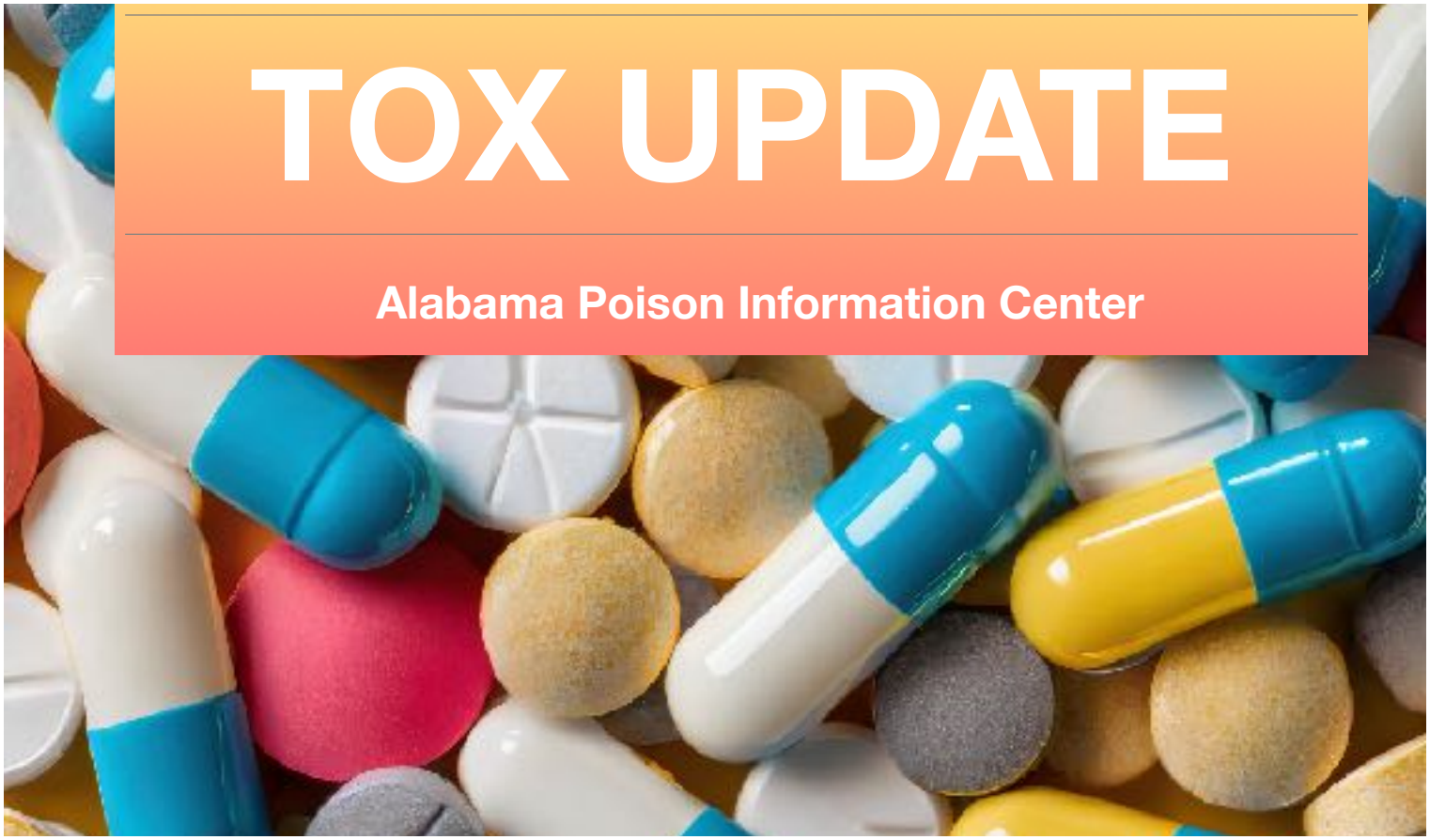
TOX UPDATE

Alabama Poison Information Center



Letter from the Alabama Poison Information Center

With summer in full swing, the Alabama Poison Information Center anticipates an increase in calls as children spend more time outdoors and away from the watchful eyes of school schedules. These carefree days often lead to curious exploration and, unfortunately, the potential for accidental poison exposures. From curious toddlers exploring cabinets to accidental ingestions during backyard barbecues, these warmer months present unique challenges.

The ToxUpdate newsletter is written by pharmacy residents and students that have rotated through our center recently. In this edition, we'll delve into some common summertime exposures, offer prevention tips you can share with parents, and highlight resources available to support you in managing these cases. This edition also features articles about Delta-8 THC and water bead safety.

ALABAMA POISON INFORMATION CENTER
800-222-1222

In this issue:

ToxUpdate is brought to you by APIC and edited by Rachael Fogel, PharmD

Summer Dangers: Sunscreen, Insect Repellant, Fireworks, and Pool Cleaners

By Anna Armstrong, PharmD
PGY-1 Pediatric Pharmacy Resident

Household products are commonly encountered poisons and may pose a danger to pediatric patients when ingested. During summertime, these ingestions may increase in frequency due to more time spent in and around the house. This is evidenced by an increased number of calls made to Poison Centers across the country during summer compared to winter. The 2022 Annual Report from America's Poison Centers reported an average of 6,041 human exposure cases per day managed by Poison Centers in May compared with 5,229 per day in January.[1] Products responsible for exposures during summer months include sunscreen, insect repellant, pool cleaning products, fireworks, and many more.

Parents commonly apply sunscreen products to their children during the summer months. High accessibility increases the risk of ingestion, especially among younger pediatric patients. Sunscreens can be classified as either chemical sunscreens or physical sunscreens. Most commonly, chemical sunscreens contain para-aminobenzoic acids (a.k.a PABA); physical sunscreens often contain titanium dioxide or zinc oxide. Fortunately, most cases of sunscreen ingestions can be monitored closely at home. The most common adverse effects of sunscreen ingestion include vomiting and diarrhea. Any pediatric patient with severe gastrointestinal symptoms, abdominal pain, or dehydration should be directed to an emergency department for further management.[2]

Another common item used during summer is insect repellant, or "bug spray." In varying concentrations, the most common ingredient in insect repellants available today is diethyltoluamide (DEET). Other ingredients seen in bug sprays include picaridin and oil of lemon eucalyptus. The American Academy of Pediatrics recommends using an insect repellant that contains no more than 30% DEET in children.[3] Whenever an ingestion occurs with an insect repellant product containing DEET, the most common symptoms are nausea, vomiting, and abdominal pain. Following ingestion of a DEET-containing product, pediatric patients may be observed at home if they are asymptomatic AND the ingestion was an accidental "taste-sized" amount of a low-concentration product (e.g., 10%). It is vital to contact the Alabama Poison Information Center about all exposures and inquire about the concentration of the DEET-containing product and the volume consumed in the case of ingestion; severe ingestions can present with neurologic toxicity, most notably seizures, encephalopathy, and coma. Any symptomatic patients or those with large ingestions/ingestions of a high-concentration product should be evaluated in an emergency department.[4]

During summer holiday celebrations, items such as pool cleaners and fireworks may be readily available in or around many homes. Firework products often contain various chemicals: potassium nitrate, barium chlorate, white phosphorus, and others. Several of these chemicals can be harmful in large quantities. While unintentional ingestions of fireworks typically are in small quantities due to their bad taste, even small ingestions of some chemicals contained in fireworks can be harmful. Contact the Alabama Poison Information Center for further evaluation if a child has ingested fireworks. Identifying the name of the firework and the quantity ingested may help determine chemical content and toxicity risk.

Items such as sunscreen, insect repellants, fireworks, and pool cleaners pose various levels of harm to children when consumed.

Pool cleaning products, such as chlorinating liquid, pose a serious risk to pediatric patients if ingested. These products are hypochlorite solutions similar to household bleaches, but pool cleaners typically contain a much higher concentration of hypochlorite (10-20% vs 3-5%). Unintentional ingestions from these products typically are of small “tasting” quantities due to an immediate burning sensation in the mouth and throat. More commonly, inhalation exposures can lead to irritating respiratory symptoms, such as cough and shortness of breath. Any concern for ingestion of pool cleaners in children should be referred to a Poison Center, and could need immediate evaluation, given that ingestion of high-concentration hypochlorite solutions places children at high risk for gastric injury and severe toxicity.[5,6]

The summer months are expected times for unintentional ingestions to occur in children. Items such as sunscreen, insect repellants, fireworks, and pool cleaners pose various levels of harm to children when consumed. It is vital for parents and caregivers to understand the proper use and storage of these items and for providers to be educated on proper triage and management of patients who present following an ingestion. If there are any concerns about ingestion or exposure to these items, contact the Alabama Poison Information Center at 1-800-222-1222 for immediate, accurate, and confidential assistance.

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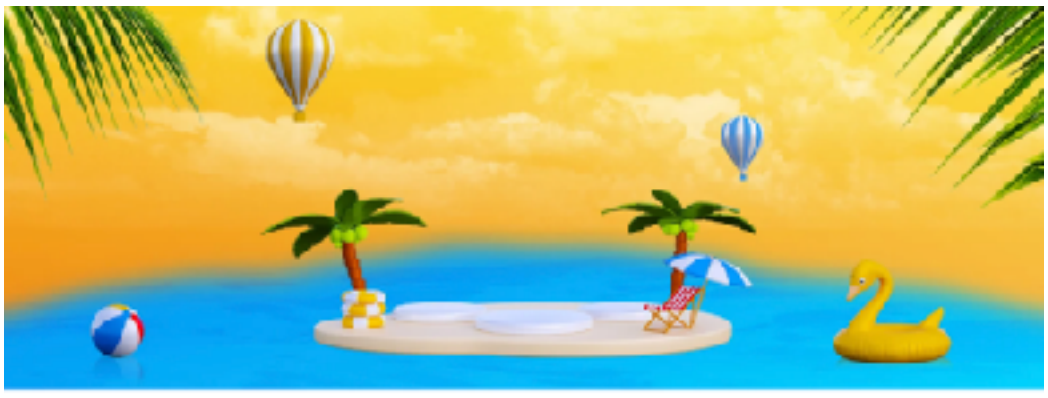

Not so Sweet Surprise: Unintentional Delta-8 Ingestions Mistaken for Candy

By Steven Fruehwald, PharmD
PGY-1 Pediatric Pharmacy Resident

Unintentional ingestions of delta-8 tetrahydrocannabinol products is a rising concern amongst poison control centers across the country. These products are easily mistaken for everyday candy products at the grocery store. The shapes, taste and even packaging look almost identical at first glance. A child, sometimes even an adult, who is looking for a sweet treat may stumble upon these and not give it a second thought before they start consuming them. While they may appear harmless, the after effects can be scary if enough of the product is consumed. Since these products are largely unregulated, there is minimal oversight of quality control and no knowing what is actually in these products. Some examples are shown below (Images 1, 2 and 3)[4].

(THC) is a psychoactive cannabinoid that is derived from the cannabis plant.[1] While delta-8 THC has been known of for some time, there is still limited pharmacokinetic data or robust research available. Tagen and Klumpers performed a literature review comparing delta-9 THC to delta-8 THC and reported similar pharmacokinetics profiles, but less potency of delta-8 THC.[1] Despite these findings, exposures reported to poison centers across the country often result in moderate, and in some cases severe, clinical effects, likely related to higher doses being consumed by inexperienced or naïve users, or unintentionally by young children.

Since these products are highly unregulated and easily accessible, they can vary widely in concentrations of delta-8 THC. Patients who buy these products may fall victim to accidentally taking too much because they didn't read the label properly or mistaking them for something else.

The effects from these products can vary, but the most common effects patients may experience include: decreased level of consciousness, miosis (adults), mydriasis (children), nausea, vomiting, delusions, hallucinations, dizziness, memory deficits and panic/paranoia.[2] In more serious ingestions patients can experience respiratory depression, coma, bradycardia, hypotension, hypothermia and hypotonia.[2] It is important for providers to recognize these symptoms and provide adequate treatment when these patients arrive. If you suspect an exposure, you should call the Alabama Poison Information Center (APIC) at 1-800-222-1222 for assistance and refer the patient to an emergency department.

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Treatment of delta-8 THC exposures usually centers around supportive care. The table below highlights some treatment recommendations based on symptoms.[2] A case report from Bradley et. al. highlighted their experience with two pediatric patients who accidentally ingested a delta-8 THC product. On arrival to the Emergency Department (ED), the patients were agitated and tachycardic, but one of them developed periods of bradypnea that eventually required intubation.[3] The patient was eventually extubated and both patients were discharged after 45 hours.[3] While many adult patients typically present with mild symptoms; pediatric patients can experience more serious adverse effects such as respiratory depression and hypotension that requires more invasive procedures and monitoring. They should be monitored closely and admitted for observation until they return to their baseline.

Since these ingestions are becoming more common, healthcare providers can be involved in educating patients about the dangers of these products and how to prevent future exposures from occurring. Pediatricians are uniquely positioned to discuss products that are maintained within homes and potentially available to young patients. Parents and caregivers should be counseled to either avoid keeping these products in the house or to ensure safe storage away from areas children may find them. Please contact the Alabama Poison Information Center (APIC) for assistance at 1-800-222-1222.

Symptoms	Treatment
Hypotension	IV fluids; pressors (rare)
Bradycardia	Atropine
Agitation and Anxiety	Benzos
Respiratory depression	Supplemental oxygen

Safety First: A Guide to Using Water Beads Safely

By Jasmine Morgan, PharmD
PGY1 Pediatric Pharmacy Resident

Water beads, gel beads, or water balls are popular toys for children and extremely useful for their development. They bring novelty to the toy products since they are small and quite colorful. When exposed to water, they have the capacity to expand in size and then expel the water, providing children with a wonderful texture to manipulate.[1]

Although water beads are fascinating toys for children and can be entertaining, parents and those who are supervising must be aware of the dangers that come with using water beads and the precautions that should be taken. It is imperative to closely monitor children playing with water beads to prevent them from placing the beads in their mouth, nose, or ear. Larger water beads can present a choking hazard. Smaller water beads that are ingested can continue to absorb body fluids. They can continue to grow once inside the body cavity, which can lead to blockages.[1] While those of smaller size that are inserted in the ears can damage ear structures, potentially leading to ear infections and temporary or permanent hearing loss. If inserted into the nose, they can cause injuries to the nasal cavity.[2]

Always provide adult supervision

Store water beads in a secure container and location not easily accessible by children

Contact APIC if any exposure has occurred

Some guidelines should be followed should water beads be kept in the home. Because they are small, bright, and colorful, they could be mistaken for candy and accidentally ingested. As such, care must be taken not to allow children below the age of three to have access to water beads given their comparatively higher risk of placing objects in their mouth. Water beads must be stored in a sealed container and kept out of reach of children at all times. This is especially important given their small size and slippery texture, making them prone to scattering or dispersing.

When it is time for children to play with the beads, close monitoring and supervision should be provided throughout the duration of play. Any beads that are chipped, frayed, or in any way compromised should be discarded since such beads are much more likely to disintegrate and present a chocking hazard.[3]

While it is unlikely for a child to consume more than a couple water beads if properly supervised, it is imperative to reach out to the **Alabama Poison Control Center (1-822-222-1222)** if an ingestion has occurred or is suspected. If a child experiences respiratory problems or is choking, it is advisable to seek immediate medical assistance by going to the nearest emergency department.

Even after presenting to the emergency department, it is important to ensure that the Alabama Poison Control Center is contacted. They are available 24/7/365 to address any questions or assist in managing exposures. The center can help guide healthcare providers through the next steps and assist in triaging if escalation of care is necessary.

If a child is asymptomatic and is tolerating oral fluids, they can be monitored closely at home. The Alabama Poison Information Center will provide close follow-up over 48 hours to ensure no signs or symptoms concerning for potential complications develop.

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