



KEY WORDS

- ✓ Exercise-Induced Muscle Damage
- ✓ Titin
- ✓ Biomarker
- ✓ Eccentric Contraction

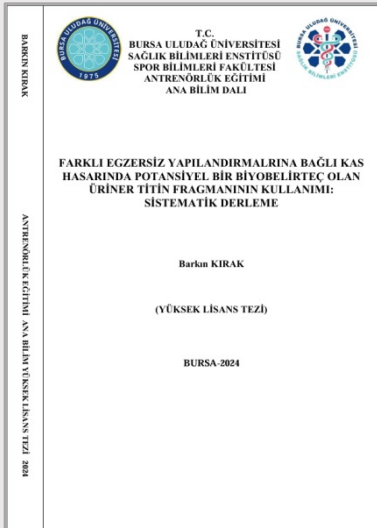
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Use of Urinary Titin Fragment as a Potential Biomarker for Muscle Damage Due to Different Exercise Configurations: A Systematic Review

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THESIS ABSTRACT

The aim of this study is to reveal the relationship between the kinematics of urinary titin fragment concentration and other muscle damage markers in the evaluation of exercise-induced muscle damage, and to create a perspective for the future use of this potential biomarker. In this systematic review, the PRISMA declaration was taken as a guide. The literature search was conducted through 5 different databases (Pubmed, Web of Science, Medline, Scopus, Science Direct). Criteria for including the reviewed studies in the compilation; (1) healthy individuals; (2) studies involving muscle damage resulting from exercise intervention; (3) Use of at least one serum muscle damage biomarker or imaging technique; (4) at least one of the following evaluations: muscle pain, maximum voluntary contraction, muscle strength, and joint range of motion; (5) muscle damage markers were reported with repeated measurement results. A total of 9 studies were included in the current systematic review by complying with the established criteria. When the studies are examined; urinary titin fragments showed significant correlations with other markers. As a result, it appears that UTF may be an important biomarker of exercise-induced muscle damage and can be used as a new and potential biomarker to detect muscle damage sensitively.

APPLICATION AREAS OF THE THESIS RESULTS

In the future, the development of rapid and cost-effective kits for assessing urinary titin fragments (UTF) will make it easier and more practical for coaches and sports scientists to monitor exercise-induced muscle damage during field measurements.

ACADEMIC ACTIVITIES

Bölükbaş, M. G., Kırak, B., & Vatansever, Ş. (2022). COVID-19 Pandemi Sürecinde Fiziksel Aktivite Düzeyi, Psikolojik Sağlamlık ve Koronavirüs Anksiyetesi Arasındaki İlişki. *Türkiye Spor Bilimleri Dergisi*, 6(1), 1-13.