

The Effects of a Low Frequency Acoustic Waveform on Osteoarthritis: A Pilot Study

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Objective: To investigate the effects of a low frequency acoustic waveform on pain and range of motion (ROM) for patients with osteoarthritis (OA).

Methods: Twenty one adults with OA (7 males, 14 females) were recruited from local advertisements to participate in a quasi-experimental pre-test, post-test, 24 hour post-test design using a new technology called the Cassone transducer. Participants were treated in a seated position while facing the transducer in a circular fashion approximately one foot away from the column for 25 minutes. ROM was measured for the wrist, knee, and hip using goniometry, and pain was assessed using a visual analog pain scale across all conditions.

Results: Patients had less pain immediately ($p < 0.001$) and at 24 hours ($p < 0.01$). Range of motion significantly improved in right and left hip flexion ($p < 0.01$), left wrist flexion ($p < 0.01$), and left knee flexion ($p < 0.05$) pre to post. Significant improvements were noted in hip flexion (left, $p < 0.001$; right, $p < 0.01$) and wrist flexion (left, $p < 0.05$; right, $p < 0.01$) after 24 hours, but not in knee flexion or wrist extension ROM.

Conclusion: The results of this pilot study suggest that use of acoustic energy as an alternative form of therapy may improve ROM and decrease pain.

Acknowledgements

We wish to thank Medsonix for providing the use of their facility for this study. The authors also express their gratitude to Alphonse Cassone for his technical assistance and the use of his patent pending technology.