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Arbogast B., Arbogast H., Halberg F., Hallek M., Hellbrügge T.: Institute of Social Pediatrics, Munich, Federal Republic of Germany; Chronobiology Laboratories, University of Minnesota, Minneapolis, Minnesota, USA.

The chronobiology of the EEG and methods for analysis in health and in convulsive disorder.

Macroscopically, various types of seizure incidence, notably with respect to the 24-h scale, have long been observed, distributions being distinguished as 'nocturnal', 'diurnal', 'awakening', and 'diffuse', to cite but a few examples. Procedures for establishing such patterns range from classical χ^2 tests to frequency analysis. The consistency of a seizure distribution pattern may thus be validated over decades under standardized conditions of living, with shifts of living routines. Such shifts established in patients were also seen in experimental animal models of convulsive periodicity. The study of electroencephalographic paroxysms was started in the early 50's. Quantification by linear rhythmometry includes procedures ranging from a least-squares spectrum complemented by chronobiologic serial section, and serial section on the serial section, to the use of such sections with a flexible period. The display of a changing phase at a fixed period can thus be complemented by a display of changes in period comparable to the results of complex demodulation, yet with the important addition of a test of significance of any deviation from a period assumed for analysis. A macroscopic reconstruction of the circadian frequency profile as a function of Berger range frequencies results in an integration and intuitive visualization of intermodulating frequencies that may lead to the diagnosis of disorders ranging from classical *grand mal* or *petit mal* to conditions such as the West syndrome.