

Medical/biological Study (experimental study)**Effects of modulated very high frequency fields on specific brain rhythms in cats.**

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Aim of study (according to author)

To study the effect of exposures to low intensity, very high frequency (VHF) electrical fields, amplitude modulated at biological frequencies on untrained and conditioned cats.

Background/further details:

A series of cats was operantly trained to produce specific transient brain rhythms following periodic presentations of a light flash stimulus (experiment 1). The specificity of the frequency of the modulation was tested on another group of untrained cats (experiment 2, preliminary testing session).

Endpoint

- effects on the neurological system: EEG

Exposure

Field characteristics	Parameters
147 MHz amplitude modulation exposure duration: 50 min, 6 days	power flux density: 1 mW/cm ² (40 per cent loss in room)

Exposed system:

animal (species/strain): cat
whole body exposure

Methods

Endpoint/Measurement parameters/Methodology

- effects on the neurological system: EEG
- cognitive/behavioural endpoints
- others: EOG

investigation on living organism

investigated organ systems: sensory organs, brain/CNS

time of investigation: during exposure

Main outcome of study (according to author)

The results indicate that low level VHF fields, amplitude modulated at specific frequencies, produce marked effects on conditioned specific brain rhythms (e.g. enhanced regularity of the patterns, sharpening of the spectral peaks around the central frequency of the response). These effects cannot be attributed to the conditioning procedure, since the results started to diverge from the two controls only after imposition of the fields. The innumerable tests conducted within every session and the sharp contrast in the EEG between correct versus incorrect responses strongly suggest a genuine biological transduction in the CNS, which could be described as an enhancement of frequency-related biological rhythms.

The data obtained in the second experiment indicate that it is indeed possible to selectively enhance various brain rhythms by reinforcing their spontaneous occurrence with short irradiations by the

fields, amplitude-modulated at appropriate frequencies. The hypothesis is offered that the fields were acting as effective contingent reinforcers in both experiments.

(Study character: medical/biological study, experimental study, full/main study, pilot/exploratory/preliminary study)

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