

The acute effects caffeine on testosterone and cortisol in young football players after One Session Anaerobic exercise

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Abstract : Introduction: Interest in the use of caffeine as an ergogenic aid has increased since the International Olympic Committee lifted the partial ban on its use. Caffeine has beneficial effects on various aspects of athletic performance, but its effects on training have been neglected. The purpose of this study was to investigate the acute effect of caffeine on testosterone and cortisol in young futsal players. Methods: Twenty-four professional futsal players with 18.3 ± 1.9 years ingested caffeine doses of 0, 200 and 800 mg in random order 1 hr before an anaerobic-exercise session (RAST test). Samples were taken at the time of caffeine ingestion and 30 min after the session. Data were log-transformed to estimate percent effects with mixed modeling, and effects were standardized to assess magnitudes. Results: Testosterone concentration showed a small increase of 15% (90% confidence limits, $\pm 19\%$) during exercise. Caffeine raised this concentration in a dose-dependent manner by a further small 21% ($\pm 24\%$) at the highest dose. The 800-mg dose also produced a moderate 52% ($\pm 44\%$) increase in cortisol. The effect of caffeine on the testosterone: cortisol ratio was a small decline (14%; $\pm 21\%$). Discussion and Conclusion: Caffeine has some potential to benefit training outcomes via the anabolic effects of the increase in testosterone concentration, but this benefit might be counteracted by the opposing catabolic effects of the increase in cortisol and resultant decline in the testosterone: cortisol ratio.

Keywords : anabolic, catabolic, performance, testosterone, cortisol ratio, RAST test

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