

# Sleep disturbances predict long-term mortality in men – a prospective Swedish study

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## Conclusion

Self-rated sleep disturbances predicted all-cause mortality among men. Concurrent report of depression and chronic illness did not change this prediction. The findings sup-

port the importance of preventive and health promotion activities directed to improve sleep quality. The need for such efforts could be estimated by a single question.

## Background

Health effects of sleep deprivation have been demonstrated earlier. Epidemiological studies have also shown that all-cause mortality has a relation to sleep duration. The importance of subjective ratings of unspecified sleep disturbances on survival has been less investigated.

## Aim

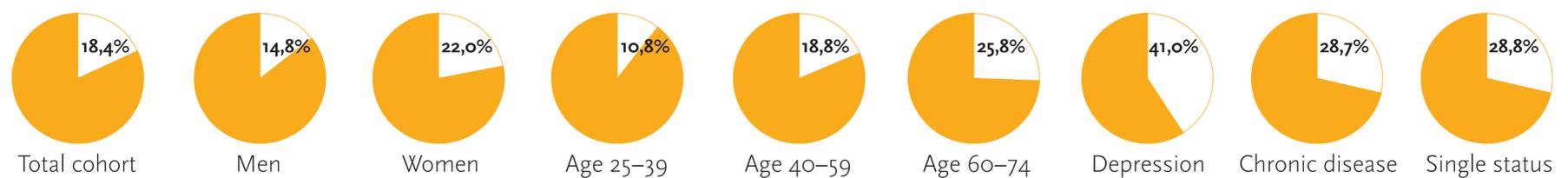
To investigate the relationship between report of sleep disturbances and mortality, taking possible confounders into account.



## Methods

A random sample of an adult (age 25–74) Swedish population (n = 1806) responded to a comprehensive questionnaire (response rate 90%) on sleep, health, chronic illness, lifestyle, work and socio-economic factors in 1988. A single question captured sleep disturbances during the last three months. Mortality data for the initial cohort were collected from the national register of causes of death between 1988 and 2002. Cox proportional hazard analyses showing hazard ratio (HR) and 95% confidence interval (CI) were used to predict mortality in relation to sleep disturbances and possible confounders.

## Results



Prevalence of reported sleep disturbances during the last three months in different groups are shown in the figures.

Individuals reporting sleep disturbances showed an increased mortality compared to those not reporting. Adjustment for depression and chronic illness did not eliminate the excess risk. The increased mortality was confined to men as compared to women (Table).

Mortality risk (hazard ratio, HR) for all causes of death in individuals with report of sleep disturbance compared with a group without sleep disturbances. Crude and adjusted HR by Cox regression.

Hazard ratio (95% CI)	Adjustment factors
1.53 (1.13 – 2.06)	crude
1.62, (1.13–2.31)	age and sex
1.51, (1.02–2.30) females 0.97, (0.58–1.61) males 1.96, (1.31–2.93)	age, sex, depression, chronic disease and single status