Orthopedic:

The influence of irradiation with low-level diode laser on the proteoglycan content in arthrotically changed cartilage in rabbits

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Abstract

The course of arthrosis was investigated on an animal-experimental arthrosis model considering macroscopic aspects, and the proteoglycan and the glycosaminoglycan contents. Based on these parameters, the influence of a low-power diode laser of 692.6 nm wavelength on the progress of arthrosis was investigated. Thirty days following joint instability surgery another operation was made during which the femoral condyles were irradiated using different energy densities. Seven days after the second operation, macroscopic findings were made and the proteoglycan content was established based on the quantitative determination according to Taylor and Jeffre. This method is based on various spectrophotometric absorption behaviours of different concentrations of sulphatizedglycosaminoglycans in the presence of dimethylmethylene blue.

Macroscopically, a progressively increasing severity of cartilage changes during the course of arthrosis was detected and the proteoglycan content was found to decrease. The changes in the irradiated joints proved to be less severe, with the higher energy density having a greater positive influence of statistical significance

Pain:
http://www.ncbi.nlm.nih.gov/pubmed/16806710