

TENSION REDUCING TAPING AS A MECHANOTHERAPY FOR HYPERTROPHIC BURN SCARS - A PROOF OF CONCEPT (170)

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Introduction: Hypertrophic scarring following burn injuries remains a real concern and clinical challenge, causing physical, psychological and social burden. Often when the initial pathology is healed, less attention is paid to the problems that accompany scars like scar hypertrophy. The prevalence of hypertrophic scarring following burns reaches up to 67%. It is generally accepted that hypertrophy and scar contraction can be minimized by reducing mechanical tension. Adherent cells including endothelial cells, fibroblasts and myofibroblasts sense tension originating from the environment. Applying kinesio tape around the surface of the scar and thus altering mechanical forces on the skin is a newly developed therapy to reduce tension on burn scars. In a first small pilot study we investigated whether this technique could actually reduce tension at the scar site.

Methods: Distensibility, which has an inverse relationship with tension, was measured before application of the kinesio tape with a Cutometer, which measures the vertical deformation of the skin in millimetres when the skin is pulled by means of a controlled vacuum into the circular aperture of a probe. This measurement was repeated after the application of the kinesio tape. The more the skin can be deformed, the more tension is reduced on that skin site.

Results: The first results on 20 patients showed a statistically significant difference in the scores for distensibility before tape application ($M=0.63$, $SD=0.23$) and after tape application ($M=0.93$, $SD=0.25$); $t(19)=-6.969$, $p = .000$). This corresponds to a reduction of tension in the middle of the scar site with 47%.

Conclusion: This initial result indicates that the taping technique is actually reducing tension and can therefore decrease scar hypertrophy. Future studies should investigate the short-term and long-term effects of this therapy.