

### **Beta-Blockers (Sotalol, Atenolol, Carvedilol)**

A beta-receptor antagonist (“beta-blocker”) has been added to your pet’s therapy for heart disease. In a patient with heart disease, the sympathetic nervous system is activated and produces epinephrine (adrenaline) and norepinephrine. These substances (called “catecholamines”) cause stronger heart contraction, but also cause rapid heart rates and elevations in blood pressure. Beta-blockers antagonize the effects of epinephrine and norepinephrine, leading to decreased heart rate and blood pressure, as well as decreased strength of cardiac contraction.

Beta blockers may be used for several reasons. In animals with rapid and irregular heart rhythms, these drugs may be used to slow the heart and to decrease the number of abnormal beats. In animals with diseases leading to inappropriate release of these catecholamines (for example, hyperthyroidism), beta blockers may be used to block the effects of the excess catecholamines. Beta blockers may also be recommended for long-term therapy of diseases that lead to thickening of the heart walls in order to slow the heart rate to encourage good coronary perfusion and lower the oxygen demands of the thickened heart muscle.

Because beta blockers reduce the strength of heart contraction, animals with poor contractile function may have to have a reduced dose of these drugs, or may start at a very low dose and increase it gradually. Occasionally, an animal with poor contractile function may develop pulmonary edema (fluid in the lungs) when receiving a beta blocker – discontinuing the beta-blocker and treating the pulmonary edema with diuretics can remedy this problem. In some cases, beta-blockers may cause the patient’s heart rate to drop too low. This appears outwardly as lethargy or weakness. In some cases, animals may appear short of breath. Your veterinarian may request that you monitor your pet’s heart rate in order to be sure that it remains in the target range. A video about taking your pet’s heart rate can be found here: <http://www.youtube.com/watch?v=jqbzVEyUK9c>.

If you notice a sudden change in heart rate, shortness of breath or signs of weakness or lethargy when your pet is receiving beta blockers, please call the consulting veterinarian immediately. There are many different types of beta blockers with different dosing recommendations and with different potential side effects; please discuss the specifics of the drug your pet is receiving with your pet’s veterinarian or cardiologist. Beta blockers must be given as prescribed; **do not stop this medication suddenly or alter dosing without the guidance of your pet’s veterinarian.**