WETENSCHAPPELIJKE EVIDENTIE PEMF

* Approved by FDA in 1979 for T/t of fractures and non-union fractures
* “PMFT at least as effective as further surgery in cases of non-union with an overall success rate of 81% against 82% for surgery, although infected non-unions showed a success rate of 81% for PMFT against 69% for surgery” ***Gossling et al 1992.***
* In a large group of long-term non-unions and failed arthrodeses (average non-union 4.7 yrs) who had extensive surgical failure(3.4 previous surgical failures) and relatively high infection rate (35%), bony healing took place in 75% of the patients treated with PMFT ***Bassett et al 1982***
* In a double-blind prospective study of lumbar inter-body fusions, PMFT group had 92% healing rate whereas non-PMFT group had only 65% healed. ***Mooney V. Spine***
* Similar study in 2000 showed 97.6% fusion rate in PMFT group but only 52.6% in control group. ***Marks RA. 2000***
* Systematic literature review naar  de "Therapeutic effects of whole-body devices applying pulsed electromagnetic fields (PEMF)”. ***Hug en collega’s 2012***

BIOLOGICAL EFFECTS OF LASER

* 300% increase in ALP expression in rat femoral fractures. ***Dickson et al The Queens Uni., Belfast***
* Effect appears to be photo-chemical – NOT thermic
* Activates mitochondrial respiratory chain components
* Increases electron transfer in cytochrome oxidase
(Cytochrome oxidase is key photo-acceptor of light in NIR spectral range)
* Increases levels of ATP synthesis in isolated mitochondria
* Increases osteoblast activity and reduces osteoclast activity
***Yaakobi + Oron Tel Aviv Uni.***
* Weight percentages of Ca and P increased – P= 0.037 Ca and P= 0.034 P
***Khadra M et al 2004***

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Wetenschappelijke evidenties/ case studies van Proff. Dr. R. Saggini

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