Musculoskeletal health of computer mouse users in the Swedish workforce and gender differences

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The musculoskeletal health of computer mouse users in the Swedish workforce with regard to gender and psychosocial factors were explored. In all the eleven economic activities the prevalence ratios (female/male) exceeded one for neck symptoms. Gender differences were persistent even when psychosocial and other job characteristics were included in a logistic regression. Risk and health factors were different for men and women.

Computerisation in the office environment developed rapidly in the eighties. Visual display units VDU became a hot issue. Risks for the pregnant worker were studied in different countries. Non-positive studies and improved VDU quality successfully decreased the concern of VDU related risks. The risk factors that still remain are ergonomic (Punnett and Bergqvist 1997). The increased use of cellular and DECT phones have once again put electromagnetic fields in focus. New technology may cause new health effects some may be referred to as environmental syndromes. IT has also been associated with burn out. Current statistics of the working population show that VDU workers have less prevalence of neck shoulder disorders compared to non-VDU. However, within the group VDU worker there is an exposure response relationship.

Symptoms located to both the shoulder and the wrist is related to intensive computer mouse use (Hagberg 1995). Pain and tenderness located to neck and shoulder are frequent among computer mouse users. Low-level static contraction with "overload" of the type 1 muscle fibres may one explanation (Hagberg 1996). There is no pathognomic mouse syndrome but computer mouse users may get exposure related symptoms at different locations and mouse use may trigger both non-specific neck-shoulder pain as well as tendonitis in the wrist and fingers.

2. Objectives
To explore the musculoskeletal health of computer mouse users in the Swedish workforce with regard to gender and psychosocial factors.

3. Methods
A subset of 1666 subjects was chosen from a large survey performed by Statistics Sweden (SCB) in 1995. The subset contained subjects who worked with personal computers or an equivalent devise for at least half their working time who also use a computer mouse. A variety of economic activities were investigated to determine gender differences in the occurrence of musculoskeletal symptoms (neck, shoulder/arm and hand).

4. Results
In all the nine economic activities the prevalence ratios (female/male) exceeded one for neck symptoms (Figure 1).
Figure 1. Prevalence ratio for neck symptoms female/male with 95% confidence intervals. Gender differences were persistent even when psychosocial and other job characteristics were included in a logistic regression. For men and women the variables “involved in planning your work” and “support from superiors” were preventive factors for neck and upper limb symptoms (Figure 2). The variable “learn and develop in occupation” was more preventive among women compared to men. Age seemed to be more important for men than for women.

Figure 2. Odds ratios for the explanatory variables from the logistic regression. White = men, gray =