

Biokinetic study of the wrist joint

Abstract

Introduction: Quantification of joint mobility by ROM (range of movement), meaning the maximal range of joint angle, is used to evaluate the degenerative joint disorders and the efficacy of treatment. Age, gender, individual habits, daily activities and tissue degeneration influence the joint ROM. The wrist joint, with many supporting tissues to perform a motion, is a complex structure. Many studies mentioned ROM may be different in various racial groups because of their body built, underlying diseases. Objective: This study aims to establish a database of wrist joint ROM and factors influencing it among Myanmar population. Method: 120 Myanmar volunteers with no past history of musculoskeletal or neural lesions, but with normal functional wrist joints of both sides, were included. 30 subjects (15 males and 15 females) each from 5-17 year, 18-40 year, 41-60 year, 61 year and above age groups participated. Various ranges of wrist joint motions were measured by hand goniometry in pronation position only as most of the daily activities were usually performed in pronation. Result: The average of ROM of wrist-joint flexion was 68.3 degrees, extension was 68.2 degrees, radial deviation was 19.6 degrees and ulnar deviation was 26.1 degrees. Significant difference between male and female was found in ulnar deviation of right side. 5-17 year age group had wider range of motion than other age groups while over 60 people has lowest. Conclusion: The findings highlighted the decline in wrist-joint motion capability with age. If facilities are available, ROM of wrist joint during both pronation and supination should be measured by using electrogoniometer.