

was observed between the parieto-occipital and occipito-inion leads. The latency and amplitude of the evoked potential did not decrease during rapid eye movement when compared to non-rapid eye movement sleep as in older children and adults. The latency of P₁ decreases with increasing gestational age. There is no inverse relationship between the latency of P₁ and the age after birth, skull circumference or body weight. The latency of P₁ provides an additional parameter by which the maturation of the brain and the gestational age of the premature infant can be assessed. (SPR)

100 *Laboratory Applications of Fetal EEG in the Guinea Pig.* MORTIMER G. ROSEN*, Univ. Rochester Sch. Med. and Dent. Rochester, N.Y. (introduced by Robert J. Haggerty).

Adult brain wave patterns quickly reflect even small changes in homeostasis. That the fetal brain reacts in similar manner is poorly documented. This report demonstrates several applications of fetal electroencephalography in laboratory investigations. Three analogues

of problems relating to the human fetus will be presented in studies of the guinea pig. 1. Drugs administered to the mother can be detected by alterations in the fetal electroencephalogram and correlated with associated maternal brain wave patterns. By monitoring both maternal and fetal brains simultaneously one can show the rapidity of drug transfer across the placenta. The drugs for which patterns have been demonstrated are meperidine, ether and thiopental—3 very common medications utilized in labor; 2. the slowing of brain wave frequencies and flattening of voltage provides a method for studying the response of the fetus to asphyxia and correlating this response with similar maternal brain wave alterations. This is useful in studying those prenatal situations in which fetal brain damage may occur. 3. The fetal electroencephalogram in utero was compared with the EEG of that same animal following cesarean section. Change in brain wave patterns was found to be a function of fetal maturity and not altered by a change from the in utero to the air breathing environment. (SPR)

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