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FULL-TEXT ARTICLE**Comment in:**[Arch Phys Med Rehabil.](#) 2006 Dec;87(12):1673; author reply 1673.**Effect of heat in increasing the range of knee motion after the development of a joint contracture: an experiment with an animal model.**[Usuba M](#), [Miyanaga Y](#), [Miyakawa S](#), [Maeshima T](#), [Shirasaki Y](#).

Doctoral Program of Sports Medicine, Graduate School of Comprehensive Human Science, University of Tsukuba, Japan. usuba@k.tsukuba-tech.ac.jp

OBJECTIVE: To compare the effects of 2 different heat modalities, infrared and ultrasonic therapy, on a knee flexion contracture. **DESIGN:** In vivo, experimental, controlled study involving a rat knee joint contracture model that was immobilized using a ligature in flexion for 40 days. **SETTING:** Collegiate research laboratory. **ANIMALS:** Ninety-three adult male Wistar rats. **INTERVENTIONS:** After remobilization, rats were assigned to 3 treatment groups: stretching only (S), stretching with infrared therapy (S+IR), and stretching with ultrasonic therapy (S+US). Six treatment sessions were given in 2 weeks. **MAIN OUTCOME MEASURES:** The angle of maximum knee extension, wet-weight of triceps surae muscles, phase lag, and dynamic stiffness as mechanical responses were measured, and histologic study was conducted. **RESULTS:** Compared with the S group, both the S+IR and S+US groups exhibited a significant increase in range of motion (ROM) ($P=.021$, $P=.008$, respectively) and a tendency to decrease the phase lag, but there was no significant difference between the 2 heat-combined groups. There were no differences in the weights of the triceps surae muscles and in dynamic stiffness among the groups. **CONCLUSIONS:** Six treatment sessions of stretching with infrared or ultrasound were more effective than stretching without heat at increasing the ROM and decreasing the phase lag of a moderately severe joint contracture. The clinical implementation of heat is advocated to regain a normal ROM and mechanical property when experiencing a joint contracture.

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