



# Exercise participation and negative affectivity in twins, siblings and other family members: a study from the Netherlands Twin Registry



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## Aim

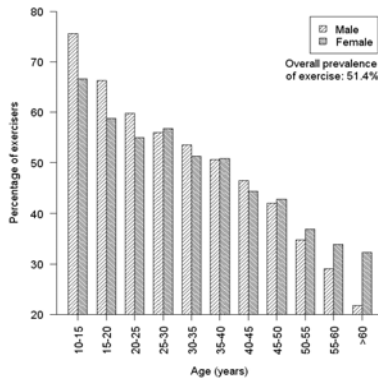
To examine the association between exercise behavior and negative affectivity in a large population-based sample as a function of gender and age.

## Sample

- 19,462 twins, siblings, parents and spouses.
- Measurements in 1991, 1993, 1995, 1997, 2000 and 2002.
- 43,888 observations, using information of all subjects on all waves.

## Results

### Prevalence of exercise by age and gender



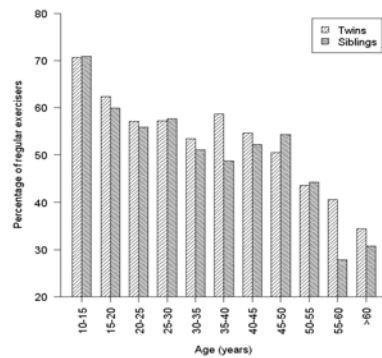
## Statistical analyses

Linear mixed modeling with S-Plus.

## Measures

- Exercise: no/yes (criterion: a minimum of 60 minutes of at least 4 METs weekly)
- Anxiety: Spielberger Trait Anxiety Inventory
- Depression: Beck's Depression Inventory
- Anxious depression: Young Adult Self Report
- Neuroticism: Eysenck Personality Questionnaire

### Do twins and siblings differ in prevalence of exercise?



### Association of exercise with negative affectivity

Exercise	No	Yes	F (df=1)	ES
	M (SD)	M (SD)		
Depression	2.3 (3.1)	1.5 (2.4)	32.5*	0.29
Anxiety	34.2 (9.1)	32.6 (8.2)	71.0*	0.19
Anxious dep	6.0 (5.2)	5.1 (4.6)	23.7*	0.18
Neuroticism	50.5 (25.2)	47.2 (23.7)	46.4*	0.14

\*p<0.0001, ES=effect size in SD units

## Conclusions

- Prevalence of exercise declines with age, but no gender differences.
- Twins and siblings do not differ in prevalence of exercise, except for ages 35-40 and 55-60 years when twins are more active.
- Regular exercisers are on average less anxious, depressed and neurotic than non-exercisers. Differences are modest, but very consistent across gender and age.

### Negative affectivity by age, exercise and gender

