

EFFECT OF EXERCISE INTENSITY ON IMMUNE RESPONSE IN TRAINED THAI MEN

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Introduction: Previous studies in white population reported that immune cell count was related to exercise intensity. However, this response in Thai population was not shown before. The purpose of this study was to investigate effect of exercise intensity on immune cell counts in trained Thai men.

Methods: Seven trained Thai men aged between 18 and 45 years old, randomly performed 30-minute exercise on cycle ergometer at 25, 65 and 85 percentage of maximum oxygen consumption referring to low, moderate and high intensity with at least 7 days apart. Blood samples were collected before exercise (T0), immediately after exercise (T30) and 30 minutes after exercise (T60) to determine number of total white blood cells (WBCs), neutrophil (NE), lymphocyte (LY) and monocyte (MO).

Results: In moderate intensity, WBCs, NE and LY counts at T30 significantly increased compared to T0 while at T60, they significantly decreased compared to T30. In high intensity, WBCs and MO counts at T30 significantly increased compared to T0 while WBCs, NE and LY counts at T60 significantly decreased compared to T30. Moreover, at T30 in moderate intensity, LY counts significantly increased compared to low intensity.

Conclusion: Acute bout of exercise with various intensities produced transient perturbations in immune cell counts. The magnitude of the perturbations depended on the intensity of exercise.

TECHNICAL SKILL TESTING PREDICTS STATUS IN JUNIOR AUSTRALIAN FOOTBALL

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Currently, it is unknown if technical skill testing is predictive of status in junior Australian Football (AF) despite technical ability being shown to influence success in the game (Sullivan, Bilsborough, Cianciosi et al., 2013). Thus, this study examined if a kicking test could predict and classify status in junior AF. Players were recruited from the 2013 under 18 (U18) West Australian Football League competition and classified into two groups; elite (state U18 representatives; n=25; 17.9 ± 0.5 y) and sub-elite (non state U18 selection; n=25; 17.3 ± 0.6 y). Both groups completed the Australian Football Kicking (AFK) test, which was designed to assess kicking accuracy and ball speed on dominant and non dominant sides. The design of the AFK test was initially modelled on the kicking test used within the Australian Football League (AFL) National Draft Combine but was psychometrically adapted for use within this study. A MANOVA modelled the main effect of 'status' (2 levels: elite, sub-elite) on the skill test parameters (kicking accuracy and ball speed on dominant and non dominant sides), whilst logistic regression models were built using the same test parameters. Bootstrapped receiver operator curves (ROC) were produced to assess the discriminant ability of the predictive model; with an area under the curve (AUC) of 1 representing perfect discriminant power. Between group differences were noted across all test parameters, whilst the full model (combination of kicking accuracy and ball speed on both dominant and non dominant sides) was the best predictor of status ($w_i = 0.25$, AUC = 89.4%), successfully detecting 84% of the true positives (elite players) and 76% of the true negatives (sub-elite players). The AFK test can be used a means of predicting and thus classifying elite junior AF players, warranting its use as a means of sports specific talent identification in junior AF.

Reference List

1. Sullivan, C., Bilsborough, J.C., Cianciosi, M., Hocking, J., Cordy, J. and Coutts, A.J. (in print). Match score affects activity profile and skill performance in professional Australian Football players. *Journal of Science and Medicine in Sport*, doi: <http://dx.doi.org/10.1016/j.jsams.2013.05.001>