"Exercise and Brain"

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Prof.mult. Dr. med. Dr. h. c. W. Hollmann
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Titel: Critical Flicker Fusion Frequency as a measure of central nervous activation

Autor:	Wiemeyer	Josef	Prof. Dr. rer.medic.
	Name	Vorname	Akad.Titel

Anschrift: Institut für Sportwissenschaft, Magdalenenstr. 27, 64289 Darmstadt

Abstract: ☑Kurzvortrag (10', 5' Diskussion)

Critical flicker fusion frequency (CFF) is a one-dimensional measure of high-frequency resolution of the visual system. CFF is the frequency at which an intermittent light stimulus is no longer separated by the visual system. CFF depends on a variety of factors, e.g. retinal illuminance, retinal projection, stimulus area and stimulus wavelength. Besides physical features of the flicker stimulus and background several factors of the person influence CFF. One of these factors is unspecific activation of the central nervous system. If and only if all factors of stimulus, background, procedure and person are held constant CFF is a valid measure of unspecific activation of the central nervous system. So the first and most important prerequisite of CFF measurements is to achieve this. In the last about 15 years we have been working on developing and improving a certain method of measuring CFF (spatio-temporal forced choice method with 5 alternatives). As a result of our research we established a highly reliable way of determining CFF, with reliability usually above .9 and with no influence of learning. We also found some important factors influencing CFF, like light-dark ratio.
In several experiments examining the influence of exercise on CFF we found replicable CFF dynamics which depend on kind and intensity of exercise.

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