

## **Burn/Traumatic Scar Maturation Using Autologous Fat Grafts + SVF**

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**Abstract :** Over the past few decades, since the bio-engineering revolution, autologous cell therapy (ACT) has become a rapidly evolving field. Currently, this form of therapy has broad applications in modern medicine and plastic surgery, ranging from the treatment/improvement of wound healing to life-saving operations. A study was conducted on 50 patients having to disfigure, and deform post burn scars and was treated by injection of extracted, refined adipose tissue grafts with their unique stem cell properties. To compare the outcome, a control of 20 such patients was treated with conventional skin or soft-tissue flaps or skin grafting, and a control of 10 was treated with more advanced microsurgical techniques such as Pre-fabricated flaps/pre laminated flaps / free flaps. Assessment of fat volume and survival post- follow up period was done by radiological aid, using MRI and clinically (Survival of the autograft and objective parameters for scar elasticity were evaluated skin elasticity parameters 3 to 9 months postoperatively). Recently, an enzyme that is involved in collagen crosslinking in fibrotic tissue, lysyl hydroxylase (LH2), was identified. This enzyme is normally active in bone and cartilage but hardly in the skin. It has been found that this enzyme is highly expressed in scar tissue and subcutaneous fat; this is in contrast to the dermis, where the enzyme is hardly expressed. Adipose tissue-derived stem cell injections are an effective method in the treatment of various extensive post-burn scar deformities that makes it possible to re-create the lost sub-dermal tissue for improvement in the function of involved joint movements.

**Keywords :** adipose tissue-derived stem cell injections, treatment of various extensive post-burn scar deformities, re-create the lost sub-dermal tissue, improvement in function of involved joint movements

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