

34 - Abnormalities in EEG

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© SPMM Course Abnormalities in EEG EEG in various disorders Absence seizures (petit-mal) Regular 3 Hz Complexes Alzheimer's dementia Rarely normal in advanced dementia; may be helpful in differentiating pseudodementia from dementia Angelman's syndrome

1. EEG changes are notable by the age of 2.
2. Prolonged runs of high amplitude 2-3 Hz frontal activity with superimposed interictal epileptiform discharges – all ages
3. Occipital high amplitude rhythmic 4-6 Hz activity facilitated by eye closure, is seen under the age of 12 years.
4. There is no difference in EEG findings in AS patients with or without seizures
Antisocial personality disorder Increased incidence of EEG abnormalities in those with aggressive behaviour ADHD Up to 60% have EEG abnormalities (spike/spike-waves) Borderline personality disorder Positive spikes: 14- and 6 per second seen in 25% of patients CJD Generalised periodic 1-2 Hz sharp waves are seen in nearly 90% patients with sporadic CJD. Less often in familial / hormonal transplant-related forms. NOT seen in a variant form. Closed head injuries Focal slowing (sharply focal head trauma) Focal delta slowing (subdural hematomas) Diffuse atherosclerosis Slowed alpha frequency and increased generalized theta slowing Herpes simplex encephalitis Episodic discharges are recurring every 1-3 seconds with variable focal waves over the temporal areas. Huntington's dementia Initial loss of alpha; later flattened trace Infantile spasms (seen in tuberous sclerosis) Hypsarrhythmia [diffuse giant waves (high voltage, >400 microvolts) with a chaotic background of irregular, asynchronous multifocal spikes and sharp waves]. Clinical seizures are associated with a marked suppression of the background - called the electrodecremental response Infectious disorders Diffuse, often synchronous, high voltage slowing (acute phase of encephalitis) Metabolic and endocrine disorders Diffuse generalized slowing. Triphasic waves: 1.5 to 3.0 per second highvoltage slow-waves especially in hepatic encephalopathy. Neurosyphilis The non-specific increase in slow waves occurring diffusely over the scalp. Panic disorder Paroxysmal EEG changes consistent with partial seizure activity in one-third; focal slowing in about 25% of patients Seizures Generalized, hemispheric, or focal spike/ spike-wave discharge. Stroke Focal or regional delta activity Structural lesions Focal slowing / focal spike activity

