

EFFECTS OF 12 WEEKS ADDITIONAL AEROBIC EXERCISE ON SERUM LEVELS OF STRESS HORMONES AND OXIDATIVE STRESS IN YOUNG BASKETBALL PLAYERS

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Introduction: High-intensity exercise induced oxidative stress; however, regular aerobic exercise could enhance antioxidant capacity. The purpose of this study is to investigate the effect of additional aerobic exercise after general and daily basketball training program for lasting 12 weeks on serum levels of the stress hormone and oxidative stress biomarkers in young players.

Methods: Nine players of varsity basketball team (age 19.90 ± 1.17 yrs, ht= 176.43 ± 6.51 cm, wt= 68.78 ± 9.61 kg and BMI= 22.02 ± 2.68) without any acute or chronic inflammatory diseases were recruited to participate in this study. Besides daily basketball training program, all subjects will be instructed to perform an additional 30-minute running design (RPE 13~16) at least three times per week for 12 weeks in the late afternoon (4:30 pm to 6:00 pm) at self-paced comfortable speed. Pre-and-post tests were employed to measure blood biochemical indexes, the stress hormone and levels of oxidative stress.

Result: The concentration of cortisol, as stress hormone, was significantly decreased after 12 weeks extra running project. The levels of glutathione (GSH) and catalase (CAT) were notably enhanced to compare pre- with post- test. However, there was no difference in thiobarbituric acid reactive substances (TBARS) concentration.

Discussion: High-intensity training may cause body and mental stress and induce oxidative stress. Regular and moderate aerobic exercise might improve above situation. Long-term extra 30-min moderate intensity running was likely to ameliorate psychological stress and the status of oxidative stress after daily vigorous basketball training.

Conclusion: Added 30-minute moderate running plan at least three times per week for

consecutive 12 weeks may decrease the stress hormone and increase the antioxidant levels after daily basketball training program.

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