Prevalence of musculoskeletal disorders among US employees of a large company

Q Le, Kreckmann, Starks, J-Morel. E. l. du Pont de Nemours and Company, Newark, United States of America

Objectives Longlasting sitting position has often been associated with the discomfort and/or pain in neck-shoulder region. The objective of this study was to examine the trapezius muscle parameters among sitting and standing workers and to investigate which is more overreaching to trapezius muscle.

Methods A total of 42 female workers in two different companies were recruited in this study. There were 21 workers (sitting workers) who were sitting at the computer most of the working day and 21 (standing workers) who were standing at their workstation and assembling the products. Trapezius muscle mechanical characteristics were measured by myotonometry, which calculates objective parameters on state of muscle mechanical properties (frequency which characterising tone, decrement which characterising elasticity and stiffness). The upper trapezius muscle was measured at resting position in seated, both on the left and right side. Also the visual analogue scale (VAS) was used to assess the intensity of pain in neck and shoulder region. The differences between two groups were assessed with independent group t-test.

Results The mean neck and shoulder pain VAS score among standing workers was 1.79 (SD 2.36) and 1.36 (SD 2.35) and among sitting workers 2.40 (SD 2.75) and 2.17 (SD 2.52) respectively. The measured outcomes showed that frequency in the right side was 15.5% and in the left side 14.9% higher among sitting workers. Stiffness was also higher among sitting workers respectively 22.6% and 25.5%. Trapezius muscle frequency and stiffness were also statistically higher in sitting workers (t-test p ≤ 0.001) and in both body sites. There were no differences in decrement.

Conclusions The result showed that sitting work induces higher tone and stiffness in upper trapezius muscle than standing work. Considering that the ergonomic workplace reorganisation should be done.

Prevalence of hormonally active conventional agricultural pesticides used in South Africa

A149 A31

M A Dalvie, R English. 1University of Cape Town, Cape Town, South Africa; 2Health Systems Trust, Cape Town, South Africa

Objectives The objective of this literature review was to examine and present evidence on male reproductive health effects of hormonally active conventional agricultural pesticides used in South Africa in order evaluate the need for research in this area especially in the Western Cape, a major agricultural area in the country.

Methods The literature review included electronic and paper sources of information using PubMed/MEDLINE, EBSCO, Google Scholar and The Cochrane Library as well as theses through the University of Cape Town Medical Library. Key words for the searches included pesticides, male reproduction, endocrine disruption, farm workers, farm residents and rural residents. Data from both animal studies and epidemiological studies including all study designs and countries were considered. The review identified a number (n = 11) of contemporary-use agricultural pesticides that have been shown to induce in vitro endocrine activity and/or have been shown to affect gonadotrophin and steroid hormone release as well as male reproductive development in animals or humans. These pesticides include chlorpyrifos, cypermethrin, endosulfan, deltamethrin, dichlorvos, DNOC, fenvelerate, glyphosate, iprodione, parathion and procloraz. Rural residents in the Western Cape especially those living on farms including children are highly exposed occupationally and non-occupationally to pesticides through a number of routes. There are, however, few epidemiological studies that have investigated male reproductive health effects in humans consequent to environmental exposure to conventional agricultural pesticides and only two in South Africa.

There are no longitudinal studies.

Conclusions More epidemiological studies, especially longitudinal investigations of specific pesticides in highly exposed workers and residents essentially boys in settings such as the Western Cape in South Africa are required.

Male hormonal profile to workers exposed to toluene in a packaging plant industrial in Mexico City

G M F Miranda, P Paz-Roman, A M Aguilar-Madrid, C A I P Juarez-Perez, B A Basuto-Acevedo, H G Hano-Garcia, PEMEX, Venustiano Carranza, DF, Mexico; UNAM, Mexico, DF, Mexico; MSS, Mexico, DF, Mexico

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