

Platelet Rich Plasma Therapy

Platelet Rich Plasma (PRP) Therapy is the ultimate anti-aging treatment. PRP takes advantage of the wound healing properties of the platelets and the associated growth factors inducing cell regeneration and repair along with enhanced collagen production.

About

Platelet-rich plasma (PRP) is an autologous (one's own) blood component with a high concentration of platelets. PRP is nothing more than a human blood clot with increased platelet numbers.

PRP or '**Dracula**' therapy is a very safe and highly effective treatment which originates from our better understanding of platelet physiology and the therapeutic effects of the platelet related biochemical compounds such as growth factors, cytokines and chemokines.

PRP treatments have become very popular with celebrities including top athletes such as **Tiger Woods** and leading Hollywood actors and actresses such as **Angelina Jolie**.

Physiology and Function of Platelets

Platelets, or **thrombocytes** (Greek), are derived from megakaryocytes (very large cells) in the bone marrow. Through a fragmentation process, aged *megakaryocytes* with the help of a glycoprotein hormone, called *thrombopoietin*, yield small round cell fragments without nucleus which are subsequently released into the circulation as newly produced platelets.

Platelets' main function is to form clots causing bleeding to stop. Formation of clots is the end result of a series of enzymatic reactions known as the coagulation cascade involving a variety of cell-signalling protein molecules such as cytokines that are secreted by platelets.

In addition, platelets are metabolically more active than red blood cells and constitute a natural source of growth factors.

Growth Factors are proteins that promote wound healing, collagen production, and the growth, organization and maintenance of cells and tissues.

- *Insulin-like growth factor 1 (IGF1)*: deficiency is associated with neurodegenerative and cardiovascular diseases, heart failure, and shorter life span.
- *Platelet-derived growth factor (PDGF)*: plays an important role in cell development and new blood vessel formation.
- *Transforming growth factor beta (TGF- β)*: favours the synthesis of collagen; is believed to be important in regulation of the immune system; potentially defective function can lead to cancer.
- *Platelet factor 4 (PF4)*: a small cytokine which is believed to have anti-inflammatory properties and play an important role in wound repair.
- *Epidermal growth factor (EGF)*: regulates cell growth, proliferation, and survival.
- *Vascular endothelial growth factor (VEGF)*: helps restore oxygen when blood circulation is inadequate; is involved in the formation of new blood vessels.
- *Platelet-derived endothelial growth factor (PDEGF)*: has been implicated in tissue remodelling, cellular differentiation and blood vessel formation (angiogenesis).
- Clotting proteins such as *thrombospondin*, *fibronectin*, and *von Willebrand factor*.

Within an hour of platelet activation more than 90% of these extremely important proteins are secreted from alpha granules playing a crucial role in wound repair and cell regeneration.

How does PRP work as anti-aging treatment?

PRP is nothing more than the same blood clot that would be in any normal wound, except the higher platelet concentration. The process of clotting activates platelets, which begin to secrete their growth factors.

Injected into the skin within minutes from the clot formation following controlled centrifugation, this activated solution of platelets and growth factors promotes the production of collagen and hyaluronic acid, leading to improvement of wrinkles, skin laxity, loss of volume and scarring.

Can Growth Factors cause cancer?

PRP therapy causes activated platelets to release growth factors. These growth factors promote tissue healing and bio cellular regeneration.

All growth factors act on cell membranes, not the cell nucleus. Therefore growth factors cannot cause cancer, unlike true carcinogens such as radiation, tobacco anthracene tars, UV light, etc.

Indications

PRP is increasingly being recognised by specialist clinicians as a useful natural intervention to aid tissue growth and collagen stimulation.

Treatments have become popular in celebrities for all the healing benefits PRP provides. NBA Superstar **Kobe Bryant** was recently reported undergoing Platelet Rich Plasma Therapy for the treatment of his right knee.

Other athletes include **Tiger Woods**, **Chris Canty** and the Phillies' pitcher **Cliff Lee** who have, in the past year or so, been treated with PRP to

combat a sore knee (Woods), hamstring (Canty) and abdomen (Lee).

Actress **Angelina Jolie** has also been reported to have received PRP injections in her face to boost collagen.

Platelet-rich plasma comes from your own blood therefore it is safe and free of potentially transmissible diseases such as HIV, hepatitis or CJD ("mad cow disease").

PRP has been successfully used in a variety of applications including:

- *Anti-Ageing*
- *Wrinkles and Skin Revitalisation*
- *Hair Loss*
- *Following Face & Neck Lifts*
- *Burns*
- *Flaps and Grafts* (A high concentration of activated platelets constitutes an excellent biological glue for tissue adhesion especially in skin flaps, bone grafts and trauma).
- *Scars and Trauma*
- *Soft Tissue Reconstruction*
- *Wound Care* (e.g. skin ulcers)
- *Sports Injuries* (e.g. tendon regeneration)
- *Stimulation and Acceleration of Bone and Soft Tissue Healing*

PRP can be used as a standalone treatment or in conjunction with Medical Microneedling, Mesotherapy, Wrinkle Relaxing Injections, Dermal Fillers and Chemical Peels or following a cosmetic surgical procedure such as Face & Neck Lift or Hair Transplant Surgery for quicker recovery and enhanced results.

Contra-indications of PRP

PRP Therapy should not be used in patients suffering from

- Low platelet counts
- Bleeding disorders
- Chronic liver problems
- Acute or chronic infections

Treatment Explained

Please note that PRP is not stem-cell therapy. PRP does not contain stem cells of any relevance, but may be directed at resident stem cells that are up-regulated after injection to replicate together with other cells.

PRP therapy can be easily performed in a medical office setting.

Since the platelet-rich plasma is autologous (taken from the patient's own blood) it is non-allergenic.

The procedure is quick and simple with minimal downtime and is associated with no significant complications or side effects.

A small amount of blood will be taken with a tiny needle from a vein in your arm and added to an anticoagulant which prevents the formation of blood clots and the clumping of platelets together. The anticoagulants we use for PRP are either Citrate Dextrose-A (ACD-A) or Citrate Phosphate Dextrose (CPD). Anticoagulants are very important as they support the metabolic needs of platelets and their viable separation.

The mixture of blood and anticoagulants will be placed in a sterile centrifuge device specifically

designed to use a double centrifugation technique; a first 'hard' spin and a second 'soft' spin. After 15 minutes the plasma is separated from the blood producing the PRP.

PRP is normally formed by 94% platelets, 5% red blood cells and 1% white blood cells.

The platelets and growth factors are then collected in a sterile syringe and injected into the targeted area under the skin.

The entire treatment, from blood draw to injection back into the patient, usually takes about 20 to 30 minutes.

What to expect after treatment

PRP encourages collagen formation and improves blood supply.

Results are not immediate. But within three weeks most patients begin to see visible results as the enriched plasma rejuvenates the skin and promotes the growth of healthy skin.

Patients experience continued improvement in skin tone and texture. It is recommended that patients receive at least two PRP treatments several weeks apart.

Results can last up to eighteen months.

Each person is unique and the response to PRP injections does vary among individuals, though adverse reactions are rare.

PRP Therapy can be enhanced by addition of an appropriate skin care regime.

To learn more about the breakthrough platelet-rich plasma therapy contact **SFMedica** to book your consultation with **Dr S. Foutsizoglou** who will be happy to answer any questions you may have with regards to PRP or any other anti-ageing treatment.

