

Differences in the electromyography activity of a roundhouse kick between novice and advanced taekwondo athletes

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Aim. The aim of this study was to determine differences in muscular activation and the moment of maximum electromyography amplitude pre- and post-impact of the roundhouse (bandalchagui) kick between novice and advanced taekwondo athletes. **Method.** Sixteen taekwondo competitors (four women) were categorized according to years of practice into novice ($n = 8$, < 3 years of experience) and advanced athletes ($n = 8$, ≥ 3 years of experience). The soleus, tibialis anterior, lateral gastrocnemius, vastus medialis, vastus lateralis, rectus femoris, biceps femoris and semitendinosus muscles were analyzed with surface electromyography. The variables of muscle activation and the moment of maximum electromyography amplitude were expressed as a percentage with respect to the maximum voluntary isometric contraction and the kick cycle, respectively. The effect size was calculated with Cohen's d and a significance level of $p < .05$ was established. **Results.** The results showed differences in the percentage of activation of soleus, rectus and biceps femoris for the pre-impact phase between novice and advanced athletes ($p < .05$; $d > .5$). Post-impact differences between groups were observed for the vastus medialis ($p = .041$; $d = .761$). The moment of maximum electromyography amplitude reflected differences in both phases for biceps femoris and semitendinosus muscles ($p < .05$; $d > .5$). **Conclusion.** Differences in electromyography activity by years of experience among taekwondo athletes were observed, which could be considered for

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Bandalchagui

Combat sports

Electromyography

Martial arts

Taekwondo