

Effect of Weight Reduction on Selected Physiological Parameters in Male Junior National Boxing Campers

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Abstract

The study was conducted on a total of 24 junior national boxing campers to assess pattern of change in body weight (BW) during the camp and effect of weight reduction on selected physiological parameters. On the day of joining the camp, BW, standing height, grip strength, grip endurance, resting pulse rate, resting blood pressure, body fat percent (BF%) and fat free mass percent (FFM%) were measured using standard techniques. However, BW was measured thrice during 20 days' camp; firstly on the day of joining and subsequently on 10th and 19th (one day before competition) days of camp. Change in BW (as measured on 1st and 19th day) was calculated. Campers who reduced their BW by >1% during the camp were selected and studied further for relative changes in selected parameters. Out of 24 subjects only 10 reduced BW by 4.68% during the camp and weight reduction indicated a gradual pattern. Comparison before and after weight reduction revealed increase in resting pulse rate, resting blood pressure (systolic and diastolic) and BF%. However, only resting diastolic blood pressure indicated significant ($p < 0.05$) increase. A non-significant decline in grip strength, grip endurance and FFM was observed after weight reduction. Thus, gradual weight reduction up to 5% of BW to compete on the top of lower weight category may not affect grip strength and endurance.

Key Words: Weight-Reduction, Boxers, Grip Strength, Grip Endurance, Body Composition, Blood Pressure

Introduction

In today's world of neck to neck competition, an athlete cannot afford to take a chance as minute fraction of time can deprive him of fame and fortune. In never ending quest for winning, athletes try to use all possible means, which promise to improve their performance. They do not want to leave any stone unturned in getting the extra edge over their counterparts. It has been seen that making weight is common problem in combative sports like judo, wrestling, boxing etc, where athletes are divided into weight categories (*Widerman and Hagon, 1982; Webster, 1990; Hall and Lane, 2001*). In such events, athletes generally intend to compete on top of the lower category, as chances of winning become more. For this purpose they try to reduce weight rapidly by any means. Ideally, weight should be reduced

systematically and gradually through a well planned scientific method so that weight is lost mainly through fat. It has a beneficial effect on performance, because it gives extra strength to the player.

It is seen that some boxers gain weight during the off-season. So they reduce weight rapidly only a few days before the competition. As weight reduction cannot be done by diet and exercise planning in few days, athletes depend upon total food and fluid restriction. If desired weight is not achieved by total restriction of food and liquid alone, they use various dehydration techniques to lose weight (*Webster et al., 1990*). State of hypo-hydration and continuous feeling of hunger and thirst may affect the working capacity and psychological condition of athletes (*Horswill et al., 1990; Hall and Lane, 2001*). Dehydration may decrease blood