Thesis Title THE STUDY OF EFFECTS OF CONTINUOUS ULTRASOUND USING STATIONARY TECHNIQUE IN NORMAL SUBJECTS

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ABSTRACT

The effects of continuous ultrasound with stationary soundhead technique on the F-wave parameters of the left median nerve and the segmental blood flow of the same area were studied in 30 normal subjects (11 males and 19 females). Pilot studies on pattern of temperature changes were performed in pork and monkeys and about time threshold in 23 human subjects. Effects of 0.5 w/cm^2 for 60 sec., 1.0 w/cm^2 for 20 sec.,1.5 $w/cm^2$for 10 sec. and placebo for 60 sec.,were studied with at least 3 days separation between each session. EMG studies were performed in the abductor pollicis

brevis muscles of 5 subjects at least 14 days after the study session of 1.5 w/cm^2 and in 2 subjects at 21th and 28th days after completion of the 4 study sessions. Results of the study showed no effect on the F-wave parameters of median nerve and the segmental blood flow in the elbow area measured by electrical impedance plethysmographic method. EMG studies showed normal pattren. These results suggested that continuous ultrasound applied with stationary soundhead technique, using intensities and durations within the pain thresholds, would not induce change in F wave parameters and segmental blood flow measured by electrical impedance plethysmographic method. So, this technique can be used in physiotherapy clinic with safety if the intensities and the durations are within pain threshold.