



### **What is pacemaker therapy?**

Pacemaker therapy is utilized in our veterinary patients that are symptomatic for a bradyarrhythmia (inappropriately slow heart rate). The most common arrhythmias that are treated with pacemaker therapy are 3rd degree atrioventricular block, sick sinus syndrome, or atrial standstill.

### **How is the procedure performed?**

Pacemaker implantation is a surgical procedure that requires guidance with fluoroscopy (continuous real time radiography). The jugular vein (large vein in the neck) is accessed surgically and the pacemaker lead is implanted, most commonly in the right ventricle. The lead is attached to the generator (battery power for the pacemaker system) and the generator is fixed under the skin in the neck region. The pacemaker can be programmed externally using an interrogator, a device that communicates with the generator. This allows us to adjust the heart rate and check battery life from outside the patient using a wand that sits on the skin over the top of the generator.

### **What can I expect the day of the procedure and the weeks after?**

If the pacemaker is a scheduled procedure, your pet will be admitted in the morning, typically fasted for 8-10 hours with certain exceptions. Your pet will be medicated with slight sedation prior to anesthesia to alleviate pain and anxiety. Intravenous access in the form of an IV catheter will be placed for administration of medication, fluids, and other use, should immediate intravenous access be needed. The surgery will be performed in the morning and you will be notified once your pet is in recovery. Generally, your pet will stay one night in the hospital following surgery to ensure there are no lingering effects of the medication used during anesthesia, or any immediate complications associated with the surgery prior to being discharged.

For one month after pacemaker implantation, it is very important that your pet have strict confinement to allow the pacemaker to scar into place. This assists in decreasing the risk of lead dislodgement. The complication rate of pacemaker implantation is relatively low (less than 5% for major complications). Every six months post-implantation, the pacemaker needs to be rechecked to make sure it's functioning properly and the battery life remains adequate. In general, the pacemakers we place have an average lifespan of six years. If your pet reaches the end of that generator's battery life, the generator can be replaced.

### What are the possible complications associated with pacemaker therapy?

As with any procedure requiring general anesthesia, there is a potential for adverse reaction to the drugs being used. Drug reaction may result in mild allergic reaction and hives to cardiopulmonary decompensation, and in rare circumstances loss of the pet. Other complications can include lead dislodgement and lead infection. Antibiotics are used postoperatively to decrease the risk of infection. For the rest of your pet's life, if an infection is suspected anywhere in the body (skin, ears, urinary tract, etc.), it should be treated aggressively to decrease the risk of pacemaker infection. Your cardiology team will go over a full list of pacemaker discharge instructions when your pet is discharged from the hospital.

\*\*For informational purposes all complications are not listed. You are encouraged to speak with your veterinarian regarding complications and expected outcomes for your pet.

