



# Kopec Veterinary Associates

24 Hour Mobile Equine Service And Haul In Facility

55 Prospect Road, Elizabethtown, PA 17022  
717-361-8700, 717-361-8708 fax  
www.kvaequine.com

## Regenerative Therapy

Regenerative therapies are those that manipulate the body's biological mechanisms to stimulate healing

Examples: IRAP, PRP, stem cells, shockwave therapy, laser therapy

### Why?

- Can decrease recovery/rehabilitation period
- Severe injuries
- Chronic/non-resolving injuries
- Injuries where conservative therapies have been unsuccessful

### Platelet Rich Plasma (PRP)

- Easy to obtain and can be done "stall side"
- High concentration of platelets to area of interest
- Increases amount of growth factors at the site of injury
- Intra-lesional therapy
- \$

### Interleukin 1 Receptor Antagonist Protein (IRAP)

- Easy to obtain and is ready to use within a few days (has to be incubated)
- Blocks inflammatory proteins therefore creating a healthier environment
- Intra-articular therapy
- \$\$
- Typical IRAP Treatment Course
  - Blood drawn usually yields 6-8 treatments
  - Treatment course consists of 3 injections 7 days apart
  - Remaining doses can be kept frozen for up to 1 year

### Stem Cells

- Derived from fat, bone marrow and umbilical cord blood
- Anti-inflammatory properties, influence cell-signaling factors, and orchestrate formation of a tendon-like tissue matrix
- Time
- Intra-lesional, intra-articular, regional limb perfusion
- \$\$\$

Brian Kopec, D.V.M.  
Molly C. Kopec, D.V.M.

Heather M. Crather, D.V.M.



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### **Shockwave Therapy**

- Utilizes sound waves to promote healing
- Increases growth factors at site of application
- Increases neovascularization and more parallel collagen fibers
- When used on bone, can increase the number of osteons present and promote osteoblast activity
- \$\$-\$\$\$

### • **Low Level Laser Therapy (LLLT)**

- Stimulates fibroblast proliferation
- Increases circulation
- Reduces inflammation
- Pain control
- \$\$-\$\$\$

### **Non-Regenerative Therapies**

#### **Novobrace**

- Crosslinking agent that provides mechanical support to a soft tissue injury
- Does not depend on biological response
- Prevents further propagation of the lesion
- Provides stronger healing
- Return to full work faster
- \$\$\$

#### **Osphos**

- Bisphosphonate
- Inhibits bone resorption
- Intramuscular injection

### **When to Use Which Therapy?**

#### **Bucked Shins**

- Shockwave
- NO Osphos: can lead to severe breakdown injuries



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## **Carpal Fractures**

- IRAP
- Legend

## **Sesamoiditis**

- Osphos (depending on age!)
- Stem cells—regional limb perfusion

## **Suspensory Desmitis**

- PRP
- Stem cells
- Shockwave
- LLLT
- Novobrace

## **SDFT and DDFT Desmitis**

- PRP
- Stem cells
- Shockwave
- LLLT
- Novobrace

## **Collateral Ligament Desmitis**

- PRP
- Stem cells—regional limb perfusion
- Shockwave

## **Degenerative Joint Disease**

- IRAP
- Shockwave Therapy
- LLLT
- Osphos

## **Navicular Syndrome**

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- IRAP
- Stem cells
- Osphos
- Shockwave

## **Can I combine therapies?**

- Yes!
- Often times stem cells or PRP can be administered intra-lesionally after a shockwave or low level laser therapy
- Regenerative therapies can also be combined with Adequan, Legend, Pentosan, etc

## **Preventative Therapies**

### **1. Legend**

- Intravenous or intra-articular
- Anti-inflammatory
- Prophylactic treatment of degenerative joint disease
- Mixed results in studies
- Treatment Protocol: Treatment may be repeated at weekly intervals for a total of three treatments.

### **2. Adequan**

- Intramuscular or intra-articular
- Polysulfated glycoaminoglycan
- Works best IM before cartilage degradation occurs
- Treatment Protocol: Injection every 4 days for total of 7 treatments\*

### **3. Pentosan**

- Intramuscular
- Decrease cartilage damage
- Treatment Protocol: One injection every week for 4 weeks

### **4. Nutraceuticals**

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- Oral
- Main problem: ability of horse to absorb nutrients
- Glucosamine: not absorbed well
- Chondroitin sulfate: small molecular weight = better absorption (powdered shark cartilage or bovine trachea cartilage)
- ASU: promising studies in regards to lameness
- $\alpha$ -linolenic acid and omega-3 PUFA: reduce inflammatory mediators
- Methylsulfonylmethane (MSM): anti-inflammatory, some claims to be helpful in soft tissue injury
- Yucca: anti-inflammatory
- Devil's claw: anti-inflammatory
- BoneWise (KPP): helps to promote stronger bones