

Abstract

Title:

The evaluation of the muscle fatigue appearance of the selected hand muscles while sms texting on the cell phone.

Objectives:

Establishing the overview of the contemporary theoretical knowledge regarding the „Repetitive Strain Injury“ while focusing on the „Text Message Injury“. Evaluate the muscle fatigue appearance of the selected hand muscles while sms texting on the cell phone.

Methods:

The study was performed on a five healthy subjects. The muscle activity of the m. opponens pollicis, m. flexor carpi ulnaris and m. extensor carpi radialis was detected by the surface electromyography while performing three maximum isometrical contractions before and after finishing a task. The task of each subject was to type 10 defined sms messages, 160 characters each, on a defined cell phone in specified frequency. The median of the frequency of the EMG signal compared before and after the finishing of the defined task was set as the parameter for evaluating the muscle fatigue appearance. The percentual increase or decrease of the median of the frequency was established as well as the change of the area under the curve of the total power spectrum of the EMG signal.

Results:

There was no muscle fatigue appearance detected in observed muscles while sms texting on the cell phone. But the results of the pilot study showed the rise of the median of the frequency of the EMG signal in m. opponens pollicis after the finishing the task in 4 out of 5 subjects. There was no compensation increase of the muscle activity in m. flexor carpi ulnaris and m. extensor carpi radialis as a consequence of the decrease of the muscle activity or the muscle fatigue appearance in m. opponens pollicis. No hypothesis was proved.

Keywords: „Repetitive Strain Injury“ (RSI), „Text Message Injury“ (TMI), cell phone, SMS, surface electromyography, m. opponens pollicis, muscle fatigue