

# Stem Cell Therapy for your Dog

You have probably heard a lot about the promise of stem cell therapy in the media over the past few years. Veterinarians and physicians are working together to learn more about the possible applications for this exciting new field of research and medicine. We are now able to offer stem cell therapy for your dog using his own adult stem cells. Current uses for stem cell treatment in dogs include arthritis, tendon injuries, and ligament injuries. In the future, stem cells may be used to treat chronic liver disease, kidney disease, atopy (allergies), or other immune-mediated diseases.

## What are Stem Cells?

Adult stem cells are cells that are present in every tissue of the body. They have the ability to become many different tissue types (i.e. a stem cell has the potential to become cartilage, muscle, bone, nerve, or many other types of cells). We currently do not use stem cells from embryos in veterinary practice, only adult cells.

## How do Stem Cells Work?

Stem cells work in several different ways. They decrease scar formation, increase blood vessel formation to the site of injury, and decrease inflammation. They are able to hone in on the site of injury and differentiate into whatever tissue type is most needed. In essence, they promote regeneration of body tissues while decreasing injury to those tissues. For instance, in an arthritic dog, stem cells injected into the joint can help to rebuild joint cartilage and decrease inflammation, thereby greatly decreasing pain.

## Is my Pet a Good Candidate for Stem Cell Therapy?

Your pet may be considered a good candidate if:

- She does not respond well to NSAID treatment, or is unable to tolerate NSAIDs.
- Orthopedic surgery would not benefit her
- She has osteoarthritis, immune mediated polyarthritis, or a tendon or ligament injury
- She needs long term pain medications
- You prefer a more natural and holistic approach to medicine

## What is the procedure for using Stem Cell Therapy?

If we decide your pet is a good candidate for stem cell therapy, we will schedule an appointment to surgically collect fat from the area behind his shoulder blade. The fat will be sent overnight to the lab, where the stem cells will be harvested from it. The stem cells will then be shipped back to us overnight. 48 hours after the original fat collection, we will inject the isolated stem cells directly into your animal's painful joints. If many joints are affected, an intravenous dose may be given. Most patients will begin to show improvement within 2-4 weeks.

### **How effective is Stem Cell Regenerative Medicine?**

Regenerative medicine is a new field, and there are still many unknowns when it comes to efficacy. For orthopedic conditions, approximately 80% of dogs will show slight to significant improvement. About 30-35% of treated dogs have an excellent response, where the owners perceive they are pain free without any medication. Another 25-30% will have a reduced dependence on NSAIDs and other pain medications. The rest will continue to need all of their current medications, but will be more comfortable. 20% of dogs receiving this treatment will have little or no response. It is not currently known why some animals respond so well, and why some do not respond at all.

When stem cell treatment works well, the effects of an intra-articular injection often last for years. If the injection is given intravenously, benefits typically only last several months. Included in the price of the stem cell transplant is 1 year of cell storage at the laboratory, so that if additional joints need treatment, or re-treatment is needed, they can be accessed without another surgery to harvest fat.

### **How much does a Stem Cell Transplant Cost?**

The current cost for a stem cell transplant is between \$2500 and \$3000, depending on how many joints need treating, and whether or not we need to take X-rays of the affected joint(s).