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## Animal Specialty Hospital of Florida

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### Syncope

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Dogs and cats may occasionally experience syncope (fainting). Syncope may occur for a number of different reasons. Basically, the blood pressure falls low enough that the brain doesn't receive enough oxygen, resulting in transient loss of consciousness. When dogs and cats lose consciousness, it may appear to be a seizure. Most of the time, patients will stop whatever it is they were doing, stretch out their front legs, stretch their neck and throw their head back, fall over to one side or another, and may involuntarily vocalize, urinate and/or defecate. Usually, fainting episodes are brief, lasting less than 10-20 seconds or so, and patients often recover and behave normally immediately afterward. While these episodes are frequently alarming to most pet owners, they may or may not be life-threatening. A neurologic seizure is typically associated with convulsions, paddling of the legs, clenching of the jaws and sometimes drooling. A seizure is usually followed by a period during which the animal does not act normally, and may even appear to be blind. Differentiating syncopal events from neurologic seizures may in some cases be difficult.

Syncope may result from any of one or more different types of arrhythmias, which are abnormal heart beats or rhythms. If an arrhythmia results in syncope, the basic cause is a decrease in blood pressure that results from a heart rate that is either excessively fast (tachycardia) or slow (bradycardia). Examples of tachycardias that may cause syncope include ventricular tachycardia, supraventricular tachycardia, and atrial fibrillation. Ventricular tachycardia may very well be life-threatening. Examples of bradycardias that can result in fainting include atrioventricular block, sick sinus syndrome and atrial standstill. Treatment for tachycardias usually involves oral antiarrhythmic medications. Bradycardias can sometimes be managed with medication, but often require implantation of a permanent artificial pacemaker.

Heart disease may result in syncope for a number of different reasons. Patients at high risk for or a history of congestive heart failure may faint if they start having congestion or fluid in the lungs. This usually is the result of vasovagal syncope, and resolves with appropriate medical therapy for heart failure. Some patients with heart disease may faint from the development of arrhythmias (i.e. atrial fibrillation) which results from underlying heart chamber enlargement. Some patients with severe heart chamber enlargement may even suffer from a rupture or tear in the heart, leading to bleeding into the pericardial sac.

Pericardial disease can cause syncope in small animals. Tumors on the heart itself may bleed into the sac that surrounds the heart (pericardial sac). When too much fluid accumulates right around the heart, the heart may become compressed, and this is what leads to a low blood pressure, which can in turn cause fainting.

Occasionally, patients may experience collapse and syncope because of internal bleeding in the chest or abdominal cavities. Rupture of a mass on the spleen or liver may cause bleeding into the abdomen.

Patients may have other signs of bleeding, which may include difficult or labored breathing and pale gums/tongue color in addition to collapse. Immediate veterinary attention is advised in these situations, as the bleeding may become life-threatening.

Vasovagal syncope is a complex syndrome that may cause patients to faint. Typically, in response to excitement/stimulation, these patients have an inappropriate drop in the heart rate and/or dilation of the blood vessels, resulting in a decreased blood pressure and fainting. This may result from congestive heart failure, or may be stimulated by other activities such as excessive coughing, vomiting/retching or even defecation. Definitive diagnosis of this condition is fraught with difficulty in small animals, and head-up tilt table testing is used in human medicine. Holter or event monitors may be helpful to document a low heart rate associated with the episodes.

Chest x-rays, echocardiography (ultrasound of the heart), EKG, and blood pressure evaluation are generally recommended for any patient with syncope. A Holter monitor is a 24 hour ambulatory EKG. This allows us to document the heart rate and monitor for any arrhythmias that occur in a 24 hour period. The patient has electrodes attached to the chest and a small monitoring device is worn in a vest-like apparatus. An event monitor records brief periods of the EKG in response to the push of a button, and can be worn for longer periods in patients that have infrequent episodes. Holter and event monitoring may be helpful in patients where an underlying cause for syncope is uncertain based on the results of previous tests.