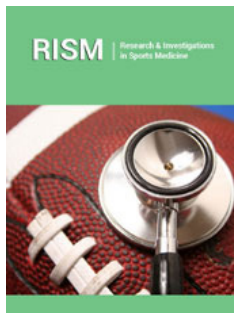


Increased Temperature of Tissues Leads to Decreased Pain: Use of Sustained Acoustic Medicine

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Opinion

Increased temperature can reduce muscle spasm, increase metabolism, and relieve pain. Two such devices are Long Duration Ultrasound, (LDUS) and Low Intensity Pulsed Ultrasound, (LIPUS). Both of these are used with (SAM) sustained acoustic medicine. SAM is low intensity because it is delivered at $.243w/cm^2$. It is delivered in a pulsed mode, and each treatment lasts from 1,2 or 4 hours. It is battery operated, small, (about the size of a cell phone), and portable. We desired to measure tissue temperature increase during a 1-hour SAM treatment. We inserted 2 small diameter temperature probes into the calf muscle of healthy humans. One probe was 1cm deep and the other was 3cm deep. The crystal placement was directly over the tips of the temperature probes. The receiving end of the temperature probes were affixed to an isothermix computer. Temperature was measured every 30 seconds. The treatment at 3cm deep increased in temperature for the first 32 minutes, and then leveled out for the remaining 28 minutes. The temperature at the 1cm depth leveled off at the 27-minute mark and then continued during the last 33 minutes. Temperature at the 3cm depth was 1.3C and at 1cm was 3.6C. The 3cm depth provided mild heating, while the 1cm depth produced vigorous heating [1].

Biography

David O Draper, PhD, ATC, is a professor of sports medicine and athletic training at Brigham Young University, Provo, UT, USA. He has treated athletic injuries at BYU, Illinois Wesleyan University, Illinois State University, and Northern Illinois University. He also taught at these universities. He has nearly 150 publications in scientific journals, has given over 360 presentations and received over \$1,000,000 in external funding. Aaron Wells has been an athletic trainer and educator at BYU, University of Nebraska and he has served as an athletic trainer for the Los Angeles Angels of the MLB.

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