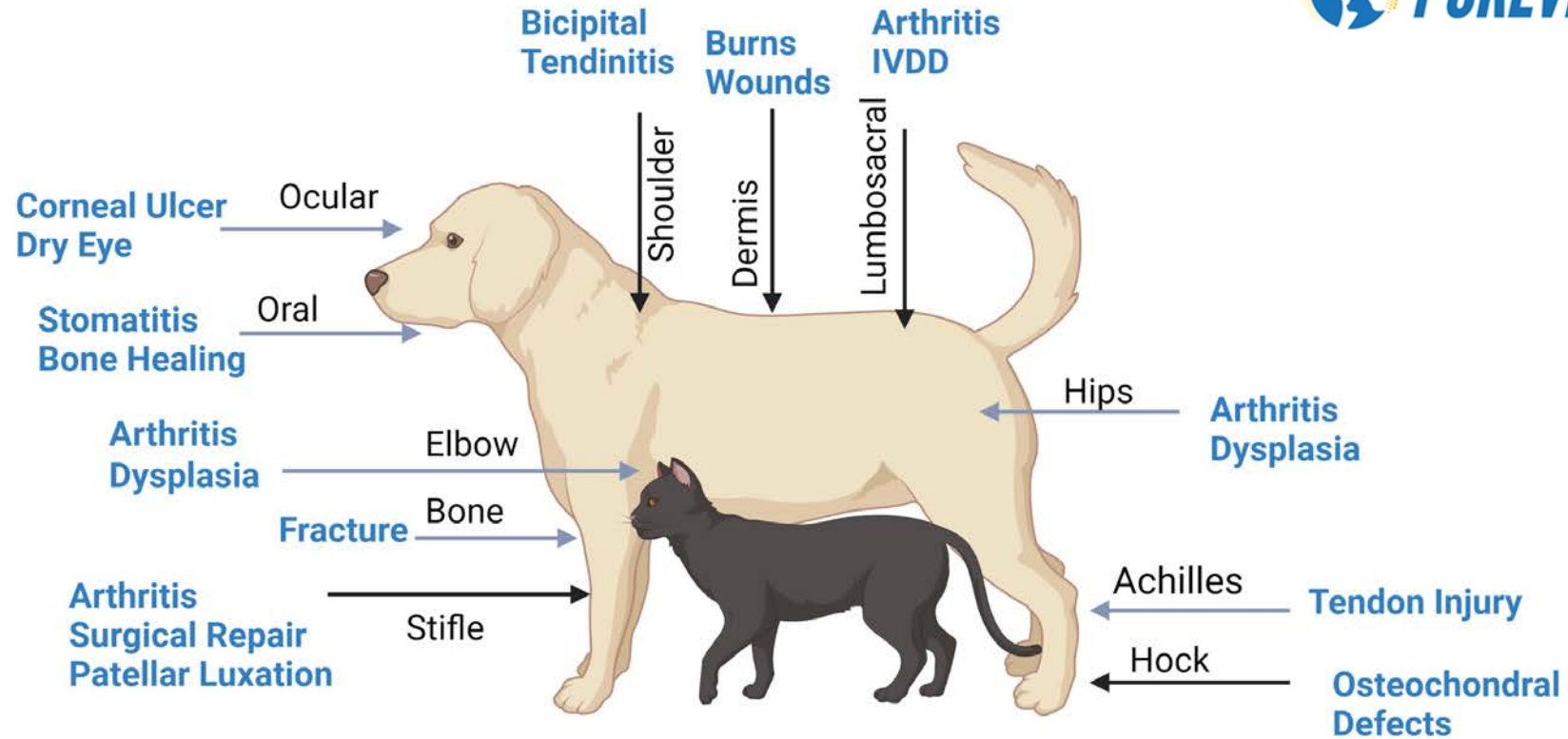


# Guide to Platelet-Rich Plasma (PRP)



## Common Applications of PRP



*PRP works naturally by down-regulating inflammation, alleviating pain and attracting regeneration to the site of injury or disease*

## Preparation Instructions

For full instructions see “PRP KIT INSTRUCTIONS”

### 1) Decide Treatment Approach

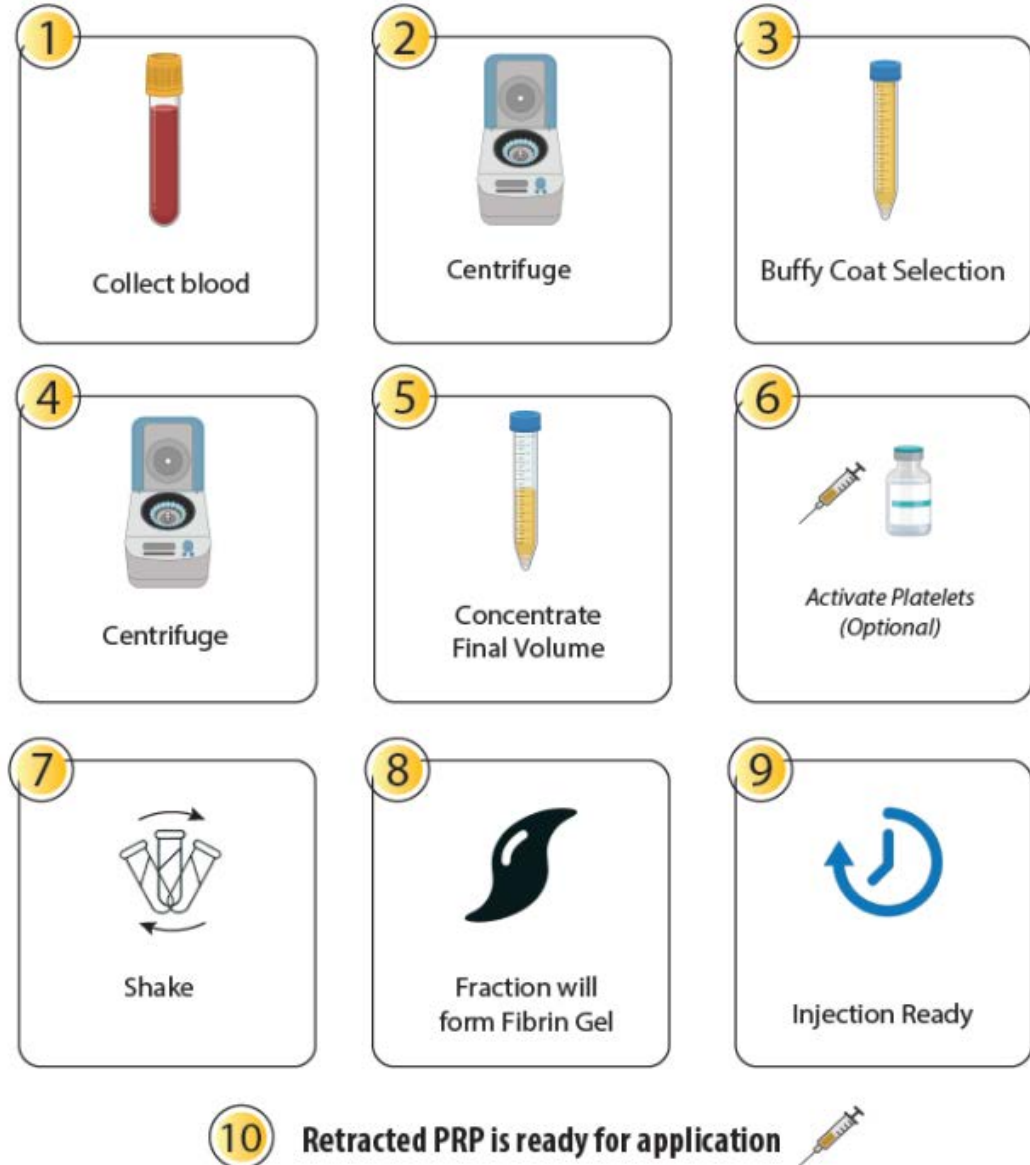
### 2) Harvest Blood Sample

### 2) Centrifuge

### 3) Isolate and Activate



## Easy Reference Guide



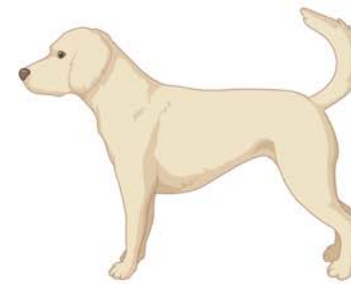
The Ardent PureVet PRP Kit has a standard protocol for starting blood volume of 32 MLs (4 Yellow Top Tubes). In some instances, for smaller veterinary patients where 32MLs of starting volume is a concern, 16 MLs (2 Yellow Top Tubes) may be utilized.

Note: it is important to adjust your final concentrated volume based upon the starting volume to ensure therapeutic results

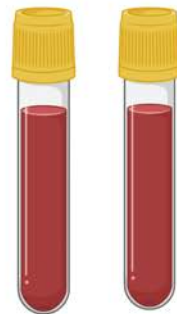
32 MLs Whole Blood



4ML injectable volume



16 MLs Whole Blood

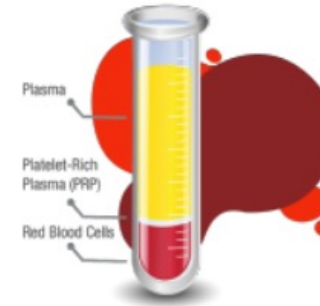


2ML injectable volume



## 1 **PLATELET-RICH PLASMA (12 MINUTES)**

- ✓ Injury or disease
- ✓ 4-5ml
- ✓ 3-5x concentration
- ✓ Used with surgery



## 2 **PUREVET GEL**

- ✓ Surgical
- ✓ Dental
- ✓ Wounds

*"I implement PRP in all of my orthopedic surgeries, I find that it helps reduce inflammation and accelerate the healing timeline."*

**Thomas Inferuso, DVM DACVS**  
Animal Hospital Surgical Center



## 3 **PUREVET PRGF**

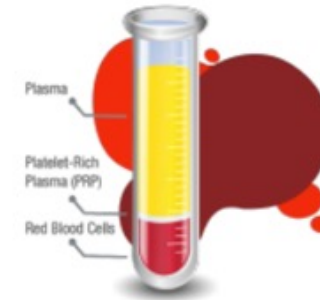
- ✓ Injury or Disease
- ✓ High Concentration of TGFB & PDGF
- ✓ Used with surgery
- ✓ Fast acting
- ✓ Can be frozen for up to 90 days
- ✓ Activation of Resident Stem & Progenitor Cells



---

## 1 **PLATELET-RICH PLASMA** (12 MINUTES)

- ✓ Injury or disease
- ✓ 4-5ml
- ✓ 3-5x concentration
- ✓ Used with surgery



This method produces traditional “PRP” whereby the platelets are whole or “un-activated”

This first biologic classification produced after two spins may be leukocyte rich (buffy coat fully incorporated) or leukocyte poor (buffy coat discarded).

Although some studies support WBC rich injections for soft tissue healing Ardent does not currently recommend using this biologic phase for companion animal veterinary patients.



## 2 **PUREVET GEL**

- ✓ Surgical
- ✓ Dental
- ✓ Wounds

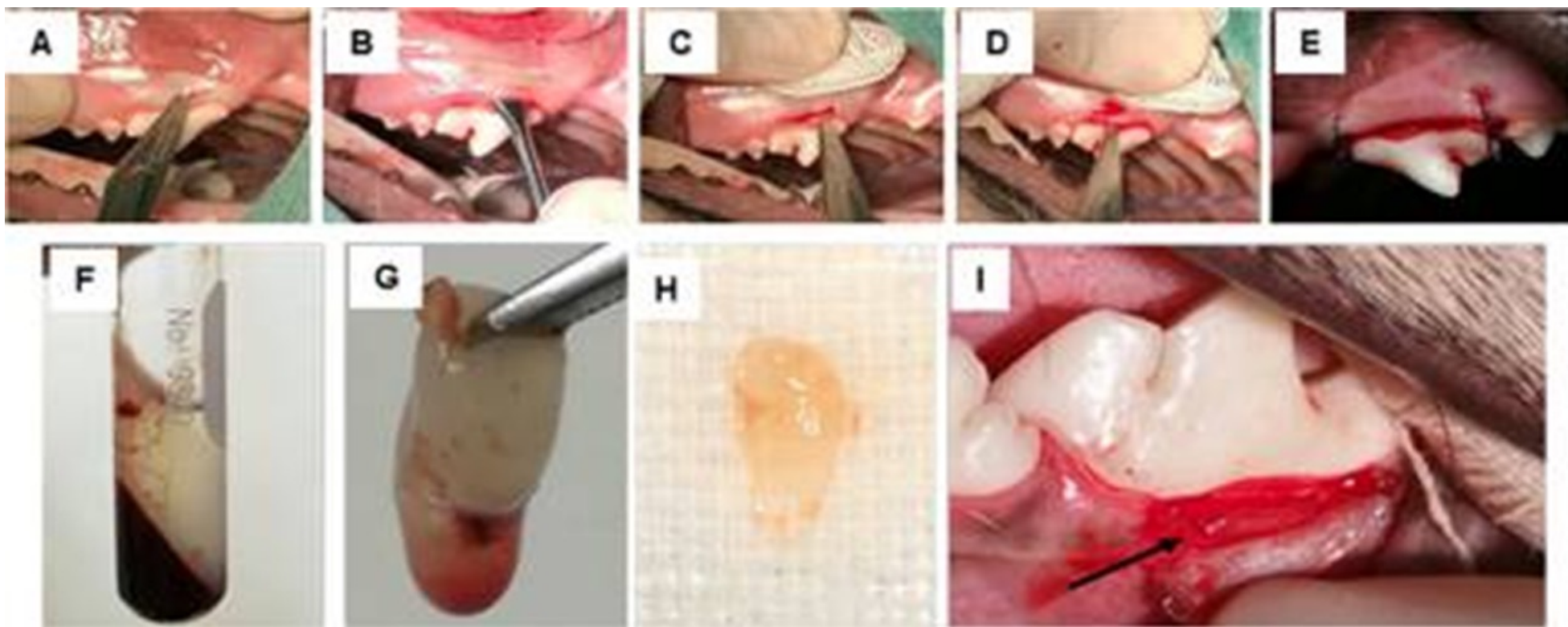
*"I implement PRP in all of my orthopedic surgeries, I find that it helps reduce inflammation and accelerate the healing timeline."*

**Thomas Infernuso, DVM DACVS**  
Animal Hospital Surgical Center



This method produces a gel with all the healing properties of traditional PRP in a mailable gel application form.

This gel may be used for dental applications, wounds and as a packing material to speed bone healing at the time of surgery (osteotomy etc.).





3

## PUREVET PRGF

- ✓ Injury or Disease
- ✓ High Concentration of TGFB & PDGF
- ✓ Used with surgery
- ✓ Fast acting
- ✓ Can be frozen for up to 90 days
- ✓ Activation of Resident Stem & Progenitor Cells



PRGF is short for plasma rich in growth factors. This process allows for activation of platelets in-vitro and is the result in the protocol after the gel retracts. This final volume is extremely favorable for joint disease and general application in companion animal patients. **This is the #1 application phase utilized in the PureVet PRP kit.**

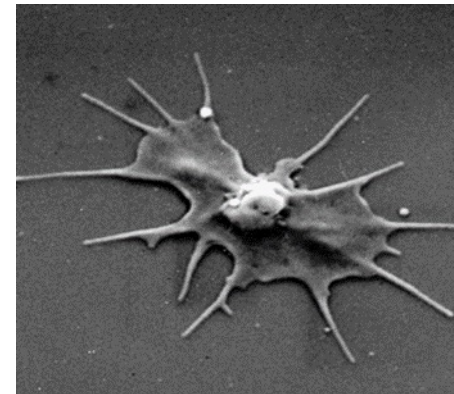
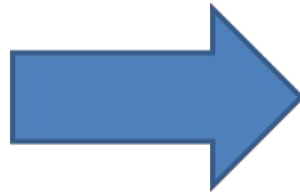
## Activating Platelets to Release Growth Factors

This process can lead to alleviation of inflammatory processes causing discomfort and healing by attracting resident Stem/Progenitor Cells

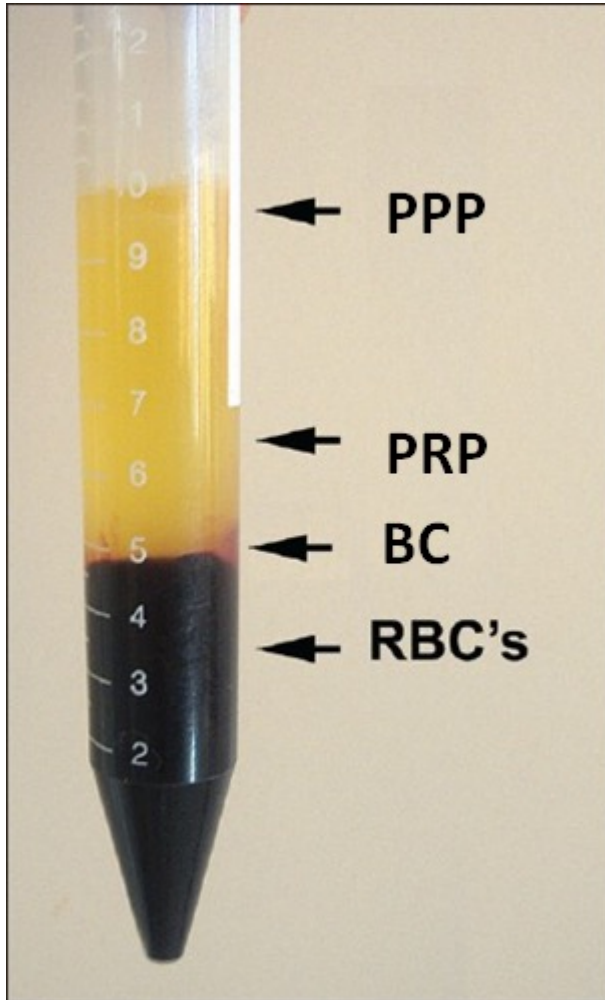
- PRP is an Autologous Product of a whole blood sample
- Platelets are isolated, concentrated, purified and activated during centrifugation
- Growth factors are released from the platelets and yield a serum of Platelet Rich Plasma

*This degranulation of platelets releases growth factors and cytokines into the local environment.*

*This in turn results in chemotaxis of inflammatory cells as well as the activation and proliferation of local progenitor cells.*



# WBC or No WBCs?



Ardent's standard protocol of PRGF and Gel recommends drawing **up to** the buffy coat but not fully incorporating the buffy coat to avoid WBC in final injectable volume.

WBCs can cause patient "stinging" sensation upon application, the main intent of WBC in final PRP samples is to assist in activation of the platelets. Due to the Ardent protocol 3 exogeneous activation of platelets in vitro, the vast majority of clinical responses in veterinary patients have been with leukoreduced samples.

After first spin in yellow tubes, buffy coat should be present just above RBC line

In some instances, clinicians may want higher WBC volume for soft tissue applications. This is a clinician preference approach that can be achieved by drawing down to the RBC layer.

# **Volumes & Joint Injection Guide**

# PRP Injection Volumes Updated 2023

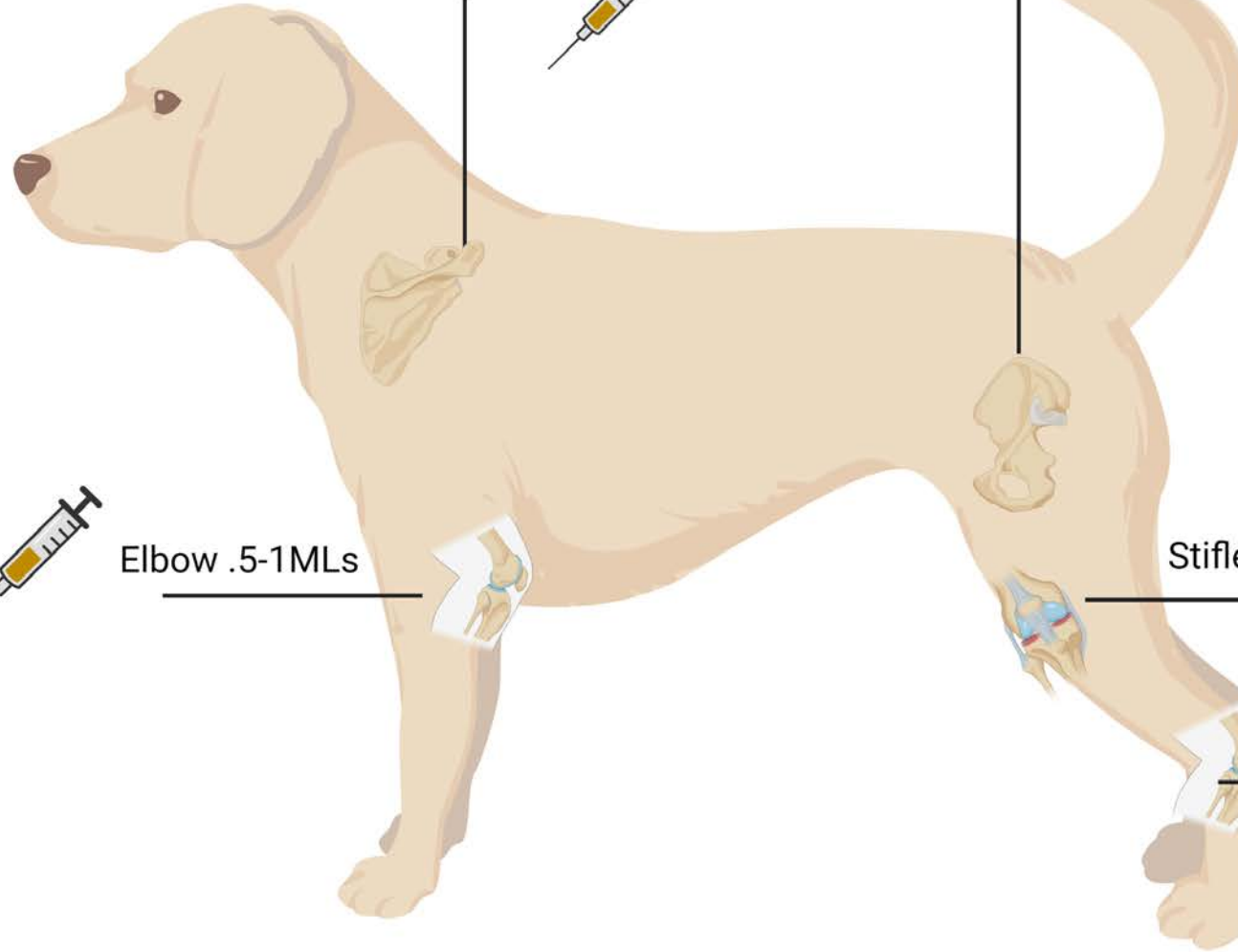
Canine Treatment  
Volumes > 40 LBs



22g 1-1.5" needle recommended



Elbow .5-1MLs



Shoulder .5-1MLs



Hips - 1-1.5MLs



Stifle - 1-1.5 MLs

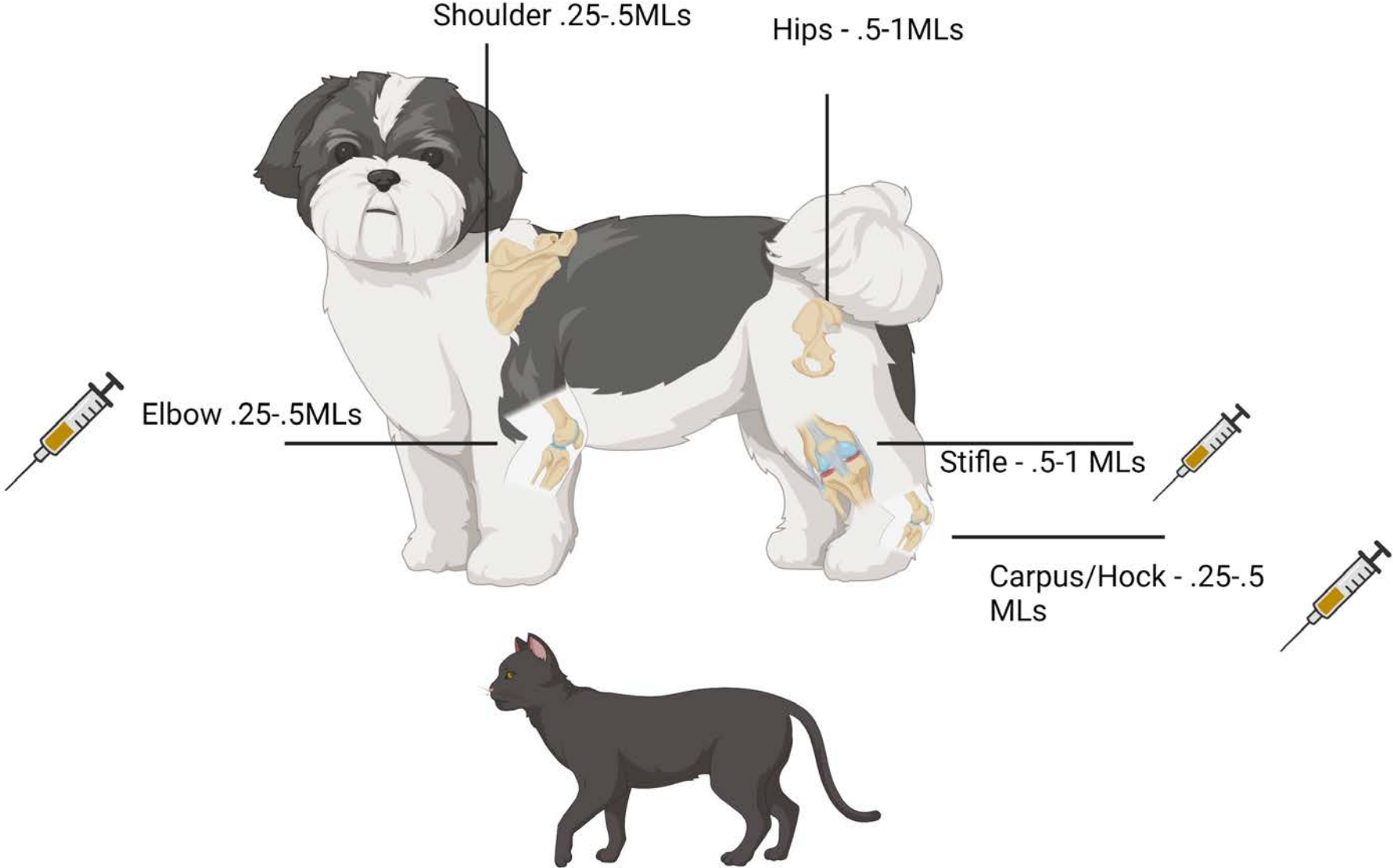


Carpus/Hock - .5-1 MLs



# PRP Injection Volumes Updated 2023

Canine Treatment  
Volumes < 40 LBs





### Injection technique for specific joints:

**Stifle:** Gentle flexion 20-22 gu needle- 3 cc syringe Midway between the patella and tibial tuberosity.

**Elbow:** Neutral 20-22 gu needle- 3 cc syringe Midway between the olecranon and lateral epicondyle

**Hock:** Neutral 22 gu needle- 3 cc syringe Cranial in the palpable depression between the tibia and talus. Caudal with limb hyperextended just medial to the lateral malleolus.

**Carpus:** 90-degree flexion 22-25 gu- 1-3 cc syringe Cranial in the palpable depression between the radius and radiocarpal bone.

**Shoulder:** Neutral with traction 20-22 gu long needle- 3 cc syringe Directly distal to acromion a distance estimated from radiograph Between greater tubercle and acromion from cranial to caudal.

**Hip:** Neutral with traction 20-22 gu long needle- 3 cc syringe Cranial to greater trochanter perpendicular to limb Medial adjacent to pectineus.

## Shoulder

articular anesthesia was evaluated by two experienced



**Figure 1. Bony specimen and cadaver specimen of the shoulder joint. The joint is placed in a neutral position and punctured craniolaterally between the acromion and the caudal part of the greater tubercle. The needle is directed caudo-medially and slightly downward. When entering the joint space, a slight decrease of resistance can be noticed.**

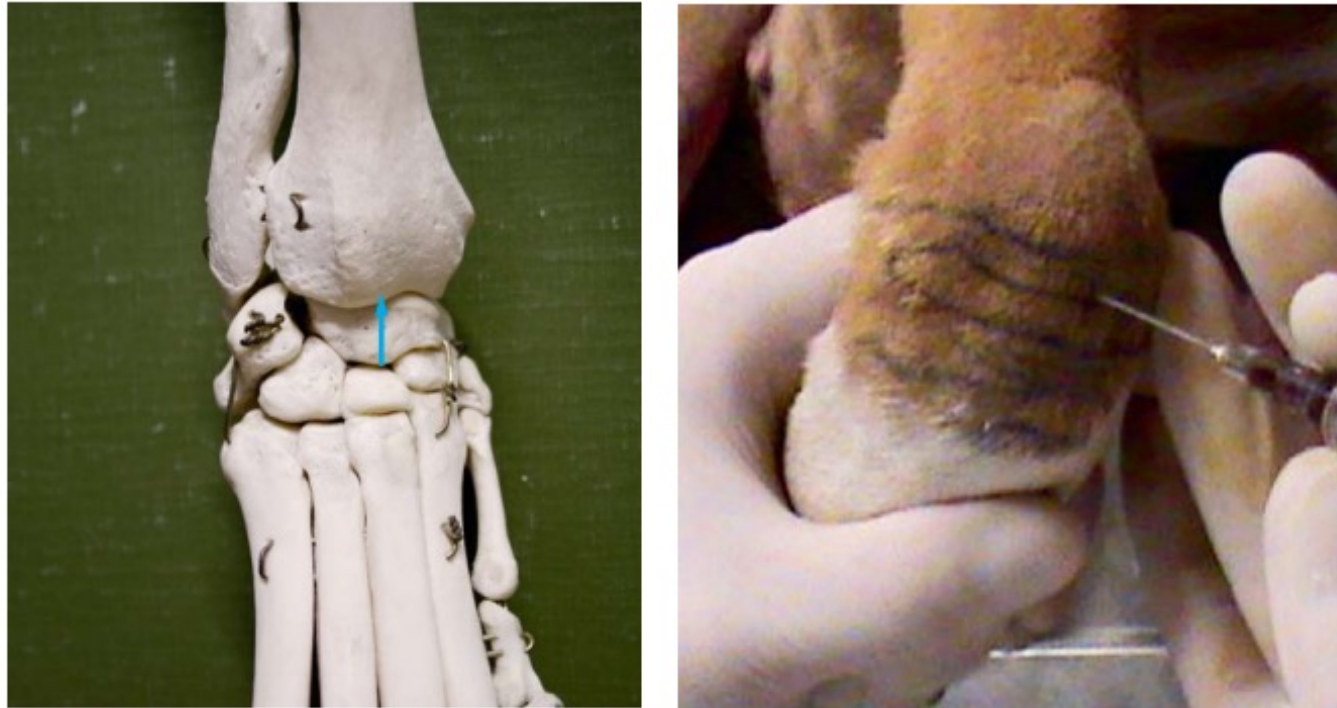
# Elbow



**Figure 2. Bony specimen and cadaver specimen of the elbow joint. The dog is placed in lateral recumbency with either the affected limb uppermost or on the table, according to a lateral or medial approach. Lateral injection is chosen for dogs with a deep thorax or excessive skin folds. In both ways, the needle is inserted in the supratrochlear foramen proximal and parallel to the olecranon process.**



# Carpus



**Figure 3. Bony specimen and cadaver specimen of the carpal joint. The antebrachio-carpal joint is the joint most frequently punctured. The carpus is flexed to 90°. A depression, corresponding to the antebrachio-carpal joint space, is palpable distal to the radius. The needle is inserted lateral or medial to the common digital extensor tendon and cephalic vein, which passes over the centre of the dorsal joint space. Injection of the intercarpal and carpometacarpal joints can be performed by flexing the carpus maximally. The intercarpal and carpometacarpal joints communicate with each other, but not with the antebrachio-carpal joint.**

# Hip



**Figure 4. Bony specimen and cadaver specimen of the hip joint. The dog is placed in lateral recumbency with the hind limb parallel to the table surface and in neutral position. The needle is inserted closely dorsal to the greater trochanter and perpendicular to the long axis of the limb.**

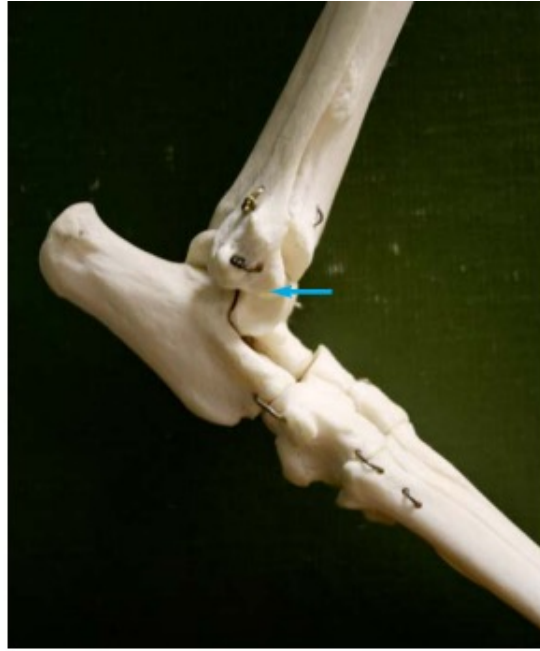
# Stifle



**Figure 5. Bony specimen and cadaver specimen of the stifle joint. The dog is placed in lateral recumbency with the stifle flexed to 90°. The joint can be punctured laterally or medially to the straight patellar ligament. The needle is directed towards the centre of the intercondylar joint space and parallel to the tibial plateau at an angle of 45° to the skin, midway between the patella and the tibial tuberosity.**

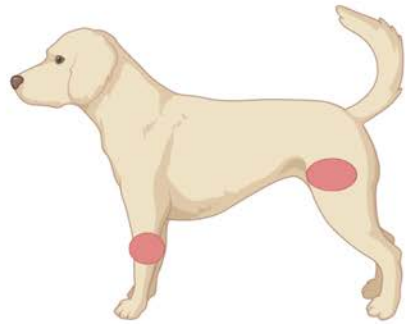
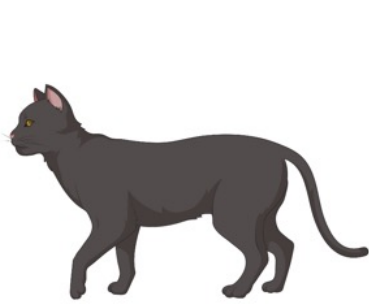


# Hock



**Figure 6.** Bony specimen and cadaver specimen of the hock joint. The dog is positioned in lateral recumbency, with the affected limb uppermost. The joint can be punctured dorsolaterally, i.e. cranial to the ridges of the trochlea and distal to the tibia. Alternatively, the joint can be punctured plantarolaterally, between the distal part of the tibia and the calcaneus. In mildly distended cases, the joint fluid should be pushed towards the puncture side.

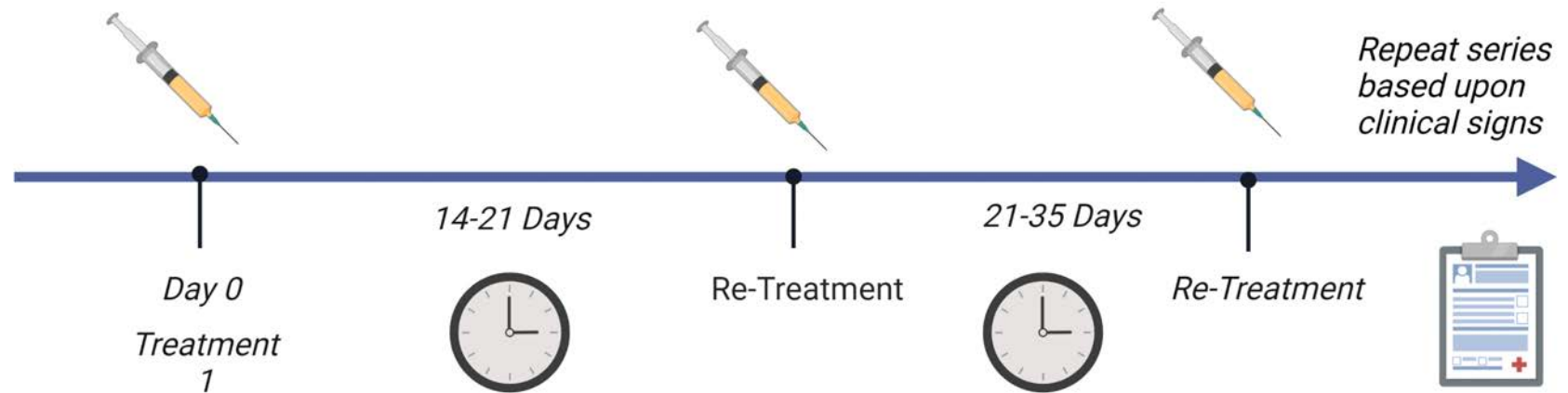
# **Treatment Protocols**



# Mid-Late Stage OA

All treatments provided via intra-articular injection

Suggested PRP Preparation: PRGF **3**

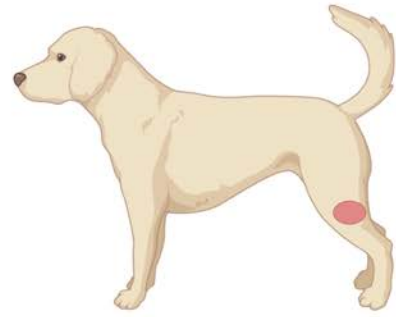
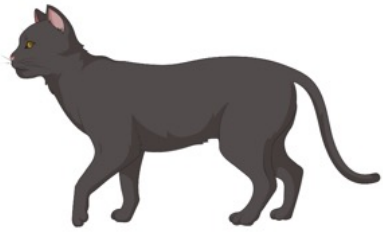


## Suggested Price

2 Treatment Sites: \$350

2+ Treatment Sites:  
\$500

Note that Initial PRP may be frozen for up to 90 Days

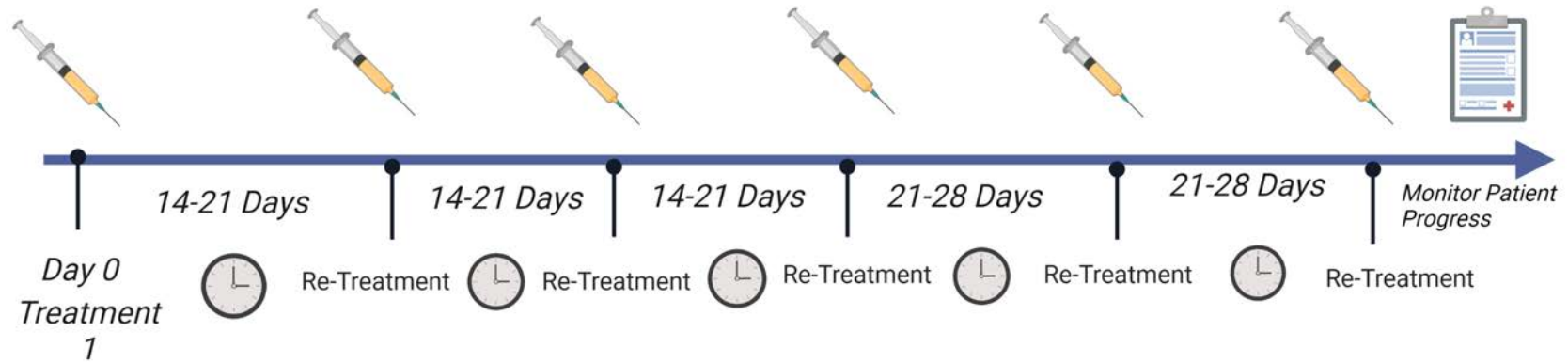


# Cruciate Injury (partial tear)

All treatments provided via intra-articular injection

Suggested PRP Preparation: PRGF

3



Suggested Price

\$700

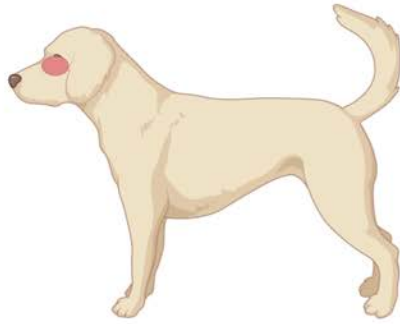
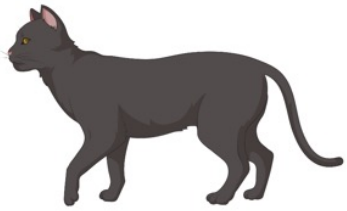
*Note that Initial PRP may be frozen for up to 90 Days*

*Note that an alternative approach to utilize LR-PRP or LP-PRP protocol 1.B*

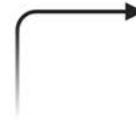
[Effect of leukocyte-reduced platelet-rich plasma on osteoarthritis caused by cranial cruciate ligament rupture: A canine gait analysis model](#)

[PLOS ONE](#)

ARDENT internal case archive



# Corneal Ulcer KCS



All treatments should be administered via sterile dropper into the eye

Suggested PRP  
Preparation: PRGF

3



1-2 drops of PRP should be applied via sterile dropper 4-6 times daily until issue has resolved.

Initial volume may be stored in sterile dropper if accessible or in syringe with application via syringe tip.

Items may be sent home with owner for sterile application.

## Suggested Price

\$250

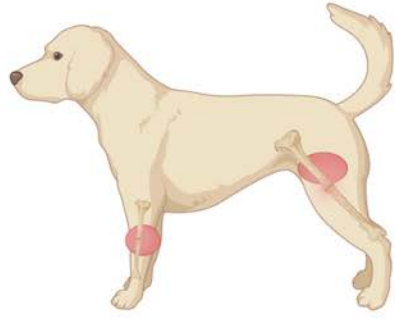
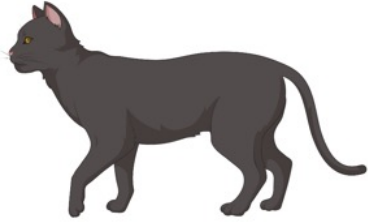
*Note: Initial PRP may be frozen for up to 90 Days*

*Note: individual frozen volumes should not undergo multiple freeze/thaw cycles*

*Note: PRP may be stored in a refrigerator for up to 7 days.*

[Autologous Platelet-Rich Plasma Eye Drops for the Treatment of Post-LASIK Chronic Ocular Surface Syndrome \(nih.gov\)](#)

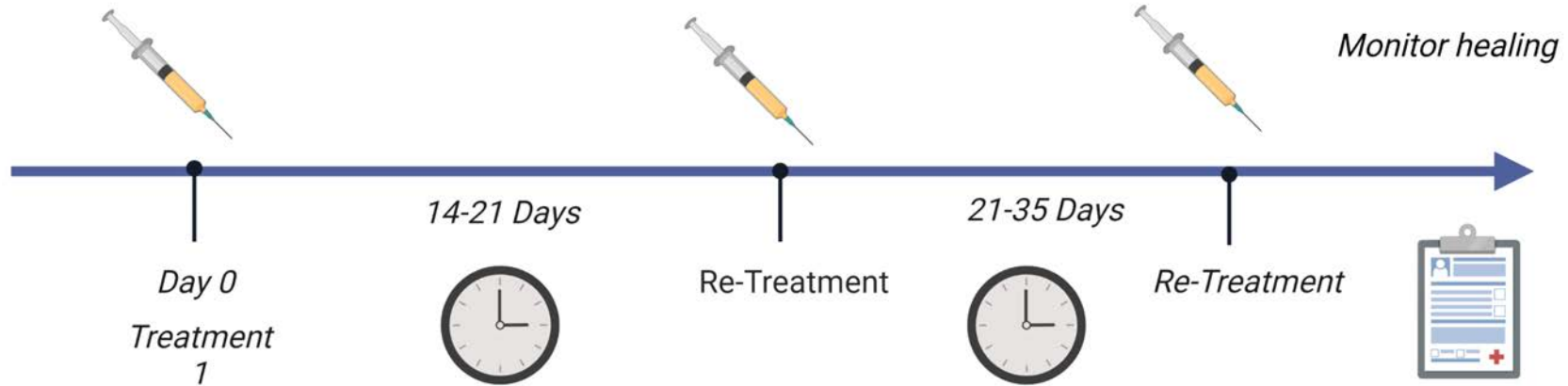
ARDENT internal case archive data



# Non-Union Fracture Healing

Suggested PRP Preparation: PRGF (3)

All treatments provided at the fracture site and/or percutaneous injection with surgery



Suggested Price

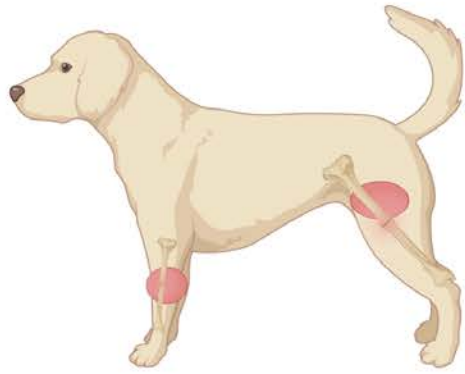
\$450

*Note that an alternative to utilize PRGF and PRP Gel (2) may be chosen to utilize in combination, Gel should be applied to and/or in and around site if applicable.*

[Assessment of the Efficacy of Platelet-Rich Plasma in the Treatment of Traumatic Canine Fractures - PMC \(nih.gov\)](#)

ARDENT internal case archive





Suggested PRP  
Preparation: PRGF

3

## Combination at Time of Surgical Repair

All treatments provided at  
the site of surgical repair.  
Contra-lateral joints  
especially in cruciate  
disease may be treated  
same day as needed.

Alternative approach is to  
apply PRP to surgical site at  
14 day re-check post surgery  
and begin series.



Monitor healing

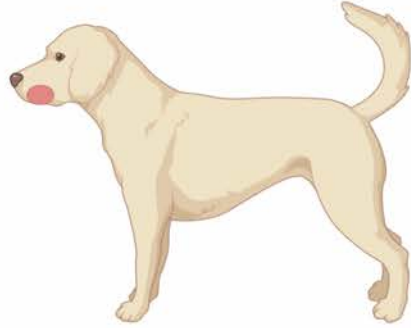
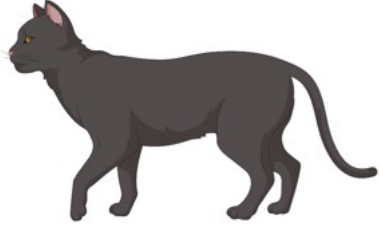


Suggested Price

Single Site: \$350

Multiple Sites: \$500

*Note: If desired Gel form may be utilized day 0 at time of surgery for packing into osteotomy for bone healing. All re-treatments and contra-lateral treatments should be applied in liquid injection form.*



## Dental Applications



All treatments should be administered via gel clot into site.

Suggested PRP  
Preparation: Gel

2



Gel should be harvested after activation and gel formation. Gel should be aseptically removed with sterile forceps and handled with sterile gauze for cutting as necessary.

Remaining liquid volume may be utilized for hydration of gel material and/or bathing site.

Suggested Price  
\$250

[Autologous platelet-rich fibrin stimulates canine periodontal regeneration | Scientific Reports \(nature.com\)](#)

ARDEnt internal case archive

# **CASE STUDIES**

# PRP Only



We have been treating this indolent ulcer with corneal sequestrum since February 17. And started the PRP June 29. The whole time we had also been treating the eye with with voltaren, ciloxan, Viroptic, lubricant, cotton tipped debridement and regular blood serum. We basically switched out the blood serum for PRP on June 29.

So an ulcer we had been battling for 5 months with minimal improvement cleared up in 2 months with addition of the PRP drops.



3



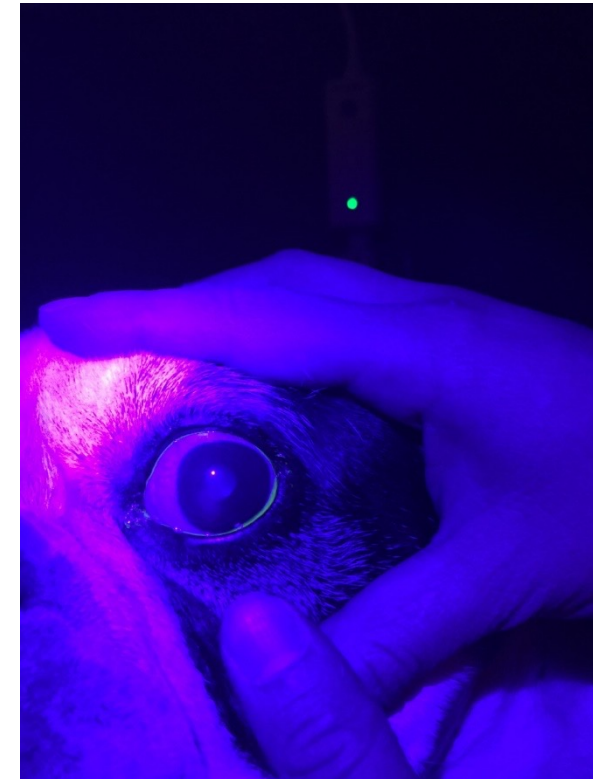
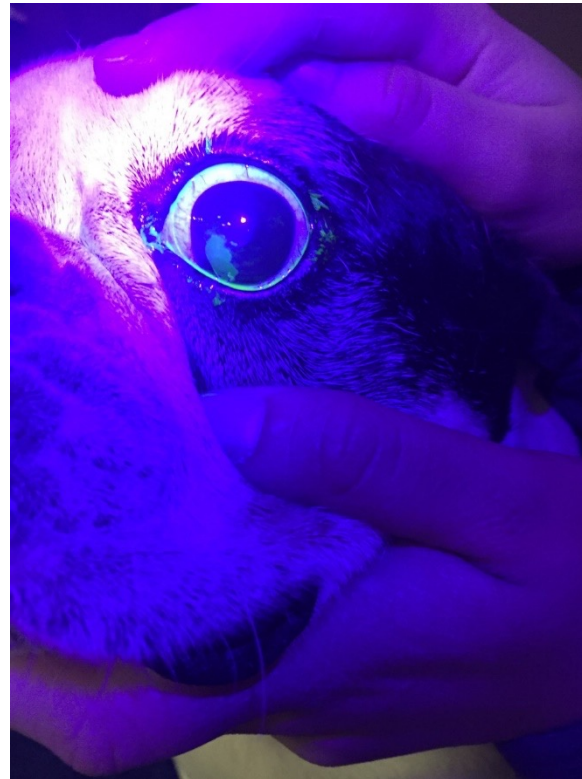
Dr. Primeau, A Pet's Place AH  
2/11/2022



Picture 1: post treatment with Tobramycin and cotton-tip debridement (not improving)

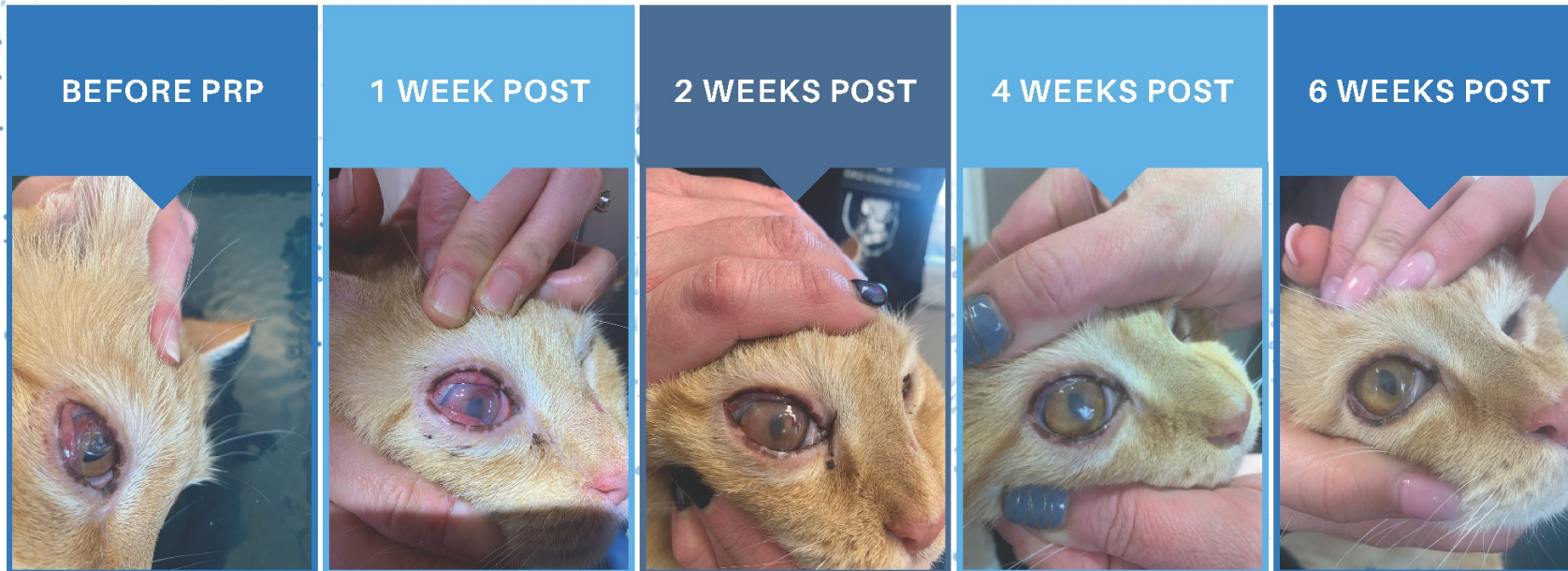
Picture 2: post diamond burr treatment

Picture 3: 4 days post PRP (remarkably improved)





## PRP Used for Feline Corneal Ulcer



*Courtesy of Walker Valley Animal Hospital*







 PUREVET PRP



2





**2 MONTHS OF PRP TREATMENTS**



"These are before and after photos of a stomatitis cat just seven days after treatment with PRP. The owners are over the moon, and saving money for stem cell therapy. PRP is a great alternative for owners who can't afford stem cell. It can also bridge the gap for owners on the fence about making the investment for stem cell, while giving their pet temporary relief."

**Anita McMillen, DVM**





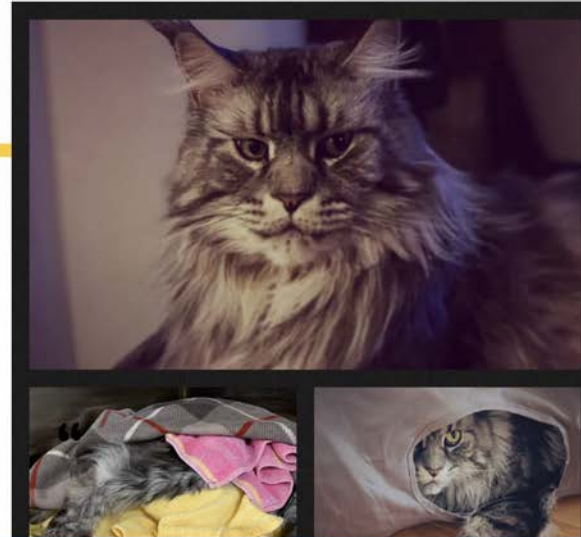
PRP THERAPY CASE

# VIKTOR



Meet Viktor, he is a big Maine coon!! He was diagnosed with severe hip dysplasia and arthritis in his knee and he is only 3 years old. Viktor was having a VERY hard time walking recently. His mom noticed how uncomfortable he was, and got him started on some pain medications right away. These medications only seemed to be a temporary relief and didn't help a ton. Poor Viktor still wasn't himself.

The rehab team at Nickel City Animal Hospital decided that maybe PRP would be a good option for Viktor! This treatment was done for Viktor and within 24-48 hours he was doing AMAZING! His Mom and their staff could not be happier with the results of his PRP treatments.



” THANK YOU FOR GIVING MY BOY SO MUCH RELIEF. IT'S INCREDIBLE HOW FAST THIS WORKS! HE WOKE UP THE NEXT DAY ACTING LIKE A KITTEN AGAIN





- [Frontiers | Antibacterial Properties of Canine Platelet-Rich Plasma and Other Non-Transfusional Hemo-Components: An in vitro Study \(frontiersin.org\)](#)