

ABSTRACT

Electrophysiological Assessment Of Brain Function In Severely Malnourished Children

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Brain function in severely malnourished children was assessed using computer analysis of electro-encephalographic (EEG) responses to photic driving at different frequencies during slow-wave sleep. % power in the classical EEG broad-band domains was derived from temporo-occipital records. Ten malnourished infants (5-23 months) age and sex-matched with 10 healthy controls (CON), having no neurological involvement or previous malnutrition, were studied. The malnourished group was tested on admission (ADM) and on discharge (DIS) from hospital.

A stronger mean peak response to photic driving for the narrow-band spectra was observed for the malnourished group, but this difference did not attain a level of statistical significance.

Significant differences between the malnourished and control groups were however found in the alpha1 band for the undriven EEG, and in the alpha/beta1 power ratio during driving at 8 Hz. The ADM and DIS groups did not differ significantly, but there was a significant trend towards reduction from ADM to DIS to CON. This observation may indicate a reduced efficacy of inhibitory

processes in the malnourished brain, a condition observed in the brains of malnourished animals.

These findings indicate that in malnutrition: (1) EEG measures can index the deviation of physical brain function from normality, and (2) physical properties relating to brain function remain abnormal after anthropometric catch-up, despite a tendency towards normalization.