Comparison of two types of computer mice by surface electromyography

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The mouse is a tool very commonly used in computer dealing, however it may result in an overload of the forearm muscles and chronic painful conditions when used for prolonged periods. This study aimed at testing if a new mouse, designed under biomechanical principles of the hand and wrist, might be associated with a reduced overload in comparison with an ordinary mouse. Twenty healthy computer users participated in a crossover study in which muscular activity of the trapezius, extensoris radialis carpus and polix flexoris muscles were was recorded surface electromyography during simple activities like playing Solitaire or moving over worksheets. Questionnaires about the appearance of symptoms in the upper limbs were completed after the use of each mouse. By integrating the electrical sign during the periods of acquisition, the muscular effort could be quantified and statistically compared. Only the extensoris radialis carpus showed statistically significant reduction of muscle activity with the new mouse, and only during Solitaire playing. The positioning of the wrist with the new mouse allowed the maintenance of the extension of this joint with less muscle effort. Its routine use may serve as a strategy to prevent the appearance of pain in computer users as well as symptomatic control on those who have already developed some sort of local injury.

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