

# HEALTH-PROMOTING EFFECTS OF ACCELERATION EXERCISE AND POLYPHENOLS IN ARCTIC LINGONBERRY IN HEALTHY VOLUNTEERS

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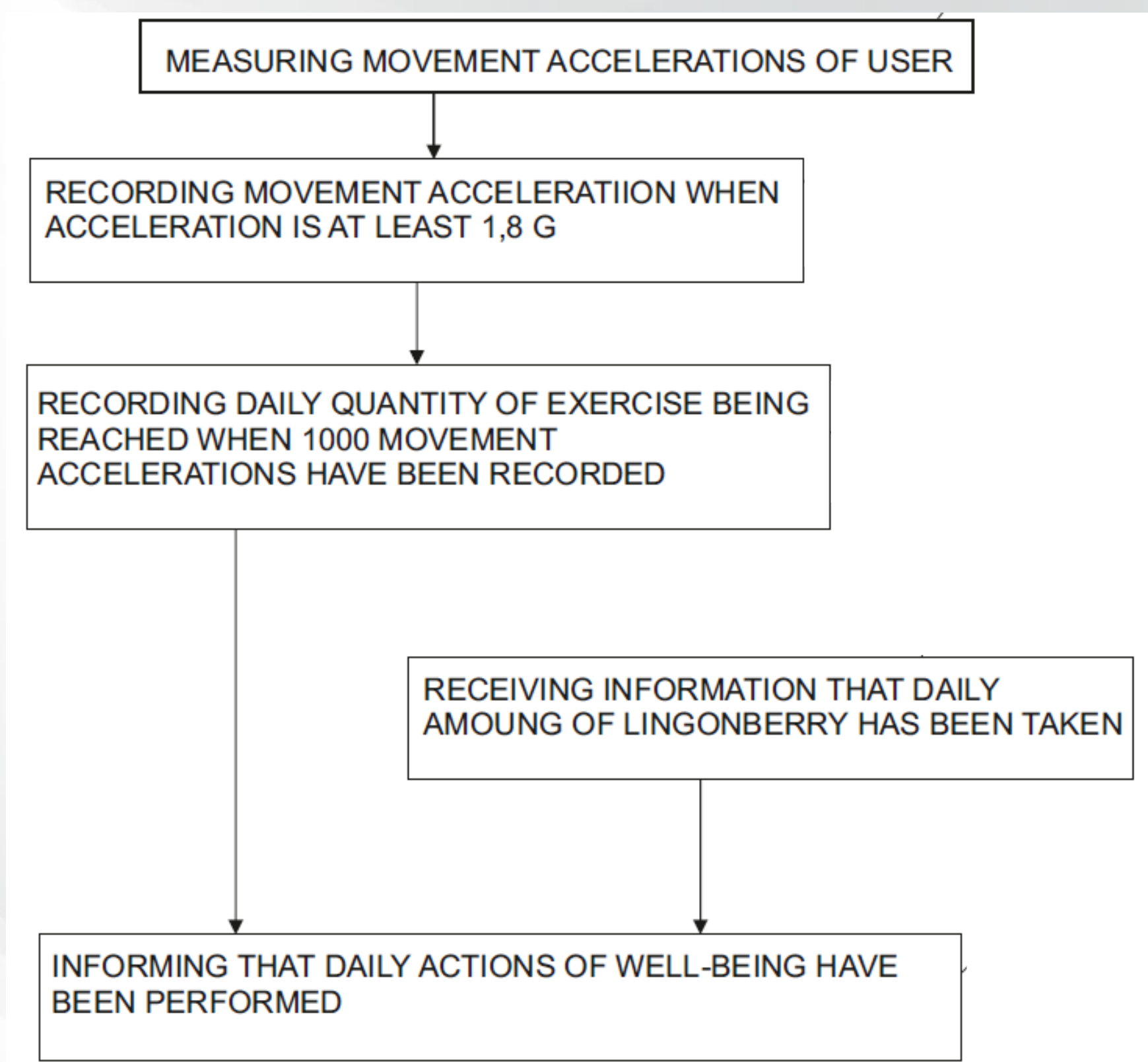
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**Introduction:** Acceleration exercise and polyphenol-rich arctic lingonberries have many health-promoting effects that counteract risk factors of lifestyle diseases. We have developed a method for recording movement accelerations for monitoring acceleration of exercise. Here we have studied effects of a lingonberry product, acceleration exercise and their combination on body composition.

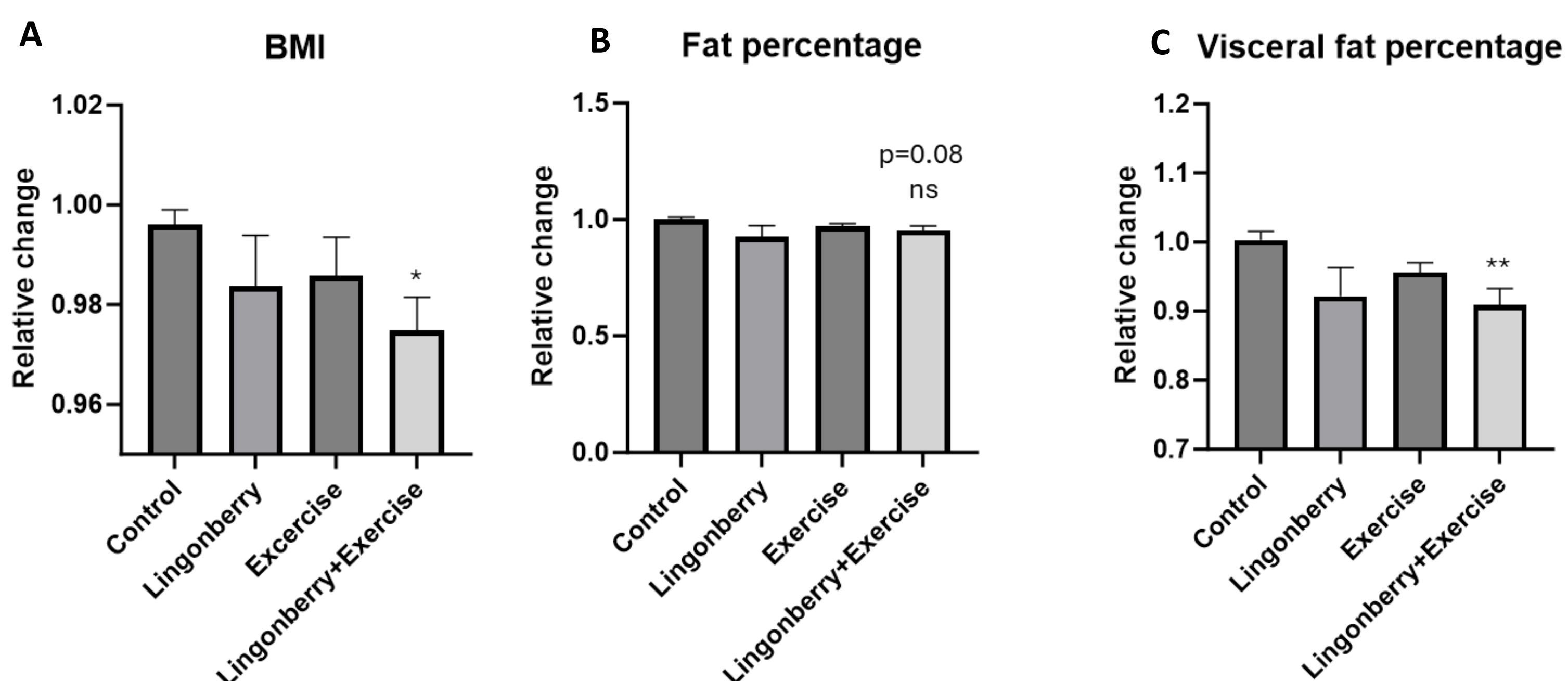
**Materials & Methods:** Body composition was studied with InBody equipment (InBody Co Ltd) before study start and at 12 weeks for four groups of healthy volunteers that were included in the study:

1. Control group without lingonberry product and acceleration exercise;
2. Group consuming daily 3 portions of Flow drink (Arctic Nutrition Ltd), a natural lingonberry product equaling daily intake of 33.6 grams of lingonberries;
3. Group performing daily acceleration exercise with 1000 steps at 1.8 – 2.3 G acceleration;
4. Group consuming lingonberry product and performing acceleration exercise as in groups 2 and 3.

Monitoring acceleration of exercise was performed with a method for recording movement accelerations installed in a mobile phone.



**Figure 1:** Flow chart of the method for recording movement accelerations for monitoring acceleration of exercise. The method measures movement accelerations of at least 1,8 G and informs the user when the required daily quantity of 1000 movement accelerations have been recorded. The method also receives information from the user when lingonberry has been consumed and informs the user that the required daily amount of lingonberry has been consumed.



**Figure 2:** Relative changes in body composition in each study group during the 12 weeks study period.  
 A) Body Mass Index (BMI)  
 B) Fat percentage  
 C) Visceral fat percentage  
 \*p<0.05, \*\*p<0.01  
 ns = not significant

**Results & Conclusions:** Combination of lingonberry product consumption and acceleration exercise decreased Body Mass Index and visceral fat percentage, while no effects were observed by lingonberry product consumption or acceleration exercise alone. These results suggest that acceleration exercise may improve the ability of the body to absorb and utilize polyphenols and other health-promoting substances in lingonberries, improving risk factors of lifestyle diseases and achieving health benefits.

## References

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