

Stem Cell Therapy

I've heard about stem cell therapy in dogs and cats. What is it?

Stem cells are unspecialized cells that are capable of renewing themselves through cell division. Under certain conditions, they can become a specific tissue or organ cell. In many tissues, stem cells serve as an internal repair system, replacing damaged or dead tissues by reproducing and turning into the needed cells. This type of repair is common in the gut and bone marrow, where stem cells routinely replace damaged tissues. In other organs such as the heart and pancreas, stem cells only divide under very special conditions. Because of this, certain tissues or organs are more likely to benefit from stem cell therapy than others.

Stem cell therapy is often referred to as regenerative medicine, a technique that enables the body to repair and regenerate damaged tissues.

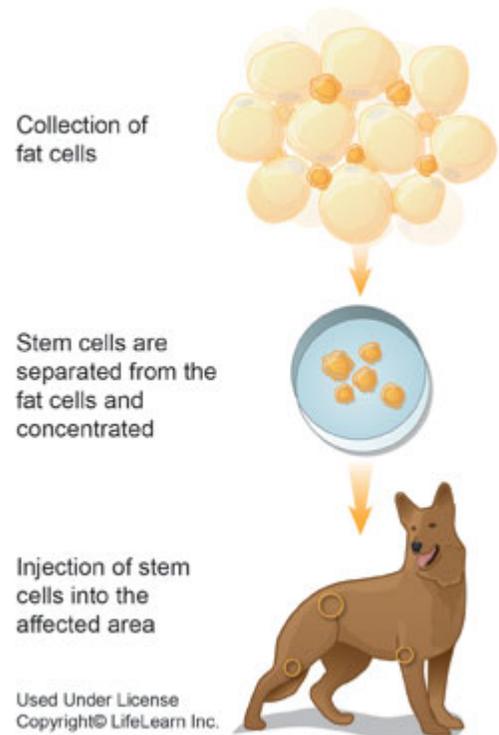
Stem cell therapy commonly refers to the process of placing stem cells from the body into diseased or damaged tissues, such as a torn ligament in the knee or perhaps an arthritic joint. This process is often referred to as regenerative medicine, a technique that enables the body to repair and regenerate damaged tissues.

Stem cells can differentiate into blood vessel, bone, cardiac, cartilage, fat, ligament, liver, muscle, nerve, and tendon tissue. Stem cells can currently be obtained from the bone marrow and fat (adipose) tissue in dogs, cats, and horses.

What conditions can be treated with stem cell therapy?

The most common use of stem cell therapies has been in the treatment of osteoarthritis in dogs and cats. Other potential uses include repairing bone, ligament, and spinal cord injuries and treating kidney and liver disease, cardiomyopathies (a form of heart disease), and certain inflammatory diseases of the skin and gut. Although these other uses are largely hypothetical at this time, clinical research into the use of stem cells to treat these conditions is ongoing.

Cancer treatment with stem cells is not considered appropriate because of the risk of causing the cancer to worsen, grow, or spread more rapidly if stem cells are introduced.



How is stem cell therapy performed?

After a definitive diagnosis of the condition has been determined and your pet has been selected as a suitable candidate, there are essentially three steps in stem cell therapy:

1. The first involves the collection of fat from your dog, cat, or horse. This procedure is typically performed while the patient is under anesthesia. Fat cells are most often taken from a small incision in the groin or shoulder region.
2. The fat cells are then transferred to a specialized laboratory, where stem cells are obtained and concentrated.
3. The final stage of treatment is injection of stem cells into the affected area, such as a hip, elbow, or knee joint. This step also generally requires some form of anesthesia for your pet.

Other than rest and supportive measures, minimal special care is required after treatment.

Most cases will be performed as an out-patient procedure. Other than rest and supportive measures, minimal special care is required after treatment.

Is stem cell therapy safe?

Because the stem cells are from your pet, there is little risk of reaction or rejection. Any injection into a joint or tendon involves some risk of inflammation, infection, or injury. Your veterinarian will discuss your pet's specific risk factors with you before treatment.

How can I tell if stem cell therapy will help my pet's condition?

The decision to use stem cell therapy is complicated. It is based on your pet's specific condition, age, breed, previous treatment and response, severity and duration, and anesthesia/sedation risk. The laboratory providing the stem cells will also be consulted to help determine if your pet is a suitable candidate.

Unfortunately, there is currently no definitive way to predict which pets will benefit from stem cell therapy. Some patients respond favorably only to relapse in the future. Other patients experience remarkable improvement soon after treatment, while for others, it may take months for any appreciable changes to occur.



How long does it take to work?

Some patients will show improvement within several days, while others will require several weeks to months before any changes are seen. It is important to note that not all patients treated with stem cells will respond positively. Stem cell therapy can be repeated in cases where poor to no improvement is observed.

VET STEM BIOPHARMA

Here at Heritage Animal Hospital, we use a laboratory in California called VetStem Biopharma. The fat sample collected from your pet gets overnight shipped to the lab and is processed immediately. The process the fat sample and extract as many stem regenerative cells as possible. They then prepare the cells for the appropriate amount needed for injection and the samples are shipped back the next day. The whole process is about 48 hours after collection.

Procedure:

Day 1 Collection: Your Pet is placed under general anesthesia, and falciform fat is removed from a small incision in the abdomen, generally the size of a spay incision. The sample is prepped and shipped to California.

Day 2: VetStem processes the fat collected and harvests stem cells and allocates them into the number of injections needed. The number of cells varies based on the size of the submission requested by the doctor.

Day 3 Infusion: The pet has likely remained in hospital for recovery from the initial surgery (orthopedic, biopsies, soft tissue procedures etc). The cells usually arrive 48 hours later around 12:00pm. The doctor schedules time that afternoon to mildly sedate your pet once more and infuse the stem cells into the locations they are needed most. In some cases as well and IV injection will be given to allow the stem cells to find where they are needed. You then have a time to pick your pet up later that night or the next morning with specific instructions to keep them quiet during recovery.

Follow up: Each doctor will have their own regiment for follow up and recheck exams. Please follow your discharge instructions given after surgery and with your stem cell information.

Future Need:

The first year of storage for any additional doses is free. After 1 year a fee for each additional year is charged through the laboratory. These samples can be called up by your veterinarian at any time if treatment is needed a few years down the road or in a different location.

Cost:

The cost of Stem Cell Therapy can range between \$2,000-\$4,000 additional to the surgery cost if a surgery is performed at the same time as fat collection. The large variation depends on the age of the patient and how many sites are affected and how many doses are needed. This includes full workup (bloodwork, urinalysis, radiographs, ultrasound and EKG) if warranted to make sure there is no sign of cancer in your pet prior to stem cell therapy. The charges include all of the shipping and processing and sedation needed at time of infusion. NOTE: If future samples are needed or this is the second time for infusing, the cost is greatly reduced as the harvesting and samples have already been processed.

STEM CELLS ARE A SCIENCE THAT WE HAVE FINALLY BEEN ABLE TO HARVEST TO PROVIDE OUR ORTHOPEDIC CASES AND MANY OTHER ISSUES THE SUPPORT TO HEAL AND IMPROVE QUALITY OF LIFE. IF YOU HAVE ANY FURTHER QUESTIONS REGARDING THE PROCEDURE OR WOULD LIKE TO SET UP A CONSULTATION, PLEASE FEEL FREE TO CONTACT US.

Contributors: Ernest Ward, DVM

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