

Effects of a session of physical exercise on the neurophysiological activity during the resolution of a test of selective attention [Efectos de una sesión de ejercicio físico sobre la actividad neurofisiológica durante la resolución de una prueba de atención selectiva]

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Introduction: diverse studies describe motor and cognitive manifestations with the cerebral activity registered in the electroencephalogram, even in last years the brain is studied as a dynamic complex system, using mathematics of the chaos and fractal analyses. Material and method: The aim of the present investigation was to know the effects of 30 minutes of physical aerobic exercise on the neurophysiological cerebral activity during the resolution of tests of selective attention. The sample was constituted by 14 voluntary males who were dealing the career of pedagogy in physical education, of which seven were assigned aleatoriamente to the experimental group and seven to the group control. The record of the cerebral activity (electroencephalography) realized to slant a device brain-interface Emotiv EPOC® while the students were solving the test of Toulouse-Piéron's selective attention. The record was realized before and after an aerobic work of 30 minutes of trot with an intensity between 60 and 75 % of the cardiac maximum frequency. Results: Is observed an increase of Hurst's index in the temporal right cortex after the physical exercise and similar values in the prefrontal and occipital cortex in the measurements pre and post intervention. All the subjects present bigger correlations than 0,600 between the prefrontal, temporary and occipital cortex during the accomplishment of the test of attention, with a slight decrease in the number of correlations post-intervention. Conclusion: Differences exist in Hurst's indexes of the temporary right bark pre

and post-intervention, which might explain differentiates them in the punctuations of the test of attention after the physical exercise. The bark prefrontal and temporary they do not shows differences. There were not bosses of correlations who could explain the improvement of the attention. © Federación Española de Asociaciones de Docentes de Educación Física (FEADEF)

Aerobic exercise

Attention

Dinamic system

Electroencephalography

No lineal mathematics