Laser's effect on bone and cartilage change induced by joint immobilization: an experiment with animal model

Laser doux
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The influence of low-level (810 nm) laser on bone and cartilage during joint immobilization was examined with rats' knee model. The hind limbs of 42 young Wistar rats were operated on in order to immobilize the knee joint. They were assigned to three groups 1 wk after operation; irradiance 3.9 W/cm², 5.8 W/cm², and sham treatment. After 6 times of treatment for another 2 wk both hind legs were prepared for 1) indentation of the articular surface of the knee (stiffness and loss tangent), and for 2) dual energy X-ray absorptiometry (bone mineral density) of the focused regions. The indentation test revealed preservation of articular cartilage stiffness with 3.9 and 5.8 W/cm² therapy. Soft laser treatment may possibly prevent biomechanical changes by immobilization.