

## Executive Summary

The Swedish Council on Health Technology Assessment (SBU) conducted a systematic literature review of research on the association between occupational exposures and sleep disturbances. In this review, we use sleep disturbances as an umbrella term to include the core symptoms of insomnia, including difficulty initiating or maintaining sleep, waking up too early, non-restorative sleep and overall dissatisfaction with sleep.

A wide range of occupational exposures were investigated, including: physical work load, vibration, organizational and psychosocial factors, chemical and biological factors, noise, environmental factors and contagious substances.

### Background

Since 2011 SBU has had a mandate from the Swedish government to systematically assess the evidence associating occupational exposures to health issues. The objective of this review was to assess the scientific basis describing the influence of occupational exposures on sleep disturbances.

Sleep disturbances are common. Epidemiological surveys reveal that about one-third of the general adult population report difficulties sleeping and about 6-10 percent fulfil the diagnostic criteria for insomnia. For affected individuals, sleep disturbances can lead to concentration difficulties, decreased function and decreased well-being. Sleep disturbances can affect the daily life, especially when the disturbances are frequent or prolonged.

### Method

A systematic review was undertaken following the PRISMA statement and standard methods used by SBU adapted to an occupational context. A literature search covering years 1990 to December 2012 was conducted in international medical and occupational data bases. The review assessed almost 8 000 abstracts. Studies that fulfilled strict inclusion criteria were assessed for relevance and quality, using pre-set protocols. Relevance and quality assessments were conducted by two experts, working in an evaluation pair. After conducting independent assessments, the two experts had to agree on a mutual relevance and quality classification. Some articles required that all exporters participated in discussion and made a collective assessment. A total of 24 studies were classified as moderate or high quality. The strength of the scientific evidence was assessed with the GRADE system.

### Results

There is an association between occupational exposure and sleep disturbances. This result is based on investigations of a large variety of work environments, mainly in Europe and North America. In most studies passing the quality criteria, researchers investigated occupational exposure and such symptoms in populations consisting of both women and men with at least one year of follow up.

## Conclusions

- ▶ Those who experience job strain, i.e. a work situation with low decision latitude (personal control of their own working situation) in combination with too high demands, develop more sleep disturbances over time than people who are not subjected to such exposure at work. Those who experience high work related demands, or bullying at work, also have more sleep disturbances.
- ▶ Those who have shift work develop more sleep disturbances over time than people who work standard office hours.
- ▶ In some work environments, people have less symptoms. Those who experience social support at work, high influence over work-related decision and work place justice develop less sleep disturbances over time than people without these work conditions.

This systematic literature review has uncovered a substantial body of knowledge concerning occupational exposures and sleep disturbances. Future research should include intervention studies, i.e. studies that scientifically test the effect of well-defined interventions on such symptoms over extended periods of time in authentic work situations.

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