

Quantitative EEG Changes Associated With Loss And Return Of Consciousness In Healthy Adult Volunteers Anaesthetized With Propofol Or Sevoflurane.

Gugino LD, Chabot RJ, Prichep LS, John ER, Formanek V, Aglio LS. *Br J Anaesth.* 2001 Sep;87(3):421-8.

Significant changes in topographic quantitative EEG (QEEG) features were documented during induction and emergence from anaesthesia induced by the systematic administration of sevoflurane and propofol in combination with remifentanyl. The goal was to identify those changes that were sensitive to alterations in the state of consciousness but independent of anaesthetic protocol.

Healthy paid volunteers were anaesthetized and reawakened using propofol/remifentanyl and sevoflurane/remifentanyl, administered in graded steps while the level of arousal was measured.

Alterations in the level of arousal were accompanied by significant QEEG changes, many of which were consistent across anaesthetic protocols. Light sedation was accompanied by decreased posterior alpha and increased frontal/central beta power. Frontal power predominance increased with deeper sedation, involving alpha and, to a lesser extent, delta and theta power. With loss of consciousness, delta and theta power increased further in anterior regions and also spread to posterior regions. These changes reversed with return to consciousness.