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FUNCTION INDEX CHANGE TREND OF FIGHTING EVENTS- GROUP ATHLETES DURING WEIGHT REDUCTION BEFORE COMPETITION: A META-ANALYSIS

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Objective The aim of this meta-analysis was to assess the function index change trend of some fighting event-group athletes during weight reduction before competition.

Methods Pub Med, MEDLINE, EBSCO, CNKI, Wanfang and VIP were searched to collect the scientific literatures about the change trend of body composition and function index of wrestling, judo and taekwondo athletes during weight reduction before the competition. The quality of literature was critically appraised, and data were extracted by 2 reviewers independently. Meta-analysis was conducted for eligible literatures.

Results A total of 14 studies were included in this meta-analysis. Stata software was used for data processing to observe the trend of body composition and function index during the process of weight reduction before competition. The average weight of athletes in judo, wrestling and taekwondo decreased by 5.23kg and the body fat percent decreased by 2.13% on average. Testosterone decreased by 3.93nmol/L on average and cortisol increased by 68.55nmol/L on average. Hemoglobin decreased by 1.84g/L on average and blood urea decreased by 0.026 mmol/L on average. It was also found that the body weight and the body fat percent decreased significantly during the fast control period ($P < 0.05$), the decrease of the body fat percent during the fast control period was significantly higher than that in the slow control period. Testosterone decreased significantly ($P < 0.01$) during the slow control period and continued downward trend until pre-competition. Hemoglobin in the fast control period and pre-competition significantly lower than that before weight control ($P < 0.05$). The level of blood urea in fast control period was significantly higher than that in slow control period ($P < 0.01$).

Conclusions The decrease of body weight and body fat percent was concentrated in fast control period to pre-competition stage. Testosterone levels began to decline at the slow control period and lasted until the pre-competition. It is inconsistent with the expected results of coaches and athletes. We need further search for reasons.