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THE IMPACT OF BODY COMPOSITION ON FATIGUE AND COGNITION IN AN ADOLESCENT POPULATION

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Friday, May 3rd 2019 at 17:00
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In the context of modern sedentary society, obesity is a condition present in all continents, of all ages and social classes. The physiological and clinical implications of obesity are already well known and described. Nowadays, more interest is given to quality of life, psychological wellbeing, cognition and self-perceived fatigue. To situate the problem, one in four minors report severe fatigue at least once a week, additionally fatigue and loss of concentration are the most self-reported symptoms in obese children. Further, perceived fatigue in obese adolescents would reach similar levels as cancer patients receiving chemotherapy. These few examples show the impact of these phenomenon’s on adolescent life.

Previous literature reported increased fatigue and decreased cognitive functions in obese adolescents (among other clinical populations) versus normal weight peers. These studies reported cross-sectional data instead of interventional studies. Up to date, no studies were available that investigated the impact of weight loss on self-perceived fatigue and cognition in severe obese adolescents and its interrelation. This dissertation focusses on body fat and changes in body fat in relation to self-perceived fatigue and cognition. In addition, the impact of a weight management program including physical activity and diet on self-perceived fatigue and cognition as well as the impact of self-perceived fatigue on cognitive functions were evaluated.

This dissertation will explore the impact of fat mass and physical outcomes on self-perceived fatigue in normal weight school attending adolescents. Outcomes indicated a positive impact of physical activity and negative impact of body fat on self-perceived fatigue in adolescents. Further, it became apparent that contrary to fat mass, BMI is not associated with self-perceived fatigue.

To verify the results of the previous study and to elaborate further on this subject, the effect of a weight loss program on self-perceived fatigue was examined. Severe obese adolescents who started a weight loss intervention at the ‘Zeenreventorium’ were assessed for body composition, muscular- and perceived fatigue. The weight loss program had a positive effect on muscular- and perceived fatigue but no interrelations were found. Further, decreased fat mass was positively related with self-perceived fatigue. Finally, the results showed that weight status was linked with muscular- and perceived fatigue.

Finally, the impact of a weight loss program in severe obese adolescents on cognitive functioning will be investigated. Therefore, obese subjects were assessed for cognitive functions, body composition and self-perceived fatigue. The intervention improved the measured aspects of cognition as well as body composition and self-perceived fatigue. Interestingly, improvements of self-perceived fatigue were linked to improved cognition.

As general conclusion, this dissertation described parameters influencing self-perceived fatigue and reported significant improvements in self-perceived fatigue and cognition after a weight management intervention. The impact of fat on perceived fatigue and the positive effect of fat reduction on improved self-perceived fatigue shows the importance of proper weight management in adolescents. Furthermore, decreased self-perceived fatigue was linked to improved cognitive functions after a weight management program in obese adolescents. Further research should elucidate on the underlying mechanism and strategies to improve perceived fatigue and cognition in adolescents.

**CURRICULUM VITAE**

Stijn Vantieghem (Born on 19th August 1982) obtained first his professional bachelor in physical education in 2004 at KHLim Diepenbeek. In 2007 he got his Master in Science in Physical education and later in 2014 his Master in Science in Gerontology both acquired at the Vrije Universiteit Brussel. He started his Phd in 2013 as a teaching assistant. In addition, he teaches physical education at PIVA and AVANT also. Stijn is author of 8 peer reviewed articles, presented his research in 6 international congresses and published 2 vulgarizing publications.