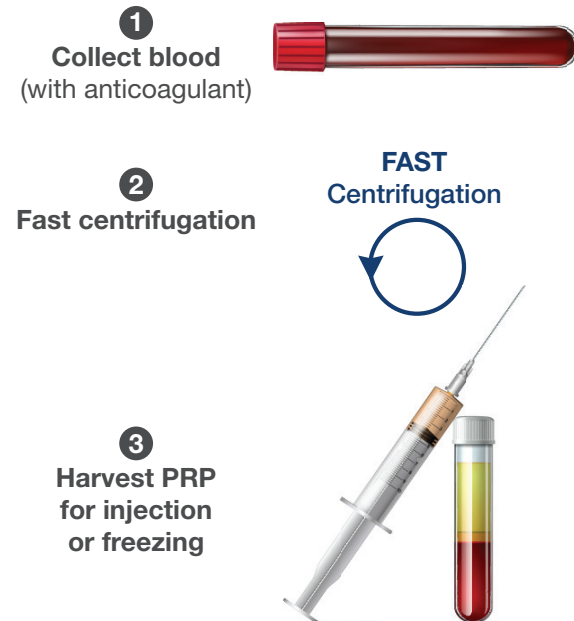


PRP (Platelet Rich Plasma)

PRP uses the concentrate of intact blood cells from your dog; mostly platelets and in some cases white blood cells. Platelets are nonnucleated cells containing a variety of granules. Platelets are the reservoir for growth factors and play a major role in several physiologic processes such as coagulation, angiogenesis (formation of new blood supply), immune response, and tissue repair. These growth factors play a crucial role in promotion of tissue generation and regulation of cellular activity^{5,6}

Blood is collected from your dog and mixed with an anticoagulant solution and then placed into a specialized device. This device is then centrifuged at a specific G-force to separate out the red blood cells, buffy coat layer, and platelet poor plasma. The buffy coat layer contains beneficial platelets, growth factors, and white blood cells and is harvested for use on the patient.



Benefits of irap/ACS and PRP include:

- Provides a more physiological alternative to conventional treatments which are capable of potentially modifying inflammation in the joint.⁷
- Was shown to help relieve inflammation and improve functional scores associated with police working dogs who were evaluated using the Canine Orthopedic Index.⁸
- PRP treatment could represent a simple, cost-effective, and valid alternative to promote natural healing processes.⁹
- Leukocyte (white blood cell) rich PRP may provide additional benefit over leukocyte poor PRP because of the regenerative properties that leukocytes provide and the potential to stimulate growth factors.¹⁰

Uses in companion animals:

PRP has been documented to be used in^{1,2,6,7,8,9}:

- **Musculoskeletal disorders** involving joints, bones, tendons and ligaments
- **Ophthalmology** and corneal abnormalities
- **Dermatology** and wound management
- **Dentistry** and periodontal disease

Dechra Veterinary Products
7015 College Blvd., Suite 525, Overland Park, KS 66211
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Canine Regenerative Therapies

Canine Regenerative Therapies

Regenerative therapies promote self-healing of the body through internal or external delivery of beneficial cells, cellular molecules, and support structures in horses.¹ In dogs regenerative therapies have similar functions and may help to alleviate painful conditions, improve function and possibly slow down disease progression.⁸

To put it in simpler terms, regenerative therapies are healing components from the body for the body. These treatments replace or regenerate body cells by stimulating the immune system to promote healing.

Healing components can include:

- **Scaffolds**, which provide structural support for cell attachment
- **Cells** such as platelets, white blood cells, and stem cells
- **Bioactive signals**, including cytokines (cellular proteins) and growth factors

The goals for regenerative therapies¹ are to:

- **Restore normal structure**
- **Return to previous function or athletic level**
- **Prevent injury**

Regenerative therapies can be further classified into types, with autologous blood products (ABP) being the most common. Autologous means the blood products are collected from that individual patient and used in that individual patient. It is an all-natural process which allows the patient to aid in their own healing process.

When considering the best therapy for your pet, it is important to know how each one works. There are two types of devices: ones that are produced from serum and ones produced from plasma.

Below is an explanation of the key differences between serum or plasma based devices:

Serum-based (acellular)

Autologous Conditioned Serum (ACS)/Interleukin-1 Receptor Antagonist Protein (IRAP)

Plasma-based (cellular)

Platelet Rich Plasma (PRP)
Autologous Protein Solution (APS)

Serum vs Plasma²

Serum (ACS)

Fluid that remains after blood has clotted and is spun in a centrifuge

Contains:

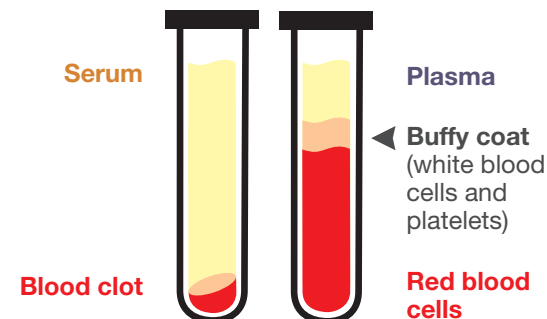
- Proteins, enzymes, nutrients, growth factors
- Beneficial cytokines

Plasma (PRP)

Fluid that remains when clotting is prevented by adding an anticoagulant and centrifugation

Contains:

- Intact blood cells
- Proteins, enzymes, nutrients and growth factors
- Lower levels of inflammatory substances



ACS and IRAP

ACS uses white blood cell activation to release anti-inflammatory cytokines such as IRAP³ as well as platelet activation to release beneficial growth factors.⁴

Blood is collected from your pet in a specialized device, incubated for a specific time and temperature, and then centrifuged at a specific G-force which causes the serum to separate from the red blood cells. The concentrated serum is then collected for immediate use or frozen for future use.

