest of your pregnancy. If you are trying to become pregnant, talk to your doctor about your plans.

U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention  
www.cdc.gov/zika  
May 11, 2015

# Heroin Hopeline

Tisha Carson RPh, CSPI

The Heroin Hopeline is a **completely free service** established to provide a safe place for addicts and their loved ones to call for support and understanding. Navigating the system of heroin treatment can be complex and challenging. This program has care coordinators who can help families get the help they need.

When you call the hopeline, you'll be connected to a caring person who will listen to you and answer all the questions you might be afraid to ask. They don't report to any agencies, and conversations can be anonymous if preferred. They just listen and then provide you with resources to help break the cycle of addiction. The care coordinators can provide information on these topics and more:

- How to confront yourself or a loved one you believe is addicted to heroin or other drugs
- How to detox and where to go to receive medical care during a detox
- What treatment programs are available in the counties of Warren, Clinton, and Butler Ohio and how to access them ( they can also help you if you live outside these counties)
- How to stay clean after treatment

"Heroin addiction is a sneaky thing. No one aspires to become an addict, but it can happen to anyone and it does not discriminate: any income level, any profession, any race, any life season... it can happen to anyone."

**1-877-695-6333**

Warren & Clinton County, Ohio

**1-844-427-4747**

Butler County, Ohio

For more information, please visit their website:

<http://www.heroinhopeline.org/>

Another resource in Ohio is provided by the ADAMHS Board of Montgomery County. They will provide guidance to individuals from any county.



**HEROIN**

**For Help, call  
(937) 853-4343**

<http://www.adamhs.co.montgomery.oh.us/heroinhelpline1.php>

# Essential Oils

Adapted from: Connecticut Poison Control Center

Essential oils are found in cleaning products, potpourri, oil warmers and many other household products. Essential oils have been receiving a lot of notice lately for various claims of healing and other properties. Some people even hold essential oil mixing parties.

Essential oils are distilled from plants and used in clinical aromatherapy and homeopathy. Some examples of essential oils are lavender, eucalyptus, tea tree, wintergreen, lemon, and peppermint. Oils may be applied to the skin, breathed in, or spread in the air. Incorrect use of essential oils can cause serious poisoning. **Natural does not mean harmless.** Common misuses include swallowing oils, applying more frequently than recommended, and not diluting the strength of oils before use. Children under 6 are most at risk, especially those 1-3 years of age. Adults tend to make more severe mistakes with essential oils. Wintergreen and camphor oils are especially dangerous in small amounts (as little as 1 tsp).

Essential oil bottles often do not have child-resistant safety caps. Keep all essential oils up and locked away and out of the sight of children. It is important to keep the following in mind when dealing with essential oils:

- ✓ Label essential oils with name, date, and strength. Improper labeling is common.
- ✓ Know the concentration/dilution of each oil. Be sure to do the math when preparing the strength.
- ✓ Avoid using undiluted essential oils on the skin.
- ✓ Consider doing a patch test to look for allergies and sensitivities before putting larger amounts on skin.
- ✓ Avoid ingesting essential oils.
- ✓ Call the Poison Control Center at 1-800-222-1222 if someone has been poisoned by essential oils.
- ✓ For more information visit <https://nccih.nih.gov/health/aromatherapy>



*Reference: adapted from the Connecticut Poison Control Center UConn Health leaflet*

## DPIC Receives Grant to Implement the Cincinnati-Community Oriented Trauma System (C-COTS)

The People Of Color Wellness Alliance (POCWA) program of DPIC has been operational for 10 years. The foundation of POCWA is to implement environmental strategies for community change based on participation and representation of all sectors of the community. Through the DPIC POCWA, a need was revealed to address the problem of toxic stress and exposure to trauma, particularly among minority and disparate populations on a system-wide community level. Research connecting Adverse Childhood Experiences (ACES) and exposure to trauma as a link to criminal activity, drug abuse, and other high-risk behaviors is the focus of the Cincinnati-Community Oriented Trauma System (C-COTS). The C-COTS is a collaborative representing all sectors of the community. This collaborative of behavioral health, social service, youth service, and other providers will implement a systems approach to provide assessments, interventions, skills building, and behavioral health services in the Urban Core of Cincinnati, Ohio. These services will start among youth and their families in school and community settings. Participants are at risk of harm due to ongoing exposure to crime, violence, and/or other traumatic events in their neighborhood.

Strategies will be monitored for at least five years and will:

- Identify and connect youth and families impacted by trauma (school and community) to treatment and other resources
- Implement a process to conduct ACES and other measures of trauma exposure on a broad community level
- Assure "seamless" access to trauma informed care experts
- Maintain connectivity between service providers, stakeholders and consumers

For more information contact Marsha Polk, Principal Investigator or Alysia Longmire, C-COTS Coordinator.

# FBI and DEA Team up to Educate about Opiate Addiction

Jan Scaglione PharmD, DABAT

The FBI and DEA collaborated on a documentary film in order to raise awareness of the opiate crisis and addiction. The film, *Chasing the Dragon: The Life of an Opiate Addict* was released in June 2016, as an effort to bring awareness and education to students.

To view the film; <https://www.fbi.gov/news/stories/raising-awareness-of-opioid-addiction>. The film may be downloaded and used by anyone interested in educating themselves or others about opiate addiction. Fair warning: It doesn't glamorize addiction and is highly graphic at times, but the language was cleaned up in this version so it could be shared.

There was an opportunity to view the film prior to release, and in attendance were members of the FBI, DEA, U.S. Department of Justice U.S. Attorney's Office, local law enforcement, Hamilton County Coroner's Office, and various local treatment providers and agencies.

After the 45 minute film, there was a Q & A session with local representatives; Lt. Brett Isaac from the Cincinnati Police Department, Michael Doyle from Talbert House, and Don Jasper from the Hamilton County Coroner's Office. Here's what they had to say:

According to Don Jasper there were 414 overdose deaths recorded by the Coroner's Office in Hamilton County in 2015. Fentanyl was found in 245 individuals, 213 deaths had a combination of fentanyl and heroin, and 38 deaths from heroin alone. This was the first year where more people died with fentanyl in their system than heroin. According to Michael Doyle, in 2015, 57% of the heroin users tested by Talbert House had fentanyl in the samples tested from drug screens.

Doyle also discussed how you can determine if someone is using drugs, including heroin. The first noticeable thing is behavior changes where the person distances themselves from other family members. Then come appearance changes, often seen after addiction takes hold and a person loses interest in taking care of themselves: dark circles under the eyes, a gaunt look about them, pinpoint pupils, scratching due to constant itching, wearing long sleeves to cover track marks from injection, "nodding off" (having trouble staying awake), and finding it difficult to carry a conversation.

Tips were offered on how to keep medication from getting into the hands of an adolescent. Lock up medications in a lock box, and at the very least, count the remaining tablets of narcotic prescriptions to make sure no pills are missing.

Adolescents are treated a little different for addiction than adults. While adults may be prescribed Suboxone® (buprenorphine with naloxone), many treatment centers prefer to use Vivitrol® (naltrexone) with adolescents. This is easy to give in a once a month injection to curb cravings for drugs.

Lt. Isaac discussed the difficulties of getting heroin dealers off the streets. He stated that at a price of \$160 for a gram of heroin, the amount of money a dealer can make is lucrative. It is hard for them to see drug exchanges because they happen very quickly, and there is a high risk of danger in attempting to pursue vehicles involved in drug trafficking. Police have been attempting to identify the hot spots for selling drugs, but as one dealer is removed from the streets, another takes over the spot, and this also makes it hard to stop the drugs. The penalty for dealing drugs is not harsh enough, our jails too full, and there isn't enough money to be able to keep them there at this point. He hopes that changes in the future. Isaac stated that it is a complex issue that requires a community's effort as well as their own to stop the drugs from coming in and being used by the citizens. Legislators are more likely to listen when a community becomes vocal about a situation.

There is support for the availability of naloxone in schools according to Isaac. The Health department has left this decision ultimately up to the parents and school officials as to whether or not to stock it in schools. Naloxone is used to reverse an overdose of opioids, including heroin.

For anyone trying to recover from addiction, it is imperative to provide them with a good support system in order to give them the best possible chance at staying sober once they get clean. Overall the ultimate hope is that this movie, which paints a raw look at addiction, will keep young people from experimenting with drugs, especially heroin, in the first place.



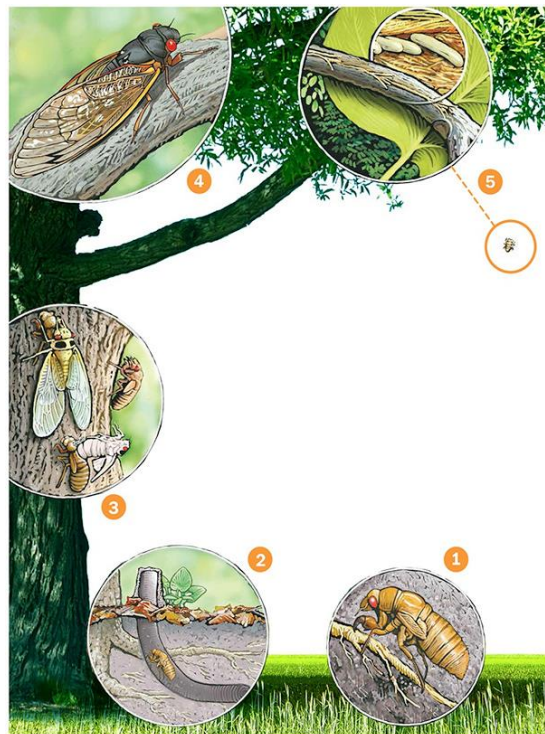
# Summer Serenade

Melissa Huber RPh, CSPI

The cicada life cycle begins when the female deposits an egg in a groove she makes in a tree limb, where it feeds on the tree's fluids. It eventually crawls from the groove and falls to the ground, where it burrows until it finds roots to feed on. It then stays active underground until it emerges as a nymph, climbs the nearest tree and sheds its exoskeleton. Its wings inflate with fluid and the adult wings and skin hardens. Adults spend their time looking for mates. Males sing to attract females, mating occurs, and the cycle is renewed.

In addition to the "dogday" cicadas that are present each year, there are also 15 broods of periodical cicadas with 13- or 17- year cycles in the United States. In Ohio, there are 4 different broods, each affecting different portions of the state: Brood V (which emerged this year), Brood VIII (expected to next emerge in 2019), Brood X (expected to next emerge in 2021) and Brood XIV (expected to next emerge in 2025).

We are all familiar with the summer serenade of cicadas, perhaps especially so this year for the eastern half of Ohio where Brood V of 3 species of *Magicicada* (*M. cassinii*, *spetendecim* and *septendecula*) emerged this Spring from late April to early June. The song is produced by the males, via flexing their "tymbals" – drum-like organs in their abdomens. Some species are especially loud, producing sound in the range of 88 decibels. At this volume, prolonged exposure may be capable of damaging our eardrums, so hopefully no one overindulged in their entertainment. Cicadas are otherwise harmless to humans. They do not bite or sting, although they might give you a little pinch if they mistake your arm for a twig. Ingestion of cicadas is generally considered harmless.





Poison centers offer free, private, confidential medical advice 24 hours a day, 7 days a week. You can reach your local poison center by calling 1-800-222-1222.



## Education and Outreach Summer Safety Tips

Along with the usual warnings concerning the safe use of fireworks, practicing water safety, and using the proper SPF sunscreen for protection against sunburn, this summer season additional caution is needed to prevent exposure to the ZIKA virus. The Centers for Disease Control and Prevention (CDC) provides lots information to recognize symptoms and tips to protect yourself from exposure.

<http://www.cdc.gov/zika/>

Don't forget, you can call the Drug and Poison Information Center anytime (1-800-222-1222) if you have questions or need more information.

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## American Association of Poison Control Centers

This newsletter is brought to you by the Cincinnati Drug and Poison Information Center and was produced with assistance from the American Association of Poison Control Centers and local poison centers across the country.

When you dial 1-800-222-1222, your call is answered by a medical professional with special training in poison management. Help is fast, free, confidential and available 24 hours a day, every day.

