

PHYSICAL ACTIVITY IN PREVENTION AND TREATMENT OF OBESITY

Summary

The effect of long-term (months, years) increased physical activity on energy balance is of importance for weight gain prevention. However, since increment in daily energy expenditure could be easily compensated by increased food intake, exercise program without dietary intervention usually is insufficient to control weight in persons who are already overweight. The effect of increased physical activity in conjunction with low-energy diet is clearly beneficial beyond weight reduction. Obesity, especially visceral obesity with fat accumulation within abdominal cave, is a condition associated with metabolic syndrome promoting cardiovascular diseases such as hypertension and atherosclerosis, diabetes mellitus type 2 and nonalcoholic fatty liver disease. The prevalence of metabolic syndrome including abdominal (visceral) adiposity, hypertension, high levels of plasma triglycerides, lipoproteins of low density, and high blood glucose concentration, dramatically increases worldwide in association with sedentary life style. Exercise, even without weight

reduction, has potential to decrease risk factors of metabolic syndrome, mainly due to increase tissue ability to oxidize fatty acids released from adipose tissue and improvement of muscle and other tissues insulin sensitivity. Another beneficial effect of adding physical exercise to the dietary treatment of obesity is an enhancement of physical working capacity due to improvement of cardiorespiratory function, increase of body flexibility, balance capacity, and prevention of a decrease of muscle strength caused by muscle tissue wasting, which is a consequence of calorie restricted diet. There is also evidence that exercise has reducing effect on depression and anxiety and can improve mood state, physical self-perception and self-esteem. The recommended amount of exercise for health benefit corresponds with energy expenditure of approx. 2000 kcal/week. It encompasses aerobic exercise (e.g. brisk walking, nordic walking, bicycling, swimming and cross-country skiing) and moderate resistance training increasing muscle strength.