

## Implementation of Active Recovery at Immediate, 12 and 24 Hours Post-Training in Young Soccer Players

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**Abstract :** In the pursuit of athletic performance, the role of physical training which is determined by a number of charges or taxes on physiological stress and musculoskeletal systems of the human body generated by the intensity and duration is fundamental. Given the physical demands of these activities both training and competitive must take into account the optimal relationship with a straining process recovery post favoring the process of overcompensation which aims to facilitate the return and rising energy potential and protein synthesis also of different tissues. Allowing muscle function returns to baseline or pre-exercise states. If this recovery process is not performed or is not allowed in a proper way, will result in an increased state of fatigue. Active recovery, is one of the strategies implemented in the sport for a return to pre-exercise physiological states. However, there are some adverse assumptions regarding the negative effects, as is the possibility of increasing the degradation of muscle glycogen and thus delaying the synthesis thereof. For them, it is necessary to investigate what would be the effects generated application made at different times after the effort. The aim of this study was to determine the effects of active recovery post effort made at three different times: immediately, at 12 and 24 hours on biochemical markers creatine kinase in youth soccer player's categories. A randomized controlled trial with allocation to three groups was performed: A. active recovery immediately after the effort; B. active recovery performed at 12 hours after the effort; C. active recovery made at 24 hours after the effort. This study included 27 subjects belonging to a Colombian soccer team of the second division. Vital signs, weight, height, BMI, the percentage of muscle mass, fat mass percentage, personal medical history, and family were valued. The velocity, explosive force and Creatin Kinase (CK) in blood were tested before and after interventions. SAFT 90 protocol (Soccer Field specific Aerobic Test) was applied to participants for generating fatigue. CK samples were taken one hour before the application of the fatigue test, one hour after the fatigue protocol and 48 of the initial CK sample. Mean age was  $18.5 \pm 1.1$  years old. Improvements in jumping and speed recovery the 3 groups ( $p < 0.05$ ), but no statistically significant differences between groups was observed after recuperation. In all participants, there was a significant increment of CK when applied SAFT 90 in all the groups (median 103.1-111.1). The CK measurement after 48 hours reflects a recovery in all groups, however the group C, a decline below baseline levels of -55.5 (-96.3 /-20.4) which is a significant find. Other research has shown that CK does not return quickly to their baseline, but our study shows that active recovery favors the clearance of CK and also to perform recovery 24 hours after the effort generates higher clearance of this biomarker.

**Keywords :** active recuperation, creatine phosphokinase, post training, young soccer players

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