EEG - electroencephalography

- Data from each electrode undergoes a FOURIER ANALYSIS
- Breakdown of complex wave into sinusoidal waveforms
- Based on the frequency (cycles/s – Hz)
EEG - electroencephalography

Advantages:
• Non-invasive
• Excellent temporal resolution
• Records in real-time
• General measure of brain activity
• Easy & Cheap

Disadvantages:
• Poor spatial resolution
• Signal may be attenuated or smeared
• Signal is variable
• General measure of activity - nonspecific

ERP – event-related potentials

• Basically an EEG but with repeated trials of the same stimulus
• Eliminate the baseline activity to pull out a better image of the elicited brain activity
ERP – wave characteristics

- Example of an **N100** and **P200** from an auditory stimulus during 2 odor stimuli

ERP – interpretations

- P300 - elicited due to presentation of a different auditory stimuli
- P300 suggested to reflect a cognitive ability – “decision-making”
ERP – interpretations

- Comparing ERP of healthy controls to Alzheimer's patients

- Could P300 be a marker for the early onset of Alzheimer's disease?

ERP – event-related potentials

**Advantages:**
- ++ Signal-noise ratio
- Non-invasive
- Excellent **temporal** resolution
- Records in real-time
- General measure of brain activity
- Easy & Cheap
- Used as an index of sensory function

**Disadvantages:**
- Poor **spatial** resolution
- Signal may be attenuated or smeared
- **Signal is variable**
- General measure of activity – nonspecific
- **Significance of the activity unknown**