Short and Long Term Effects of Protective Gloves on Hand Performance for Light Assembly Tasks

Gloves are used in many industrial tasks in order to protect the worker’s hands from different hazards. Although using gloves can improve safety aspects of performing tasks, there is a compromise between increasing safety and possible effects on hand performance capabilities. The purpose of the present study was to investigate the effects of gloves made from different materials on hand performance capabilities when performing a light assembly task during a two hour work period. The study had a $4 \times 5$ repeated measures design. The independent measures were: 1) glove material with four levels (cotton, nylon and nitrile gloves as well as bare hand condition) and 2) time interval with five levels ($0.9, 0.6, 0.3, 0$ and $0.21$ minutes). The hand performance capabilities measured in the study were dexterity, tactility and peak lateral pinch strength. Time to complete a pegboard test was recorded as the measure of dexterity and tactility was measured using the monofilament test. A B&L pinch gauge was used for measurement of maximum pinch force. Eight male subjects participated in the experiment, being asked to fit components together using screws and screwdriver. Analysis of the results showed that gloves significantly increased the time taken to complete the pegboard test and maximum pinch force but reduced the sensitivity of touch of the index and thumb fingertips. There was also a significant effect of time interval on the dexterity and fingertip sensitivity for index finger and thumb, which suggests that the effect of gloves on hand performance will change over time.
این صفحه به محتوای تاییدیه نمایه سازی مقاله در پایگاه استنادی سیویلیکا می‌باشد. در هر لحظه به منظور تایید اصل این گواهی می‌توانید وضعیت ثبت مقاله را از طریق لینک فوق به صورت آنلاین کنترل نمایید.