

PERSONALIZED CELL THERAPY



Dr. med. Paolo Pedrazzetti
Facharzt FMH für Haut- und Geschlechtskrankheiten

Personalized Cell Therapy

In PCT (personalized cell therapy), a PRP (platelet rich plasma) procedure is employed which stimulates the healing and regeneration of tissue in a purely biologic manner and therefore offers a completely natural alternative to the conventional methods of aesthetic medicine.

The PRP procedure allows special preparation of the body's own blood in which the platelets and growth factors are harvested in increased concentrations. These then interact with corresponding receptors on the target cells, for instance fibroblasts, stem cells, and epidermal cells, and initiate processes which result in cell proliferation, collagen and hyaluronic acid synthesis and matrix formation, amongst other things. As such, it is possible to repair damage caused by stress or environmental factors over time in a natural manner. The procedure is safe and well tolerated as it employs the body's own substances.

In particular the proliferation-promoting effect of the growth factors, which stimulates tissue regeneration at the treatment site, has been intensively investigated and confirmed in recent years. "Growth factors are playing an increasing role in aesthetic medicine, for example in skin rejuvenation and the treatment of hair loss. Personalized cell therapy exploits and boosts this effect in the tissue," said Dr. Paolo Pedrazzetti, an expert in the field of aesthetic medicine and a user of the PRP procedure.

PRP in Use

A small amount of blood is taken from a vein. The part of the blood containing the autologous regenerative and cell-preserving components is then separated from the remainder in a centrifuge, and siphoned off using a special system. The active substances in the blood are now ready for application at the treatment site. There, the applied platelets begin to release growth factors, which support the regeneration processes.

PRP for Skin Rejuvenation

Aging processes and genetic endowment are contributing factors, but stress and environmental influences also take their toll on your skin. Although our body works hard to combat damage caused by higher exposure to sunlight, for example, with reparative mechanisms, it accumulates over time. In addition, the natural production of collagen and hyaluronic acid in the body also declines as we age. As the most common protein in the human body, collagen in particular plays a decisive role in the structure of the skin. As such, our skin is largely made up of collagen, its fibers acting as a supportive corset, lending the skin its elasticity. Moreover, the collagen fibers store large quantities of water and are thus decisive for the volume of the skin. The body's natural collagen production starts to decrease in your mid-twenties. As a result, skin becomes thinner and loses its elasticity. The first wrinkles appear.

Studies have shown that the PRP procedure triggers the breakdown of sun-damaged components and also stimulates the body to produce collagen and hyaluronic acid naturally. The result is improved dermal elasticity and an increase in the volume of the skin.^{1, 2, 3}

As many examples in our practice have shown, personalized cell therapy can produce good results with individual differences in skin aging.

PRP in Hereditary Hair Loss

Hereditary hair loss (androgenetic alopecia: AGA) results in a loss of hair in certain hair regions in around 80 % of all men and approximately 50 % of women. In men, AGA often appears early in life, predominantly along the hairline and around the crown. Women are mostly affected after menopause, with AGA generally appearing along the center parting. The reason for the hair loss is genetic hypersensitivity of the hair follicles to the hormone dihydrotestosterone (DHT). DHT is a steroid hormone found in the scalp which shortens the growth phase of the follicles. This results in the follicles atrophying over time.

The concentrated growth factors present in PRP make it possible to stimulate the growth phase of the follicles again. Studies have shown that the PRP procedure can achieve a considerable increase in hair density and hair diameter.^{4, 5, 6}

In our experience personalized cell therapy can indeed help in cases of hereditary hair loss.

References

1. Cho JW, Kim SA, Lee KS. Platelet-rich plasma induces increased expression of G1 cell cycle regulators, type I collagen, and matrix metallo proteinase-1 in human skin fibroblasts. *Int J Mol Med* 2012;29:32-6
2. Kim DH, Je YJ, Kim CD, Lee YH, Seo YJ, Lee JH, et al. Can platelet-rich plasma be used for skin rejuvenation? Evaluation of effects of platelet-rich plasma on human dermal fibroblast. *Ann Dermatol* 2011;23:424-31
3. Anitua E, Sanchez M, Nurden AT, Zalduendo mm, et al. Platelet-released growth factors enhance the secretion of hyaluronic acid and induce hepatocyte growth factor production by synovial fibroblasts from arthritic patients. *Rheumatology (Oxford)* 2007;46(12):1769-72
4. Greco J, Brandt R. The effects of autologous platelet rich plasma and various growth factors on non-transplanted miniaturized hair. *Hair Transplant Forum int* 2009;19:49-50
5. Lopez V, Vaya A, Bautista D, Ricart JM. Autologous platelet-rich plasma as a potential therapeutic tool in androgenetic alopecia. *J Am Acad Dermatol* 2013;68:SAB 103
6. Khatu SS, et al. Platelet-Rich Plasma in Androgenic Alopecia: Myth or an Effective Tool. *J Cutan Aesthet Surg* 2014;7(2):107-110



Kontakt

Dr. med. Paolo Pedrazzetti | Zürichstrasse 34 | 8134 Adliswil
Tel. 044 771 23 00 | Fax 044 771 23 01 | info@hautarzt-zuerich.ch
www.hautarzt-zuerich.ch