

Analysis in Mexico on Workers Performing Highly Repetitive Movements with Sensory Thermography in the Surface of the Wrist and Elbows

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Abstract : Currently companies have increased the number of disorders of cumulative trauma (CTDs), these are increasing significantly due to the Highly Repetitive Movements (HRM) performed in workstations, which causes economic losses to businesses, due to temporary and permanent disabilities of workers. This analysis focuses on the prevention of disorders caused by: repeatability, duration and effort; And focuses on reducing cumulative trauma disorders such as occupational diseases using sensory thermography as a noninvasive method, the above is to evaluate the injuries could have workers to perform repetitive motions. Objectives: The aim is to define rest periods or job rotation before they generate a CTD, this sensory thermography by analyzing changes in temperature patterns on wrists and elbows when the worker is performing HRM over a period of time 2 hours and 30 minutes. Information on non-work variables such as wrist and elbow injuries, weight, gender, age, among others, and work variables such as temperature workspace, repetitiveness and duration also met. Methodology: The analysis to 4 industrial designers, 2 men and 2 women to be specific was conducted in a business in normal health for a period of 12 days, using the following time ranges: the first day for every 90 minutes continuous work were asked to rest 5 minutes, the second day for every 90 minutes of continuous work were asked to rest 10 minutes, the same to work 60 and 30 minutes straight. Each worker was tested with 6 different ranges at least twice. This analysis was performed in a controlled room temperature between 20 and 25 ° C, and a time to stabilize the temperature of the wrists and elbows than 20 minutes at the beginning and end of the analysis. Results: The range time of 90 minutes working continuous and a rest of 5 minutes of activity is where the maximum temperature (Tmax) was registered in the wrists and elbows in the office, we found the Tmax was 35.79 ° C with a difference of 2.79 ° C between the initial and final temperature of the left elbow presented at the individual 4 during the 86 minutes, in of range in 90 minutes continuously working and rested for 5 minutes of your activity. Conclusions: It is possible with this alternative technology is sensory thermography predict ranges of rotation or rest for the prevention of CTD to perform HRM work activities, obtaining with this reduce occupational disease, quotas by health agencies and increasing the quality of life of workers, taking this technology a cost-benefit acceptable in the future.

Keywords : sensory thermography, temperature, cumulative trauma disorder (CTD), highly repetitive movement (HRM)

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