

Board #80 3:00 PM - 4:00 PM

## Gender Differences in Physical Activity among Swedish Adults

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The Prevalence Study (IPS) is a collaboration between 19 countries. The overall purpose is to collect nationally representative, internationally comparable data on health enhancing physical activity (HEPA). The data collected are from those in society that may benefit the most from interventions designed to increase HEPA.

The aim of this study was to identify possible gender differences in the relative importance of factors associated with HEPA among men and women.

The study included 1472 Swedish adults, 52.9% women, mean age 45 years. The core instrument was the short version of the International Physical Activity Questionnaire (IPAQ). The data were treated according to the IPAQ scoring manual (IPAQ). A stepwise multinomial regression was performed for both men and women using the IPAQ categories as dependent variables i.e. insufficiently active, sufficiently active, and sufficiently active, controlling for age, BMI, sociodemographic factors, and self-rated health.

Self-rated health was an important factor for being in the sufficiently active category for both genders. Men with an academic degree were less likely to be in the insufficiently active category compared to men with a basic education (OR: 0.51, 95% CI: 0.28-0.95) and men that lived in a village were more than twice as likely as men living in the sufficiently active category (OR: 2.68, 95% CI: 1.51-4.74). Single women were more likely than obese women to be in the sufficiently active category (OR: 6.40, 95% CI: 1.46-28.10), and single women were twice as likely as women living with a partner to be in the sufficiently active category (OR: 1.24-3.25).

Having an academic degree was negatively associated with PA among men, but even if they do more intentional exercise this is counteracted by their demanding jobs. Women living with a partner was less likely to be in the insufficiently active category compared to single women, implying persistent gender differences. These new findings highlight the importance of assessing the total amount of physical activity and that interventions can be designed and implemented.

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## Changes in Levels of Physical Activity According to Socioeconomic Level, After Five Years of an Intervention Program

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A five-year analysis of Agita São Paulo Program has shown a positive impact on physical activity (PA) and sedentarism, which was even stronger for women. To evaluate the impact of the program on PA level according to socioeconomic level (SES), during a five-year period.

Physical activity level (Insufficiently Active: Sedentary + Irregularly Active, and Sufficiently Active: Active + Very Active) was determined using the International Physical Activity Questionnaire (IPAQ), version 8, short, last week form, obtained from a telephone-based interview. It was carried out in three cities of São Paulo (Brazil). Total sample comprised 1295 subjects, over 18 yrs-old; n:645 men and 326 women; and n:650 in 2004 (318 men and 333 women); and n:645 in 2009 (318 men and 333 women). Sample was randomized according to sex, age, and socioeconomic level. According to SES they were classified as: Upper (U), Upper-Middle (UM), Middle (M), and Lower Class (L). Data were analyzed through Chi-square test and Odds Ratio (OR), and level of significance adopted was p<.05.

**RESULTS:** Insufficiently active people rates declined in the total group from 53.9% to 37.1%, corresponding to a 16.8% decrease in the period. In the other hand, sufficiently active people rates improved from 46.1% to 62.9% in the total group, corresponding to a 16.8% increase in the period.

These data evidenced that the diffusion of the Agita São Paulo message was effective to decline sedentarism and improve PA in all SES, with a trend to have a greater impact on Upper, Upper-Middle and Middle-middle classes than in Lower Class.

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## Familial Aggregation of Physical Activity Levels: A Study with Families From Northeast of Portugal

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Physical activity (PA) lifestyle is known to have significant health benefits. Familial resemblance reflecting genetic and environmental factors shared by family members could be an important determinant of habitual PA levels. However, in the literature the results in familial resemblance are controversial.

**PURPOSE:** to analyze familial resemblance in habitual PA, sport participation, and sedentary behavior.

**METHODS:** sample comprised 1136 individuals from 284 families (284 parents and 284 sibling pairs). The offspring were 6 to 19 years old (14±2.30). All the families live in the northeast region of Portugal. PA was evaluated with two questionnaires: IPAQ short version and Baecke et al. (1982). Intra-familial correlations adjusted for age and heritability were calculated respectively with FCOR and ASSOC routines from S.A.G.E. 5 software package.

**RESULTS:** In the habitual PA and sport participation indicators the correlations between spouses are higher (0.26 to 0.52) than between parents and offspring (0.08 to 0.24), and between siblings (0.13 to 0.51). In inactivity indicator the correlations are identical between all family relationships (0.31 to 0.40). The heritability values are all significantly different from zero (P<0.05) and vary between 0.14 and 0.42 in PA and sport participations indicators. In physical inactivity heritability is 0.49.

**CONCLUSION:** These results suggest that families tend to resemble in habitual PA, sport participation and in sedentary behavior. The pattern of correlations found indicates that the environment factors have more influence than genetic factors in PA and sport participations. It seems that sedentary behavior is more genetic dependent than habitual PA and sport participation.

2146 Board #83 3:00 PM - 4:00 PM

## Familial Resemblance in Physical Activity: The Flemish Longitudinal Offspring Study (FLOS)

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Scientific evidence demonstrates that regular physical activity reduces the risk of morbidity and mortality from a number of chronic diseases. In order to implement appropriate strategies for the promotion of physical activity, it is important to understand the factors explaining the wide variation of physical activity levels in the population. In addition to social and physical environment, demographic and psychological factors, familial factors, both genetic and environmental, may also play a role.

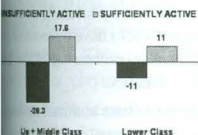
**PURPOSE:** To investigate familial resemblance in physical activity and to determine if this could be best explained by genetic and/or environmental factors.

**METHODS:** 292 Flemish families (271 fathers, mean age 45 yrs; 243 mothers, mean age 42 yrs; 238 sons, mean age 15 yrs; 195 daughters, mean age 14 yrs) participated in the Flemish Longitudinal Offspring Study (FLOS) conducted within the framework of the Policy Research Centre Sport, Physical Activity and Health. Physical activity was assessed using the Flemish Physical Activity Computerized Questionnaire (FPACQ). Pearson correlations were used to investigate resemblance between family members. To further explore these familial correlations underlying variance components models were tested using model fitting techniques.

**RESULTS:** Several significant and moderate correlations were found between parents (0.16-0.30), parent-offspring (0.14-0.36) and siblings (0.16-0.52). Generally, significant similarities between parents (0.16-0.30) and between siblings (0.24-0.52) were higher than between parent-offspring (0.15-0.36). For almost all variables, a model including common environmental (Vc) and unique environmental (Ve) factors explained most of the observed variability in physical activity. Only for time per week spent on vigorous sports and on moderate activities, an additional genetic factor (Vg) further improved the model fit. Maximal transmissibility (Ve + Vg) ranged from 7% for frequency per week of moderate activities to 23% for time spent watching TV. This could be completely explained by Vc, except for time per week spent on vigorous sports and on moderate activities where also a Vg of respectively 4% and 11% was estimated.

**CONCLUSIONS:** The results of this study suggest familial resemblance in several dimensions of physical activity. For most physical activity variables the maximal transmissibility could be completely explained by common environmental factors. This is an important finding in the light of the development of effective strategies for the prevention of inactivity.

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