

# Measurement of active abduction of metacarpophalangeal joints via electronic digital inclinometric technique

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## SUMMARY

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To define the usefulness of electronic digital inclinometric (EDI) method to measure active abduction of metacarpophalangeal joints and to determine the mean scores.

A modified electronic digital inclinometric method which was specifically designed to measure range of joint movements was administered to metacarpophalangeal joints of 20 male and 21 female university students. Active abduction of each metacarpophalangeal joint of both dominant and non-dominant hands were measured and recorded separately.

Results were presented as mean  $\pm$  standart deviation and statistical analysis of data was performed. First data obtained for Turkish people were as follows: 4.12<sup>0</sup> for thumb, 41.9<sup>0</sup> for index finger, 80.98<sup>0</sup> for median finger (approximately twice of others as it was the sum of radial and ulnar abductions), 41.57<sup>0</sup> for ring finger and 48.53<sup>0</sup> for little finger.

Electronic digital inclinometer was found to be safe, practical and useful in the measurement of active movement ranges of metacarpophalangeal joints.

## INTRODUCTION

Joint movements may be measured via different methods like goniometry, photogrametry, radiometry or computer assisted action analysis systems. Among these, goniometry is the oldest and simplest one (Mallon et al., 1991, Cambridge-Keeling, 1995). It is widespread, cheap and easy to use. But it does not have fine tuning or digital recording and is not suitable for active measurement. On the other hand, computer assisted action analysis systems are suitable for active measurement and may be used in research laboratories but they are expensive and have limited usage