# Women not more exposed than men to work-related physical risks

*Contrary to the general assumption that women are physically weaker than men, recent analyses show that exposure to work-related occupational risk factors is neither systematically higher for women nor does it cause them to develop musculoskeletal disorders to a greater extent than men do. It seems that the gender difference in the occurrence of MSD is caused by exposure to other factors than are solely work related.*

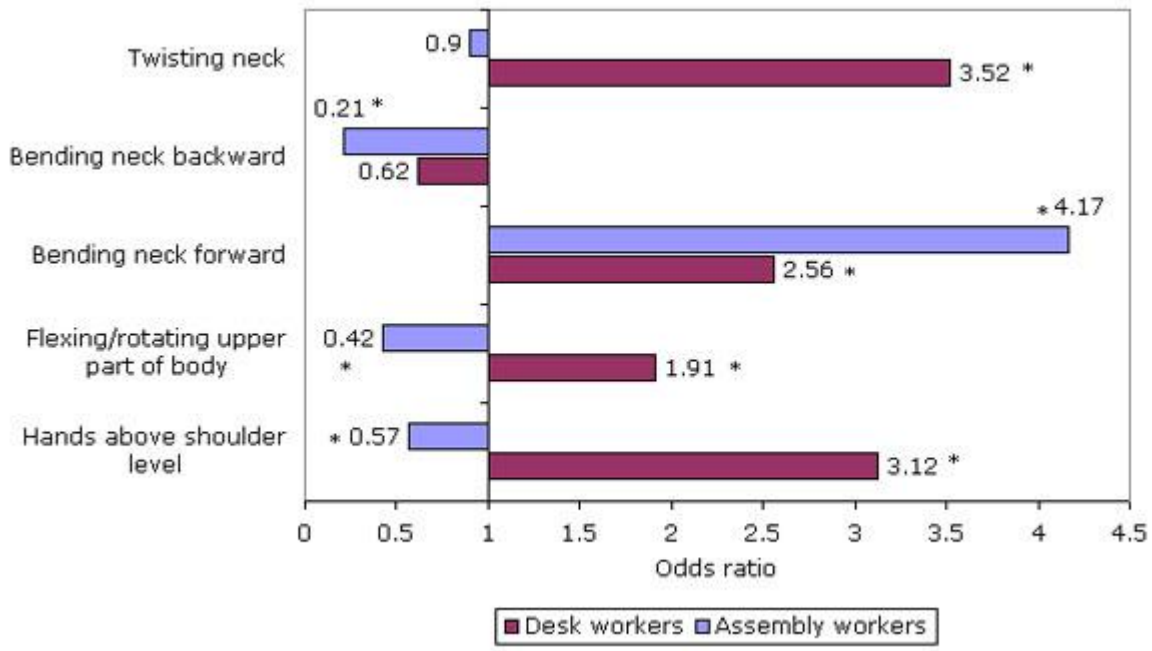
In previous research, women generally have been found to report more musculoskeletal disorders (MSD) than men do. Various explanations for this disparity can be given. However, since MSD are assumed to be at least partly caused by work-related factors, explanations are most often sought in terms of differences in exposure to work-related risk factors, or differences in vulnerability to this exposure, due to either biological, psychological or social differences.

An extensive PhD project (summary, 79Kb PDF) studied explanations for this gender difference, using data from the Study of Musculoskeletal disorders, Absenteeism, Stress and Health (SMASH). Almost 1,800 employees from 34 companies in the Netherlands participated in the SMASH study. Over a three-year period, workers were, among other things, questioned annually about their working conditions and their musculoskeletal health. Risk exposure was measured with the Dutch musculoskeletal questionnaire (567Kb PDF), while MSD were assessed with an adapted Nordic questionnaire.

## No consistent gender differences in exposure within jobs

Due to the gender segregation of the labour market, men and women often work in different jobs, and therefore experience different risk exposure. However, this gender segregation may even be present within jobs. Therefore, the research compared self-reported exposure to work-related risk factors for men and women with the same job, based on job title. Men and women varied in terms of exposure for most risk factors, but neither men nor women were consistently more often exposed (Figure 1).

**Figure 1: Self-reported exposure to work-related risk factors, among men and women with same job**



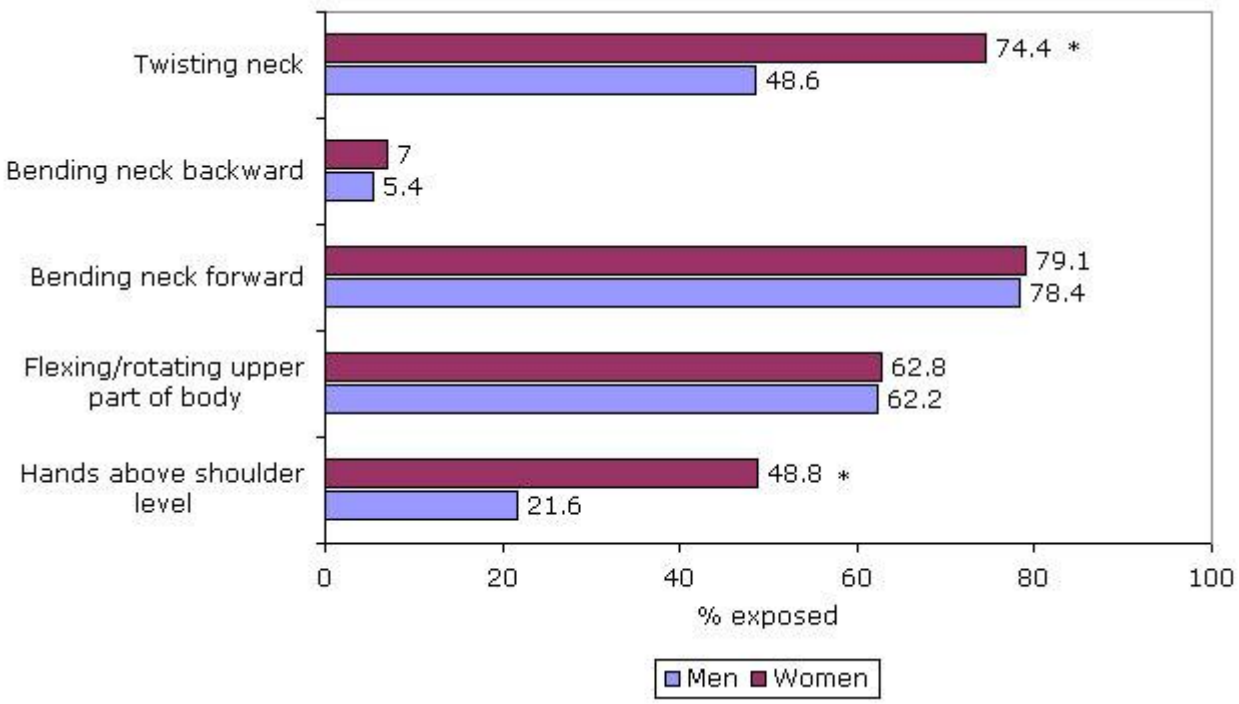

Note: Odds ratio > 1 means women report higher exposure. * means significant difference between men and women, at probability (p) = 0.05.

Source: Hooftman, W., Gender difference in work-related risk factors for musculosketetal symptoms and absenteeism, Vrije University Amsterdam, 2006

# Few gender differences in exposure within tasks

When the risk exposure of men and women with the same work tasks was compared, women generally reported higher exposure; however, the differences tended to be small and not statistically significant (Figure 2). Significant variations were found only for twisting one's neck and working with one's hands above shoulder level.

**Figure 2: Self-reported exposure to work-related risk factors, among men and women with same tasks**



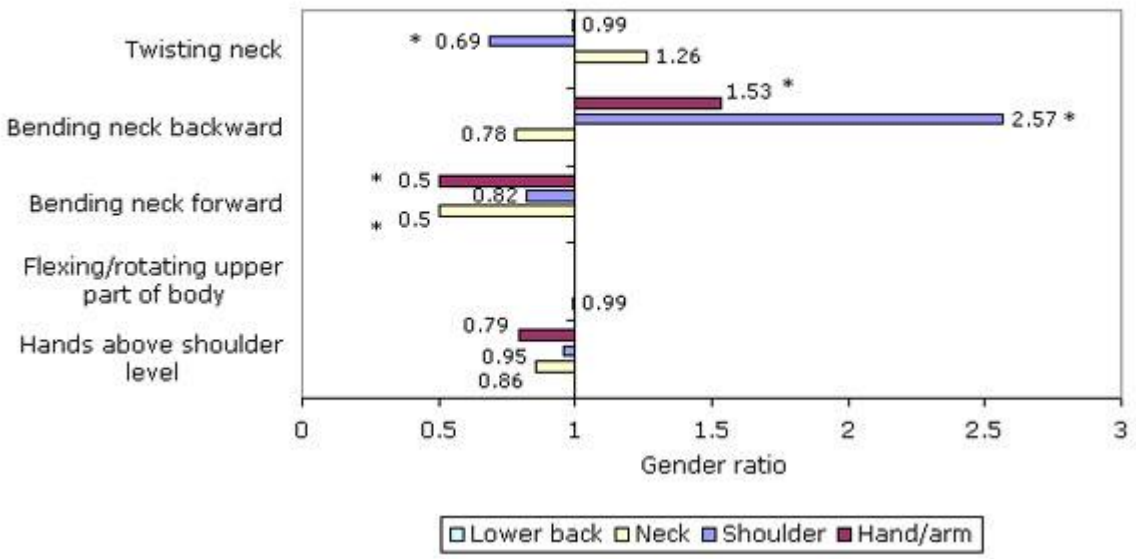

Note: * means significant difference between men and women, at p=0.05.

Source: Hooftman, 2006* means relevant difference (GR<0,75/>1,33)

# No consistent gender differences in risk exposure

Analyses were performed in order to investigate gender differences in the effect of exposure to a risk factor. The results (Figure 3) clearly indicate that women are not necessarily more vulnerable to exposure than men are. In fact, in many cases, the effect of exposure was found to be greater for men. Furthermore, it is notable that, for both twisting one's neck and bending one's neck backwards, the gender difference for neck complaints is the opposite of that for shoulder and hand/arm complaints.

**Figure 3: Effect of self-reported exposure on MSD**




Note: Gender ratio > 1 means the effect is greater for women. * means relevant difference: gender ratio < 0.75 /> 1.33.

Source: Hooftman, 2006

# Commentary

The results indicate that men and women with the same jobs and with the same tasks have different exposures to work-related risk factors for MSD; however, it is also shown that this does not necessarily imply that women have a higher risk exposure. Moreover, the effect of exposure to work-related risk factors on the development of MSD in particular was often found to be greater for men than for women. Therefore, it seems unlikely that the gender difference in MSD is solely caused by exposure to work-related physical risk factors but that other factors should be considered.

Since women generally bear a large part of the household responsibilities, it could be hypothesised that exposure to risk factors at home is greater for women and might therefore cause part of the difference. Moreover, the combined effect of work-related exposure and risk exposure at home might be greater than the sum of the individual exposures. Indeed, women might experience more stress than men from their attempts to combine work and family life, which might also have an effect on the development of MSD.

Finally, based on hormonal differences between the sexes, women – irrespective of their risk exposure – might experience more musculoskeletal pain and, because of social differences, might be more prone to express this. In order to prevent or resolve gender differences in MSD, the focus has to go beyond the reduction of exposure to work-related physical risk factors or the enhancement of the physical work capacity of women.

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