

EFFECT OF NON-ELASTIC WHITE TAPE AND KINESIO TAPE ON FOOT PRESSURE DURING LEVEL WALKING

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INTRODUCTION: Taping has been widely used for athletic trainers to re-build the longitudinal arch and to relieve the tension of plantar fascia. It is important to know how efficient the tapes are in supporting the foot's longitudinal arches for the athletes. Therefore, the purpose of this study was to investigate the effect of non-elastic white tape and kinesio tape on foot pressure during level walking.

METHOD: Seven male subjects participated in this study. They had a mean age of 22 years, a mean body weight of 66 kg, and a mean height of 171 cm. Footscan plate system (RS scan International corp., Belgium) was used to measure peak pressure on the right foot. Subjects were asked to walk over the platform at a self-selected, fast and slow speeds. Data were measured in three conditions, native, non-elastic white tape (LowDye technique) and kinesio tape. The testing sequence was random for each subject. Data were sampled at 500 Hz. Two-factor ANOVA with repeated measure was used (SPSS, V13.0).

RESULTS: Peak pressures on ten regions of the foot were shown in Table 1. Significant effect of taping on foot pressure was found on the regions of the 2nd – 5th toes and the 5th metatarsal during level walking ($p < .05$). Significant effect of walking speed on foot pressure was found on the regions of the big toe and medial heel during level walking ($p < .05$).

Table 1 Peak Pressure (N/cm²) during level walking (T: toe; M: metatarsal; MF: midfoot; MH: medial heel; LH: lateral heel; Significant difference in speed* and in tape^ ($p < .05$))

Speed	Tape	T1*	T2-5^	M1	M2	M3	M4	M5^	MF	MH*	LH
Free	Native	7.4	3.7	8.8	12.6	15.0	12.2	7.8	5.8	11.4	11.4
	White	7.8	3.1	9.2	13.4	15.6	14.5	8.3	5.5	12.6	11.8
	Kinesio	8.4	3.6	8.3	11.5	15.3	14.1	8.0	5.4	13.1	13.4
Slow	Native	6.9	3.4	9.4	13.6	15.9	12.2	6.9	5.2	12.2	11.7
	White	7.6	2.6	8.2	12.9	15.2	14.8	9.2	5.8	13.0	13.2
	Kinesio	6.1	3.1	8.6	12.7	15.5	12.2	7.1	5.6	11.9	11.7
Fast	Native	8.2	3.1	9.0	12.9	14.7	12.4	7.6	5.4	13.1	12.6
	White	7.9	2.8	9.3	13.4	14.9	13.3	7.9	5.2	13.5	11.3
	Kinesio	8.6	3.8	9.6	13.6	15.9	13.1	7.2	4.9	13.6	12.2

DISCUSSION: Peak pressure on big toe was increased with the increasing walking speed. Peak pressure on the 2nd - 5th toes with white tape was significantly less than pressures in other two taping conditions. However, white tape substantially increased peak pressure on the 5th metatarsal, indicating pressure was shifted toward lateral side of foot with white tape.

CONCLUSION: This study demonstrated how the tape and walking speed influence the peak pressure during level walking. The findings would provide the athletic trainers and physical therapists the information about the effect of tape and speed on foot pressure.