

Research report summary sheet

Ergonomic analysis of MOUZEN® hand support during computer mouse work

Dr.Boštjan ŠIMUNIČ and Dr.Saša JOVANOVIĆ

Science and Research Centre Koper, Slovenia

INTRODUCTION: The aim of the study was to establish the effectiveness of MOUZEN hand support for carpal syndrome prevention during computer mouse handling.

METHODS: Wrist angles were studied in 12 participants during standardised work on the computer with and without MOUZEN hand support. A continuous data was recorded for wrist flexion/extension and for ulnar/plantar flexion using wireless acquisition system (NORAXON) at 1500 Hz. The time spent above wrist critical angles were calculated as proposed by Guidelines for wrist posture based on carpal tunnel pressure thresholds.

RESULTS: Using MOUZEN hand support participants spent 72% less time in critical wrist extension and 22% less time spent in critical ulnar flexion. Furthermore, MOUZEN hand support led to 16% lower transition in wrist flexion/extension direction. Most of the work effectiveness were uncompromised using MOUZEN, where only high-precision mouse handling was compromised by 4%.

CONCLUSION: We could confirm MOUZEN hand support as an effective and safe addition to computer mouse work.

	without MOUZEN	With MOUZEN	Difference
Time of wrist extension > 32.7 deg / %	20.2 ± 26.4	5.6 ± 7.4	-72%
Time of wrist flexion < -48.6 deg / %	0.1 ± 0.2	0.0 ± 0.2	N.S.
Time of wrist ulnar flexion > 14.5 deg / %	58.1 ± 35.0	45.3 ± 39.6	-22%
Time of wrist radial flexion < -21.5 deg / %	1.1 ± 2.5	8.5 ± 24.3	N.S.
Average wrist extension / deg	25.1 ± 5.8	16.6 ± 12.5	-34%
Variance of wrist extension / deg	9.4 ± 2.8	7.9 ± 2.3	-16%
Average wrist ulnar flexion / deg	12.7 ± 13.2	9.2 ± 18.3	-27%
Variance of wrist ulnar flexion / deg	11.3 ± 2.5	10.8 ± 2.8	N.S.

N.S. not significant

