

## عنوان مقاله:

Time Frequency Wavelet Analyses of Sprint Start in Young Elite Sprinters

## محل انتشار:

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## نویسنده:

## خلاصه مقاله:

Surface electromyography is the method commonly used to evaluate the muscle activity in movements. A time frequency analysis based on wavelets is hereby an appropriate tool to study patterns of muscle fiber recruitment during the sprint start. The aim of this study was to identify muscle fiber activity based on the wavelet technique during the sprint start. Also, the influence of age, gender and anthropometric parameters was investigated. Sixty young elite sprinters volunteered for this study. Bilateral electromyographic activity was recorded from the Gastrocnemius medialis (GAS), Rectus femoris (RF), Biceps femoris (BF) and Gluteus maximus (GLU) for both rear and front legs. For statistical analysis Kolmogorov-Smirnov normality test and one-way ANOVA with Scheffé post hoc test was used. During all phases of sprint start, the GAS muscles of rear and front legs showed significantly higher frequencies while the GLU muscles presented lower frequencies than any other muscles. No significant differences were observed between boys and girls, however, the results showed that the older sprinters, the ones with a higher percentage of thigh and calf circumference and skeletal muscle mass have a better capability to recruit more fast twitch fibers, for instance in the GAS. The results indicate that the recruitment of high frequency muscle fibres during the sprint start .may be explained by the explosive nature of these movements

## کلمات کلیدی:

Sprint Athletes, Wavelet Analysis, Anthropometrical Parameters, Sprint Start

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