

# Impact of adding a simultaneous cognitive task in the elbow's range of movement during arm curl test in women with fibromyalgia

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**Background:** Fibromyalgia symptoms cause a significant reduction in the ability to perform daily life activities. These activities require the ability to perform more than one task simultaneously. The main objective of this study was to evaluate how dual-task could modify range of movement, duration of repetitions and performance in the arm curl test in healthy controls and patients with fibromyalgia. **Methods:** Twenty women participated in this study, divided into two groups: 1) patients with fibromyalgia (N = 10, age = 52.00 [5.08]) and 2) age- and gender-matched healthy controls (N = 10; age = 51.60 [4.09]). The participants had to perform the arm curl test in two conditions: single test condition and performing a dual-task. The dual-task condition consisted of remembering three random unrelated words. **Results:** Patients with fibromyalgia completed fewer repetitions than controls during dual-task condition (p-value = 0.015). Furthermore, both groups showed a significant decrease in the range of movement in the dual-task condition when comparing the mean of the three first repetitions with the three last ones (p-value < 0.05). **Interpretation:** The motor task might be prioritized over the cognitive task at the beginning of the test. However, at the end of the test, the cognitive task could require more attention due to the increased time since the words were heard, and also the motor task could require less attention after some repetitions have been performed. Thus, the addition of a cognitive task could lead to a less conscious execution of the motor task at the end of the test, which may be consistent with a reduced range of movement. © 2019 Elsevier

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Dual-task

Fibromyalgia

Range of movement

Biomechanics

Cognitive task

Daily life activities

Dual-task conditions

Dual-tasks

Fibromyalgia

Healthy controls

Range of movement

Test condition

Biophysics

adult

aged

arm

Article

attention

biomechanics

body mass

clinical article

cognition

controlled study

cross-sectional study

dual-task performance (test)

elbow

female

fibromyalgia

human

physical performance

priority journal

range of motion

case control study

cognition

elbow

fibromyalgia

joint characteristics and functions

middle aged

movement (physiology)

pathophysiology

physiology

Adult

Aged

Case-Control Studies

Cognition

Cross-Sectional Studies

Elbow Joint

Female

Fibromyalgia

Humans

Middle Aged

Movement

Range of Motion, Articular