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Carpal tunnel syndrome and exposure to work-related biomechanical stressors and chemicals: Findings from the Constances cohort

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ABSTRACT

OBJECTIVE - To investigate the effects of co-exposure to biomechanical wrist stressors and chemicals on the risk of CTS in a large cohort of French workers. **METHODS** - Prospective study using the data collected at baseline and at the first 12 month-follow-up for the 18,018 participants included in the population-based Constances cohort between 2012 and 2015. CTS at follow-up and exposure to biomechanical wrist stressors and chemicals at baseline were assessed using a self-administered questionnaire. Associations between CTS and co-exposure to biomechanical wrist stressors and chemicals were studied using multivariate logistic regression models, adjusted for personal/medical factors. **RESULTS** - 184 men (2.1%, 95%CI 1.8–2.4) and 331 women (3.6%, 3.2–3.9) free from chronic hand symptoms at baseline declared suffering from unilateral/bilateral CTS at follow-up. A potentiating effect of co-exposure to biomechanical wrist stressors and chemicals on the risk of CTS was found for both genders, with higher OR in the co-exposure group (OR = 3.38 [2.29–5.01] in men and OR = 4.12 [2.73–6.21] in women) than in the biomechanical exposure group (OR = 2.14 [1.51–3.03] in men and OR = 2.19 [1.72–2.78] in women) compared to no exposure group. **CONCLUSIONS** - The study showed an association between CTS and co-exposure to biomechanical wrist stressors and chemicals, after adjustment for the main personal and medical factors. This finding should be confirmed using more objective case definition of CTS and assessment of the chemical exposure before drawing conclusions on the possible synergistic effects of mechanical stressors and chemical on the median nerve.

KEYWORDS: -

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