



## This issue features an article regarding common toxins that may be helpful to your clients:

“My dog just ate my raisin bagel, what should I do?” This is a common phone call that we field on the Emergency Service at Metropolitan Veterinary Associates. Dogs, and even Cats, often eat things that they are not supposed to eat. Toxic or harmful ingestions are some of the most common emergencies that we see, almost on a daily basis.

### MOST COMMON TOXINS:

Grapes/Raisins • Chocolate • Lilies  
Non-Steroidal Anti-Inflammatory Medications

#### STEP 1

The first step in treating a potential toxin exposure is to determine what the pet ingested. Fortunately, pet owners usually notice when their dog or cat has eaten something that they shouldn't have eaten. They may witness the ingestion or they may find evidence after the fact, ranging from finding candy wrappers to finding bite marks in something that is considered toxic or flowers missing from a flower bouquet. In most cases the best way to confirm that a toxic substance was ingested is to contact the **ASPCA Animal Poison Control Hotline (1-888-426-4435)**. They have an extensive database and can tell you if what your patient ingested (from food to medications) is harmful and if it requires medical attention. While owners are sometimes hesitant to allow us to contact poison control due to the fee for the call, we always explain that their expertise is well worth the cost as it offers the best chance of treating their pet effectively with the most current information available.

#### STEP 2

The next step in treating toxin exposures is medical intervention. The key to success in treating the toxic patient is early intervention and aggressive therapy. It is essential to obtain a thorough patient history including prior medical history, the specific toxin ingestion, the time from ingestion, and any clinical signs noted at home. Initially it can be important to prevent further toxin exposure via decontamination. In most cases this consists of inducing emesis and administering activated charcoal. While this can be an effective means of limiting toxin absorption it is not advised in patients who are clinically affected by sedation or extreme nausea as this increases the risk of aspiration and significant medical complications.



Emesis is also contraindicated for certain toxins, especially those that may cause esophageal damage such as acids found in battery fluid or household cleaners. Decontamination is generally followed with IV fluid diuresis, supportive and symptomatic therapy, and treatment with antidotes if available (such as 4-MP for ethylene glycol toxicosis and phytonadione for anticoagulant rodenticides). While prognosis varies depending on the toxin and the amount ingested as well as the time elapsed prior to treatment, immediate and aggressive therapy results in a successful outcome in a majority of toxicity cases. The following is a summary of the most common toxicities that we treat at Metropolitan.

## NEWS & EVENTS

### UPCOMING CONTINUING EDUCATION & EVENTS

For questions or to R.S.V.P. for any of these events please contact Sarah Spurgeon at [sspurgeon@metro-vet.com](mailto:sspurgeon@metro-vet.com) or 610.666.1050

### SMALL ANIMAL TRAUMA: Current Topics for Veterinary Techs

co-sponsored by: PVMA

April 24

Reg. & Dinner: 6:30pm, Lecture: 7pm – 9pm

James Buckman, VMD, PhD

Chadwick's Restaurant

Dinner provided – 2 PVMA credits

(See inside for details)

### VETERINARY S.O.S.

We're here to help so no need to distress!

May 10

Reg. & Dinner: 8:30am, Lecture: 9am – 5pm

Suzanne Rau, DVM, DACVIM (Oncology)

Jacqui Niles, BVETMed, SAS, DACVS

Amanda Corr, VMD, DACVO

Breakfast & Lunch provided – 7 RACE credits

(See inside for details)

### CARDIOLOGY IN-PATIENTS: Understanding the diseases behind the treatments

August 7

Reg.: 6:30pm, Lecture: 7pm – 9pm

Risa Roland, DVM, DACVIM (Oncology)

Dinner provided – pending 2 PVMA credits

### IMAGING ROUNDS

Imaging rounds will take place the first Wednesday of every month at Metropolitan Veterinary Associates.

For more information contact Sarah Spurgeon.

### METROPOLITAN VETERINARY ASSOCIATES & EMERGENCY SERVICES

2626 Van Buren Avenue

Norristown, PA 19403

610.666.1050 – fax 610.666.1199

# METROPOLITAN VETERINARY ASSOCIATES®

ESTABLISHED 1986



Providing Specialized Veterinary Services  
& 24 HOUR EMERGENCY CARE

## CARDIOLOGY

Michael Miller, MS, VMD, ABVP  
Risa Roland, DVM, DACVIM (Cardiology)

## DENTISTRY

Paul Orsini, DVM, DACVS, DAVDC

## DERMATOLOGY

Karen B. Farver, DVM, DACVD

## EMERGENCY SERVICES

James Buckman, VMD, PhD  
Jason Chamberlin, VMD  
Jennifer McGough, VMD  
Meghan Romano, DVM  
Nicolas Rose, VMD  
Marisa Suvannavejh, VMD  
Dana Yard, VMD

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John V. DeBiasio, DVM, DACVIM  
James F. Dougherty, MS, VMD  
Leslie A. Kuczynski, VMD, DACVIM

## NEUROLOGY

Jerry W. Northington, DVM

## ONCOLOGY

Suzanne Rau, DVM, DACVIM (Oncology)

## OPHTHALMOLOGY

Amanda Corr, VMD, DACVO  
Stephen L. Gross, VMD, DACVO

## RADIOLOGY

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Jacqui Niles, BVETMed, SAS, DACVS  
Catherine Popovitch, DVM, DACVS, DECVS  
Timothy M. Schwab, VMD  
Joseph Tsang, DVM

## HOSPITAL ADMINISTRATOR

Stacey Connell

## HOSPITAL MANAGER

Suzie Weaver

## GRAPES AND RAISINS

Grapes and raisins are toxic to dogs, however, the toxicosis appears to be idiosyncratic with up to 50% of dogs being unaffected. The specific mechanism of toxicosis is unknown and is not clearly dose-related. Therefore, any amount of ingested grapes or raisins (*yes, even one grape*) is considered to be potentially toxic to dogs. Although the mechanism of toxicosis is not understood, grapes and raisins are known to cause acute renal tubular necrosis and subsequent acute renal failure. Clinical signs of toxicosis include vomiting, lethargy, loss of appetite, and diarrhea within 12-24 hours of ingestion. Signs of renal failure, including decreased urine output, generally occur 48-72 hours after ingestion. The recommended course of treatment for any



grape or raisin ingestion, regardless of the amount ingested or the time from ingestion to treatment, is decontamination (induction of emesis and administration of activated charcoal) followed by 48 hours of IV fluid diuresis with monitoring of renal blood work parameters

for up to 72 hours post-ingestion. In oliguric or anuric patients, peritoneal or hemodialysis may be required. If aggressive treatment is initiated in a timely manner prognosis is good to excellent, but if signs of acute renal failure including oliguria or anuria have occurred prognosis is poor.

## CHOCOLATE

Chocolate is harmful to dogs only at certain doses as it depends on the type of chocolate ingested and the amount of toxic metabolites contained within that chocolate. We see most chocolate ingestion cases around



the holidays (especially Halloween and Easter) when chocolate is readily available in homes. Dark and semisweet chocolates are the most harmful and only require small volumes of ingestion to cause illness, while milk chocolate is the least harmful and requires a much larger volume to be ingested to cause toxicosis. The toxic metabolites of chocolate are theobromine and caffeine (methylxanthines). Caffeine is rapidly absorbed after ingestion while theobromine is more slowly absorbed. Both caffeine and theobromine are metabolized through the liver and it is believed that these methylxanthines can be reabsorbed through the bladder wall as well. Initial symptoms of toxicosis include vomiting, diarrhea, and restlessness or hyperactivity. This can progress to include clinical signs of tachycardia, hypertension, weakness and ataxia, cardiac arrhythmias, seizures, and even death. Depending on the dose ingested the duration of clinical signs can last from 12-72 hours from the time of ingestion. Treatment recommendations

include decontamination with induction of emesis and administration of activated charcoal for up to 72 hours post-ingestion. Decontamination should be followed by 12 to 72 hours of IV fluid diuresis with monitoring of blood pressure and heart rate and rhythm. Urinary catheterization or frequent walks to encourage urination can help to prevent reabsorption of the toxic metabolites across the bladder wall. Continuous ECG monitoring as well as frequent monitoring of blood pressure, temperature, and mental status are recommended throughout the patient's hospitalization. Symptomatic therapy should be instituted as indicated with diazepam for seizures, muscle tremors, or hyperactivity. Persistent sinus tachycardia or hypertension can be treated with a beta blocker such as esmolol or propranolol. Ventricular tachycardia should be treated with lidocaine. While patients who develop cardiac arrhythmias or seizures are considered to have a fair to guarded prognosis, most chocolate toxicities carry a good to excellent prognosis when patients are treated in a timely manner.

## NONSTEROIDAL ANTI-INFLAMMATORY DRUGS

Non-steroidal anti-inflammatories (NSAIDs) include both human and veterinary medications such as ibuprofen, naproxen, Rimadyl, Metacam, Deramaxx, and others. As these veterinary medications are sometimes formulated as flavored treats, we often see dogs ingest the entire bottle of medication and ingest a toxic dose. Dogs can be tempted by the flavored coating frequently found on NSAID tablets as well. Cats most often suffer from NSAID toxicity when owners administer these over-the-counter medications to their pets. At lower doses NSAIDs cause harm to the gastrointestinal system, while at higher doses there are toxic effects to the kidneys. At the highest doses there can even be neurologic signs. Clinical signs of gastrointestinal and renal NSAID toxicosis include anorexia, vomiting, and diarrhea, and can progress to oliguria or anuria in cases of acute renal failure. Ataxia, altered mentation and seizures can occur with CNS toxicity, which occurs most commonly with extremely high doses of NSAIDs. Initial clinical signs generally develop within 1-6 hours of ingestion, however signs of renal failure or GI ulceration can develop anywhere from 12 hours to 3-5 days following ingestion. Treatment recommendations include decontamination with induction of emesis and administration of activated charcoal every 4-6 hours for 24-48 hours following ingestion. Decontamination should be followed by IV fluid diuresis for 48 to 72 hours. Additional therapy consists of gastroprotection with misoprostal, H2 blockers, proton pump inhibitors, and sucralfate, while monitoring urine output and renal bloodwork parameters. Prognosis is variable depending on the dose ingested and the time from ingestion to treatment, but in our anecdotal experience prognosis is often good with aggressive treatment.



## LILIES

Of all potential toxins to cats, lilies are perhaps one of the most dangerous as they are commonly found in homes and are often lethal if ingested. We see lily toxicities throughout the year as many flower arrangements contain lilies and especially around Easter when lilies are readily available in the home. The toxic principle of lilies has not been identified but toxicosis results in renal tubular necrosis and acute renal failure. It only takes one bite of any part of a lily plant (flower, leaves, or stem) to cause acute renal failure in cats. Unfortunately, owners do not often witness the ingestion, but present their cats after they find evidence of plant ingestion in vomitus at home. Clinical signs of lily toxicosis develop rapidly and include vomiting, anorexia, lethargy, and signs of acute renal failure such as polyuria or oliguria. Less commonly cats can present with CNS signs including ataxia, disorientation, and seizures. Laboratory findings can include hemoconcentration and azotemia. Unique to Lily toxicosis is a disproportionate elevation in serum creatinine levels compared to blood



urea nitrogen. The pathophysiology of this shift is unknown. Urinalysis can reveal changes prior to the development of azotemia including isosthenuria, glucosuria in the absence of hyperglycemia, and proteinuria. Treatment recommendations include decontamination (induction of emesis within 1-2 hours of ingestion and a single dose of activated charcoal) followed by 72 hours of IV fluid diuresis and daily monitoring of renal values. It is believed that decontamination and fluid diuresis initiated within 6 hours of ingestion can prevent the development of renal failure. Peritoneal or hemodialysis is recommended for the anuric patient. Prognosis is good if treatment is instituted within 18 hours of exposure. Once renal failure develops prognosis becomes poor to grave.

While these are the most common toxins that we treat at Metropolitan Emergency Services, the list of toxicities that we have seen is extensive, including paint balls, baclofen, amphetamines, anti-depressants, sleep aids, rodenticides, mushrooms, ethylene glycol, xylitol, and marijuana just to name a few. In general we find that client education is the most effective way to prevent intoxications. Fortunately, when appropriate treatment is instituted in a timely manner, the outcome of most toxin ingestions is favorable and are rewarding emergencies to treat.

## METROPOLITAN VETERINARY ASSOC. EMERGENCY DEPT. & SERVICES

### DEPARTMENT:

James Buckman, VMD, PhD · Jason Chamberlin, VMD  
Jennifer McGough, VMD · Meghan Romano, DVM  
Nicolas Rose, VMD · Marisa Suvannavejh, VMD  
Dana Yard, VMD

Available 365 days a year, 24 hours a day. We offer our veterinary clients the highest-level emergency veterinary medicine, emergency veterinary surgery and critical care for their pets.

### IF YOU ARE EXPERIENCING AN EMERGENCY

Please call MES at 610-666-1050 before coming. Even in a dire emergency the staff may be able to suggest immediate first aid measures and give you specific travel directions to the hospital. In addition the staff will be able to prepare for your animal's arrival and care based on this initial estimation of your pet's situation. To aid our staff in swift, accurate diagnosis, our facility is equipped for blood analysis, radiology, cardiac EKG's, as well as many routine diagnostic procedures.

Like a human ER, we work on a triage basis to decide which patients are in most immediate need of care. Unfortunately, like the ER there is often a wait. Our patients are triaged upon arrival. We see patients based on the life threatening nature of their problems. It's possible that patients who arrive after you will be seen first. It's possible that patients who are seen before you may not appear to be injured or sick. However, there are often things happening to these patients that require immediate attention. This is why we triage.

## CONTINUING EDUCATION CLASSES

### "SMALL ANIMAL TRAUMA: CURRENT TOPICS FOR VETERINARY TECHNICIANS"

BY: James Buckman, VMD, PhD

WHEN: Thursday, April 24, 2014

TIME: Registration & Dinner: 6:30pm, Lecture 7pm – 9pm

WHERE: CHADWICK'S RESTAURANT

2750 Egypt Road, Audubon, PA 19403 – 610.382.9300

RSVP: April 17, 2014

2 PVMA Credits, Dinner will be provided

#### TRAUMA CATEGORIES

- Types and Causes
- Signalment
- Outcomes

#### TRIAGE, CLINICAL APPROACH, MONITORING and CARE

- General assessment and Polytrauma
- Specific Systems

#### RESEARCH and DEVELOPMENT

- Veterinary Committee on Trauma/Veterinary Trauma Centers
- Specific areas of Research
  - Head/Neurologic Trauma
  - Thoracic Trauma
  - Abdominal Trauma
  - Orthopedic Trauma
  - Soft Tissue Trauma

#### QUESTION/ANSWER SESSION

Please RSVP to any of the CE classes to Sarah Spurgeon at 610.666.1050 or [sspurgeon@metro-vet.com](mailto:sspurgeon@metro-vet.com).

### VETERINARY S.O.S.

(SURGERY • ONCOLOGY • SYSTEMIC DISEASE)

### WE'RE HERE TO HELP, SO NO NEED TO DISTRESS!

BY: Suzanne Rau, DVM, DACVIM (Oncology),  
Jacqui Niles, BVETMed, SAS, DACVS,  
Amanda Corr, VMD, DACVO

WHEN: Saturday, May 10, 2014

TIME: Registration: 8:30am, Lecture 9am – 5pm

WHERE: METROPOLITAN VETERINARY ASSOCIATES

2626 Van Buren Avenue, Norristown, PA 19403

RSVP: May 3, 2014

7 RACE Credits,

Breakfast and Lunch will be provided

#### TOPICS:

- Mast Cell Tumors
- Wound Management
- TPLO
- Ocular Manifestations of Systemic Disease



## PET LOSS SUPPORT GROUP

Many of our employees understand the depth of loss experienced when a beloved four-legged family member passes. For that reason, Metropolitan provides a pet loss support group to help grieving owners in need. Our support group is designed to provide grieving pet parents with a safe, confidential environment to share their feelings with others who have experienced pet loss.

Meetings are held once a month onsite at Metropolitan and are free of charge for your clients (all family members are invited to attend). The group is led by Dr. Cari Thomson and co-led by psychiatrist Dr. Carol Tavani.

Please contact us at 610.666.1050 if you would like to have Pet Loss Support Group brochures mailed to your office. Clients are able to visit our website to find meeting dates and times, general information and recommendations on obtaining help outside of the group setting.

Pet Loss Support Group meetings are held the first Thursday evening of each month for your clients (and are free of charge).



## METROPOLITAN VETERINARY ASSOCIATES

ESTABLISHED 1986

2626 Van Buren Avenue  
Norristown, PA 19403  
610.666.1050 – fax: 610.666.1199  
Metro-Vet.com

## HOW YOUR DOG CAN “BECOME A LIFE SAVER”

### Why Have your Dog Donate?

- There are very few national animal blood banks
- One donation can help save a life of up to four pets
- It can help spread the word that animals need blood too
- Help educate the community

### BLOOD DONOR REQUIREMENTS

- Must weigh at least 50 lbs. and be in good body condition
- Be between 1 year and 6 years old
- Have a friendly disposition, be happy to meet people, and be easy to restrain
- Have proof of current vaccination status
- Must be free of infectious disease
- Must not have a heart murmur
- Must not have taken any medications within the 14 days prior to donation other than heartworm and flea and tick preventative.
- Must be on heartworm, flea/tick preventative year round (i.e. monthly)
- Must not have received vaccinations within 4 weeks prior to donation
- Owner must agree to get the required lab tests done on their pet to maintain status in program:
  - 1) **General Health Check (CBC/Chemistry)** – yearly
  - 2) **Blood Borne Pathogens** – yearly
  - 3) **Blood Type** – pre-screening only
  - 4) **4DX SNAP Test** – A negative test will be required within 2 months prior to each donation
- Owner must be willing to allow their pet to donate blood at least 3 times within a calendar year (not more frequently than every 8 weeks).



### HOW DO WE THANK YOU?

- Annual screening bloodwork until retirement at our expense
- Complete physical examination and RBC count at each donation
- Blood products at no charge for the donor's lifetime
- One month Frontline & Heartgard free of charge
- All the cookies and hugs your pet can handle
- Most importantly, the satisfaction that you and your pet are saving lives with each donation!

To find out more information and if your dog is eligible please visit:  
[Metro-Vet.com/about-us/news-and-events/become-a-lifesaver//](http://Metro-Vet.com/about-us/news-and-events/become-a-lifesaver//)

To schedule an appointment to have your dog pre-screened please contact  
Angie Dickens at: 610.666.1050 or [adickens@metro-vet.com](mailto:adickens@metro-vet.com).