

## IS THE EEG A RELEVANT TOOL OF SELECTION IN MILITARY AERONAUTICAL EXPERTISE?

*L'EEG EST-IL UN OUTIL DE SÉLECTION PERTINENT EN EXPERTISE AÉRONAUTIQUE MILITAIRE?*

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**Introduction:** The absence of clinical orientation coupled with the predictive value of the EEG represent the main arguments used against it in aeromedical expertise. This exam disappeared from professional civil standards but French military regulations dedicated it a determining place. The authors suggest supporting its relevance by recent data.

**Method:** The authors report three retrospective surveys realized in the French military AeMC. Two descriptive and monocentric prevalence studies allowed to analyze EEG considered incompatible with fitness within applicants for aircrew and military air-traffic controllers. A third multicentric and impact survey was interested in the predictive value of recorded anomalies.

**Results:** Global prevalence of abnormal records varies according to the studies from 3.7 to 8% and the graphical paroxysmal proportion from 1.3 to 1.9%. Drafts diffuse or focal slow activities are the most represented. The occurrence of a generalized seizure was documented among 44 subjects followed during an average period of 4.8 years.

**Discussion:** Global prevalence of abnormal records varies according to these studies whereas the proportions of paroxystic activities seem comparable to previous publications. The results of the impact study seem in favour of a comitality risk which must be confirmed. These elements suggest a selection strategy based on many arguments. The lack of reliable surveys does not allow the prediction of future epilepsy but highlighted paroxystic activities are at risk of transient cognitive impairment. It raises questions about flight safety whereas a military operational context is convenient to an epileptic threshold reduction.

**Conclusion:** In context of expertise, the EEG demonstrates functional traits related to a cortical hyperexcitability which is not synonym of epilepsy, but at risk of subtle or major clinical expression, favored in military environment by operational factors.