



THE EFFECT OF LENGTH OF TAPERING ON INTERLEUKIN-6, CORTISOL AND PERFORMANCE IN ELITE MALE WRESTLER

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This study investigated the effect length of tapering periods on concentration of plasma interleukin-6 (IL-6), cortisol and performance in elite male wrestlers. Because of the response to training-induced stress, the hormones, IL6 and cortisol, are often discussed as markers for monitoring the stress of training and as predictors of performance capacity. After completing 4 weeks of the progressive training exercise, the subjects were randomly assigned to three groups: a non-tapering group (n=10) which continued performing the progressive weekly training for 1 week; a 1 week tapering group (n=10); and a 3 week tapering group (n=10). Both of the taper groups used a 75% reduction in training volume. Blood interleukin-6 and cortisol levels were assayed. Aerobic power, anaerobic power, and general muscle strength, was recorded to form a performance profile score. All data were collected before and after progressive training, and also after the tapering period. There were significant reductions in interleukin-6 levels between both tapering groups with the non-tapering group ($p=0.00$). There were significant reductions in cortisol levels between tapering 1 week and non-tapering group ($p=0.00$). Also There was significant increase performance profile score between 1 week tapering and non-tapering group ($p=0.01$). 1 week tapering group with a 75% reduction in training volume after progressive training is more effective strategy for reduction interleukin-6, cortisol levels and higher performance profile score to compare with non-tapering and 3 week tapering in elite male wrestlers. It seems that shorter tapering (1 week) before major competitions is more effective, when compared with a longer tapering (3 weeks) and non-tapering in elite male wrestlers.

Key words: length of tapering, Interleukin-6, Cortisol, Performance, wrestler**Table 1. Training programs** (Values in parentheses denote the number of sessions for each item per week)

Monocycle for Week	Progressive training WEEK				Non-tapering	Tapering 1 week	Tapering 3 week
Weeks	1	2	3	4	5	5	5,6,7
Warm-up(min)	15 (6)	15 (6)	15 (6)	15 (6)	15 (6)	15 (6)	15 (6)
Resistance training (min)	45 (3)	45 (3)	45 (3)	45 (3)	45(3)	11(3)	11(3)
Speed training (m)	160 (2)	190 (2)	210 (2)	240 (2)	270(2)	65(2)	65(2)
Pyometrics (jumps)	-	30 (3)	34 (3)	38 (3)	42 (3)	10(3)	10(3)
Technical training (min)	16 (3)	18 (3)	20 (3)	22 (3)	24(3)	6(3)	6(3)
Wrestling competition	10 (3)	12 (3)	14 (3)	16 (3)	18 (3)	4(3)	4(3)
Warm-down (min)	10 (6)	10 (6)	10 (6)	10 (6)	10 (6)	10 (6)	10 (6)

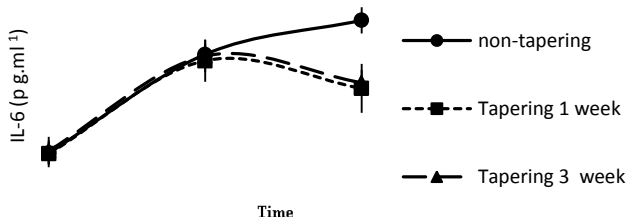
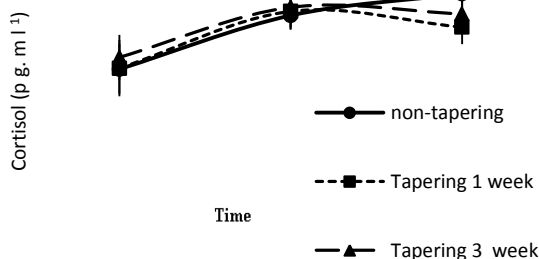


Fig 1: The comparison of the means (SD) of the IL6 plasma concentration before, after training phase as well as after tapering period in three groups. Significant differences between non-tapering and tapering 1 week (treatment effect) are seen where $p < 0.05$; Significant differences between non-tapering and tapering 3 week (treatment effect) are observed where $p < 0.05$; Significant differences from baseline (time effect) are observed where $p < 0.05$. Values are mean $\pm$ SE.



Cortisol: There were significant difference in cortisol levels after tapering period between non-tapering and tapering 1 week ($p=0.00$)

Fig 2: Means of cortisol plasma concentration during, after training phase as well as after tapering period (1 week) and (3 week) in three groups. Significant differences between non-tapering and tapering 1 week (treatment effect) are indicated with (a) where $P < 0.05$; Significant differences from baseline (time effect) are denoted by (d) where $P < 0.05$. Values are mean $\pm$ SE.

Performance profile score

There was a significant difference after tapering period in Performance profile score between non-tapering and tapering 1 week ($p=0.00$).

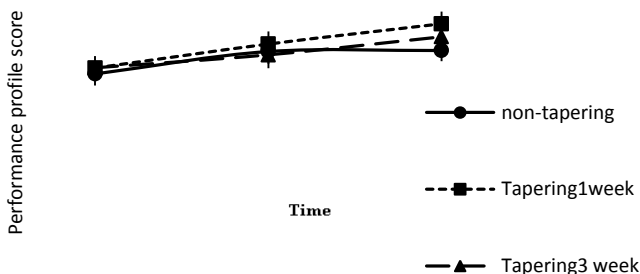


Fig 3: Means of performance profile score during, after training phase as well as after tapering period (1 week) and (three week) in three groups. Significant differences between non-tapering and tapering 1 week (treatment effect) are seen $p < 0.05$; Significant differences from baseline (time effect) are also seen where $p < 0.05$.

