



Does Testosterone versus Cortisol Answer Depend from Kind of Physical Activity Strength versus Endurance Training?



Benedikt Gasser*

Swiss Health & Performance Lab, Institute of Anatomy, University of Bern, Switzerland

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***Corresponding author:** Benedikt Gasser, Swiss Health & Performance Lab, Institute of Anatomy, University of Bern, Switzerland, Tel: +41316318468; Fax: +413163138 07; Email: gasser@pyl.unibe.ch

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Short Communication

Besides other biologic mechanism effects on Cortisol and Testosterone homeostasis due to physical activity seem to be different for endurance versus strength athletes [1-4]. Biologic interaction between running and the CRH - ACTH system and its interaction with steroid hormones of adrenal gland and effects on body composition (e.g. skeletal muscle) are not finally understood [5-8]. It seems that the CRH - ACTH system mainly plays a role as an intermedator [9]. Normalization of levels in healthy runners even after large exercises such as ultra - marathon running, mountain running, or exercising in huge cold occur within one week [8,10-12]. In contrast to Cortisol, Testosterone seems to be lower after running respectively endurance activities in contrast e.g. strength training [8,13].

Effects of repetitive endurance stress depend on intensity and length of training with potential pooling effect yielding to a new phenotype [1,10,11]. Especially, the findings of increased Cortisol and reduced testosterone levels after repeating stresses seems to support the premise of a specific endurance phenotype suggesting a linkage between the low resting testosterone found in endurance - trained runners and stress hormones [14]. On endocrine as well as on musculoskeletal level stresses seem to specifically stimulate signal cascades in endurance and strength training even inhibiting each other [5,6]. Given this fact, also on endocrine level training in chronological blocks is recommended, to increase potential positive effects of Training [5,6].

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