



# What's Up Doc?

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## A-B-C-D – IRAP – PRP – Stem Cell Therapy

How do all these regenerative therapies work? How do they heal horses with tendon, ligament, bone injuries and more...?

The main principle of regenerative therapy is cellular communication. This is done by the chemicals that cells use to talk to each other. Growth factors and cytokines are addressed with regenerative therapies that direct the healing process. These newer regenerative therapies aid in healing tissue to approximately the same strength and elasticity that the horse previously possessed prior to injury, with minimal scarring and reduces inflammation that could delay healing. Regenerative therapies help cells grow and repair in an organized way, creating a scaffold which allows for a more resilient tissue to grow, therefore helping prevent reinjury.

**Stem Cell Therapy:** Stem cells are the transformers of the cell world. They are undifferentiated cells that can differentiate into bone, tendon, ligament, muscle, or cartilage. A veterinarian takes an aspirate of bone marrow which is sent to a lab that expands the cell population for a larger and more concentrated sample. These cells are then placed directly into the lesion. The stem cells help with the reduction of inflammation, stimulation of repair, and improve fiber alignment/organization which

yields a stronger tendon with better quality. Though it is the most expensive regenerative therapy, stem cells have been shown to assist in previously untreatable conditions like severely laminitic horses.

**PRP:** Platelets are the smallest of all the blood cells and are the first responders for injuries. They are responsible for clotting. To obtain platelet-rich plasma, we first draw blood from the horse and inject the whole blood into a separator and spin it in a centrifuge which separates the red and white blood cells, leaving concentrated platelets. This creates plasma that has concentrated platelets or PRP to be injected directly into the lesion or around the lesion to assist the healing process. PRP has been shown to be helpful with tendon injuries, and suspensory desmitis and can also be used in difficult skin wound management.

**IRAP:** Interleukin-1 Receptor Antagonist Protein or IRAP is an anti-inflammatory therapy. This therapy blocks interleukin-1, which is a major inflammatory chemical that the body produces when there is an injury. IRAP happens naturally but it has greater effect when amplified with veterinary intervention. At Countryside we use "ProStride"® which is a more advanced form of IRAP produced from PRP. A specially formulated separator is run through a centrifuge. This separator breaks down blood into proteins, platelets, white blood cells and red blood cells. For IRAP therapy we use the proteins. Traditionally this was used as a joint therapy, but research has shown improvements

when used in soft tissue injuries as well. This is a natural, drug free, method of therapy. The Owl Manor Veterinary “ProStride”<sup>®</sup> formula of IRAP only takes 20 minutes to prepare compared to other brands that require a much longer incubation period.

Regenerative therapies have evolved a lot in the past 15 years and continue to do so at a rapid rate, which is great news for the equine community! Some injuries that were previously deemed un-treatable have become standard in the range of injuries and are treatable now with the right therapies and care. Countryside Large Animal Vet offers all the regenerative therapies mentioned in this article. Call 970-351-7045 with any questions you may have about your horse and regenerative therapy.

## A Farewell Note from Dr. Morris

What an amazing experience and adventure this year has been! My time at Countryside has been an unforgettable and invaluable opportunity as a young veterinarian. Thank you for the privilege of working with you and your animals this year. Getting to work alongside such a dedicated, talented team at Countryside has enabled me to grow and learn from example the quality veterinarian I aspire to be. I will cherish and take all of my experiences here to my new job at Colorado Equine, where I will continue to deliver the Gold Standard of Care Countryside has taught me to provide. I will continue to work on equine medicine with Dr. Unruh and Dr. Brown and am eager to meet the 4-H community around Peyton and provide care for the food animal clients in the area. Thankfully, I will just be down the road near Colorado Springs, and look forward to visiting soon and often! The 2017 Greeley Stampede was my first ever rodeo experience and I don't plan on missing out on all the fun to be had this summer.

~Dr. Jody Morris



Rabies is regularly found among wildlife (especially skunks) in Colorado, even in urban areas. We monitor wildlife and test animals showing signs of rabies to determine how far the disease has spread among skunks.

Rabies is a serious threat to humans and animals. Our lab-based monitoring helps us prevent cases in people and control the spread of rabies in animals, decide what treatment to use when humans have been exposed, figure out how to manage animals that might have been exposed, and add to the science of the disease.

So far in 2018, 177 animals from Colorado have tested positive for rabies. Of those, 75 rabid animals were known or strongly suspected of exposing 143 domestic pets, 58 livestock animals, and 36 people.

**Lab-confirmed, rabies positive animals by county, Colorado, Jan. 1 - May 24, 2018**

County	Bat	Skunk	Other wildlife	Domestic	Total
Arapahoe	1	1			2
Archuleta		1			1
Boulder		1			1
Broomfield			1 (raccoon)		1
Douglas				1 (alpaca)	1
Denver		66			66
El Paso		49			49
Elbert		3			3
Fremont	1				1
Jefferson		11			11
Larimer		17			17
Las Animas		1			1
La Plata		1			1
Lincoln		2			2
Morgan		1			1
Pueblo	6	1		1 (dog)	8
Weld	1	10			11
<b>Total</b>	<b>9</b>	<b>165</b>	<b>1</b>	<b>2</b>	<b>177</b>