Changes in body composition, nutritional and biochemical parameters in an elite ski jumper – a case study
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Abstract

Introduction

Skijumping is a sport where body weight has a profound influence on jump length and the velocity of motion. A lighter athlete can fly further and have a smoother touch down due to a lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2). In response to this many ski jumpers diet to lower landing velocity given that all other performance aspects are the same (1,2).

Methods

Body weight, lean body mass (LBM), fat %, bone mineral density (BMD) (DEXA), blood samples, repeated 24h recall and jumping performance (CMJ) were measured. The nutritional counselling included meal plans, follow up at home in combination with a focus on maintaining a common daily diet and increasing energy availability as much as possible, while still maintaining appropriate body weight for ski jumping. RESULTS: His body weight was reduced from 66.4 kg (BMI: 18.5 kg/m²) in 2003 to 64.6 kg (BMI: 18.3 kg/m²) in 2011. His body weight has fluctuated at the most 3 % during the season. Body composition measures showed a change in %F from 6.9 % to 6.4 %, %LBM from 69% to 71% and %A from 24% to 23% during the period 2003-2011. Repeated 24h recall showed an overall energy intake of approximately 1900 kcal (15 kcal/kg BMD) in season and 2200 kcal (22 kcal/kg BMD) off season. CONCLUSION: This case study presents some of the challenges no sport as a sport whose body weight is a central performance modifying factor. In skijumping weight has a profound influence on jump length. This pushes the athlete to compromise their health in order to achieve their athletic goals despite of the FIS (international skijumping federation) BMI rules. Nutritional counselling of skijumpers requires careful evaluation and follow up of both diet and body composition in combination with the sport physicans and other health personnel that enables peak performance over a number of years. This case study presents some of the challenges no sport as a sport whose body weight is a central performance modifying factor. In skijumping weight has a profound influence on jump length. This pushes the athlete to compromise their health in order to achieve their athletic goals despite of the FIS (international skijumping federation) BMI rules. 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Conclusion

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References:


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