

Ultrasound device improves poor bone healing

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Ultrasound can speed the healing of fractures. A randomized controlled trial reported in the open access journal *BMC Musculoskeletal Disorders* has found that the use of low-intensity pulsed ultrasound (LIPUS) in patients with tibial fractures which showed inadequate progress toward healing resulted in 34% greater bone mineral density (BMD) in the fracture area after 16 weeks than use of a sham device.

Jon E. Block, Ph.D. worked with a team of researchers from University Hospital Marburg and the University of Ulm, Germany, to test LIPUS in 51 patients and 50 controls. Their research was supported by Smith and Nephew, a manufacturer of ultrasound devices.

Block, a consultant for the sponsor, said, "These findings demonstrate significantly greater progress toward bone [healing](#) after LIPUS treatment compared to no LIPUS treatment in subjects with established delayed unions of the tibia. This should assist in establishing this non-invasive modality as a viable, effective treatment option for patients suffering these injuries".

The LIPUS device comprises a handheld control unit attached by wire to a small [ultrasound](#) emitter, which is placed over the fracture site for 20 minutes per day. Patients in this study had all sustained a tibial shaft fracture that subsequently showed inadequate progress toward healing and were randomized to receive either a functional or non-functional device. The estimated increase in BMD among subjects randomized to active LIPUS treatment was 34% larger. According to Block, "This is

the first study to offer Level-I evidence of this effect in a single fracture type".

More information: Improved healing response in delayed unions of the tibia with low-intensity pulsed ultrasound: results of a randomized sham-controlled trial, Markus D Schofer, Jon E Block, Julia Aigner and Andreas Schmelz, *BMC Musculoskeletal Disorders* (in press), www.biomedcentral.com/bmcmusculoskeletdisord/

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