The use of neurophysiological monitoring during surgical procedures requires specific anesthesia techniques to avoid interference and signal alteration due to anesthesia.

Inhaled anesthetics decrease the waveform amplitude and increase latency, intravenous anesthetics have the same effect but to a lesser degree. Best anesthetic regimen for surgery involving intraoperative monitoring is controversial. Both inhaled and intravenous agents depress signal attainment, however for equal MAC concentrations inhaled agents cause more depression(11). While studies have shown that halogenated agents and nitrous oxide do in fact depress MEP signals more than total intravenous anesthesia, less is known on the relationship between IONM and patient characteristics. Lo's study documenting MEP attainment with 0.5 MAC was done in an otherwise healthy scoliosis population (12), and no study to date has analyzed signal attainment in correlation with patient characteristics and anesthetic technique. While it is clear that anesthetic technique is extremely important, certain patient characteristics appear to be more common in difficult to monitor patients. The identification of these characteristics would suggest to the anesthesiologist the need for a more stringent technique (TIVA) and avert surgical delay or cancellation due to inability to obtain baseline or worse- loss of intraoperative waveform and need for a Stagnara wake-up test. Our group at Mt. Sinai has retrospectively studied patient characteristics, anesthetic technique and attainment of neuromonitoring signals. Hypertension and diabetes are independent predictors of monitoring failure, and these are preferentially sensitive to inhalational agents. Age and weight are also predictors, but less significant. In summary, neurophysiologic monitoring has evolved to be a consistent part of many procedures. The anesthesiologist should strive to understand the rationale behind monitoring and the basis of its utility. IONM has many implications for anesthetic technique and need for control of the physiologic milieu. With this knowledge the anesthesiologist can work together with the neuromonitoring team and surgeon to ensure patient safety during and after surgery [1)].

1)
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