

**STRUCTURAL MODIFICATIONS:
HISTOLOGICAL OBSERVATION DURING TREATMENT WITH LPG® TECHNIQUE**

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LPG® Technique is a non-invasive suction-assisted rolling massage initially used in France in the 1980's for the treatment of burn and traumatic scars. Its use was later applied to cosmetic medicine for the treatment of cellulite in Europe, Japan, South America and has been approved by the FDA for use in the US on early 1998. **LPG® Technique** has been shown to improve the appearance of scar tissue and of cellulite. In humans it increases blood and lymphatic flows in the skin and has also been shown to increase collagen production on animal models. The effect of mechanical forces has been extensively studied in compartments (i.e. chondrocytes, vascular endothelial cells and muscle cells). Little is known of their effect on dermal fibroblast despite the fact that the skin is constantly exposed to stretching and bending forces in physiologic as well as pathologic conditions (i.e. wound healing, keloids). We hypothesized that **LPG® Technique** might be a good model to study, in vivo, the effects of mechanical forces on fibroblasts and endothelial cells in the skin.

In order to verify this hypothesis, we have examined by histology skin biopsies of 12 patients affected with lipodystrophy of the lower limbs, before and after treatment with **LPG® Technique**. On histological examination of treated skin biopsies, we observed an increase of mucopolisaccharides in the extracellular matrix, the presence of ectasic vessels with a perivascular inflammatory infiltrate, as well as an increased trophism of the epidermis and a regain of normal aspect of the rete ridges. We also performed immuno histo chemistry of treated and untreated healthy skin biopsies looking at the expression of growth factors and cytokines such as TGF- β , PDGF, VEGF, b FGF, CTGF, EGF. We also investigated the extracellular matrix looking at collagen type I, III, VI, Tenascin C, fibronectin and β -actin. Because of their well known role in skin inflammation, we investigated if the mechanical stress produced by **LPG® Technique** could induce the expression in the skin of neuropeptides such as SP, NGF and CGRP. Authors present and discuss their results which give a new lesson for **LPG® Technique** and its applications.