DOI: 10.7860/JCDR/2025/80478.21686

Impact of High Intensity Laser Therapy on Shearwave Elastography Parameters of Achilles Tendon in Healthy Adults: A Study Protocol

Muskan Bathla, Postgraduate Student, Department of Physiotherapy, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala, Haryana, India.
Kanu Goyal, Assistant Professor, Department of Physiotherapy, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala, Haryana, India.
Amit Mittal, Professor, Department of Physiotherapy, Maharishi Markandeshwar Institute of Medical Sciences and Research, Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala, Haryana, India.
Manu Goyal, Professor, Department of Physiotherapy, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala, Haryana, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Manu Goyal,

Professor, Department of Physiotherapy, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar (Deemed to be University), Mullana Ambala, Haryana, India.

E-mail: manu.goyal@mmumullana.org

ABSTRACT

Introduction: Achilles tendon injuries can happen in a variety of ways. High-intensity Laser Therapy (HILT) has been used more recently in the therapeutic protocols of physiotherapy. The benefits of this noninvasive, painless, and convenient method include increased joint mobility, effective deep tissue stimulation, anti-inflammatory and analgesic effects, and more. Shear wave imaging has the benefit of offering quantitative measurements in a comparatively limited area of the tendon, making it possible to precisely identify and quantify tendon disease, which is known to affect distinct locations. It is yet unclear how HILT will affect the tendon's mechanical characteristics over time (such as its stiffness and elasticity) and whether these modifications will translate into better clinical outcomes.

Need of the study: The findings from the study will help to improve clinical outcomes by determining how the effect of high intensity laser therapy will result in the changes in the shear wave properties of Achilles tendon.

Aim: This study aims to determine the effect of HILT on shear wave elastography of Achilles tendon in healthy adults.

Materials and Methods: One group quasi experimental study will be conducted at a tertiary care superspeciality hospital on healthy individuals. Sample size will be calculated after pilot testing. Patients will be recruited based on inclusion and exclusion criteria using purposive sampling method. Shear wave elastography will be used to determine the pre and post intervention changes in the Achilles tendon. HILT will be given to the patients for 3 consecutive sessions to assess what changes occurred post intervention.

Keywords: Joint mobility, Shear wave imaging, Therapeutic physiotherpay protocols