Acquired dyschromatopsia in Mexican workers of a chemical industry exposed to a mixture of organic solvents

Introduction
Acquired dyschromatopsia is an early and sensitive marker of ophthalmic neurotoxicity due to chronic exposure to various chemicals. The overall objective of this research was to identify changes in colour vision acquired in workers occupationally exposed (POE) to a mixture of organic solvents (OS) and one without exposure to the chemical industry. Several studies have been performed in animal models. An overview was conducted of the exposure and results between groups were not statistically significant (p=0.73).

Discussion
The results are consistent with those of other investigators; ICC ratio is higher in the exposed group, as well as the prevalence of acquired dyschromatopsia, being the most common for both groups.

Method
A cross-sectional study was conducted in two groups of workers; one occupational exposure to a mixture of OS and one without exposure to the chemical industry. The participants answered a questionnaire to explore risk factors acquired dischromatopsia. Subsequently, the test was made (82.5% of whom had a profile consistent with congenital dyschromatopsia and were excluded from the final analysis. The group of 73 workers was exposed, while the unexposed group was 65. The average age was 43.9 years (±10) and 42.7 years (±12), respectively. The prevalence of acquired dyschromatopsia in both eyes was higher for the exposed group; 8% in right eye and 9% in left eye, however, no statistically significant differences from the unexposed group. Quantification of CCI was slightly higher in the exposure group (1.09) compared to the group without exposure (1.08), although the differences between groups were not statistically significant (p=0.73).

Discussion
The aim of the study was to evaluate the effect of the test on the simulator on the bioelectric activity of the brain of professionally active drivers. The testing processing industries that work with such metals and whose workers are in continuous shifts, it is likely that workers in these industries may suffer from the effects of metal exposure and those leading to changes in biological rhythms caused by shift work. Financial Support: Faperj (E-10/225.935/2016).

Results
The total population was 142 workers, 5.4% of whom had a profile consistent with congenital dyschromatopsia and were excluded from the final analysis. The group of 73 workers was exposed, while the unexposed group was 65. The average age was 43.9 years (±10) and 42.7 years (±12), respectively. The prevalence of acquired dyschromatopsia in both eyes was higher for the exposed group; 8% in right eye and 9% in left eye, however, no statistically significant differences from the unexposed group. Quantification of CCI was slightly higher in the exposure group (1.09) compared to the group without exposure (1.08), although the differences between groups were not statistically significant (p=0.73).

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Results
Twenty-nine studies have been found from the referred theme. Several studies have been performed in animal models. Only three papers reported the effects of metals on sleep-wake cycle. The first one was carried out with a population living in the surroundings of a metal recycling plant, where authors have detected that the exposed population had 2.3 chances to report sleep complaints. The other two studies observed children and pre-teens with high levels of lead in the blood have been associated to delay in the onset of sleep, longer duration of nocturnal awakenings, shorter duration of sleep, insomnia (OR=2.01) and longer daytime sleepiness (OR=2.90).

Discussion
There are effects which link the environmental exposure to lead and cadmium with sleep complaints. Considering there are several production sectors, such as mining, and manufacturing processing industries that work with such metals and whose workers are in continuous shifts, it is likely that workers in these industries may suffer from the effects of metal exposure and those leading to changes in biological rhythms caused by shift work. Financial Support: Faperj (E-10/225.935/2016).

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