

# **ROUTINE INTRAOPERATIVE FACIAL NERVE MONITORING DURING OTOLOGIC SURGERY**

Silverstein H, Smouha E, Jones R.  
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**Abstract:** We have used intraoperative monitoring and stimulation of facial nerve function routinely in 301 consecutive otologic and neurotologic cases. The device has been safe, simple to use and practical. Facial contraction is detected by a strain gauge sensor in the corner of the mouth and is signaled audibly to the surgeon. Electrical stimulation of the facial nerve can be delivered through a sterile probe, which produces a constant current square wave impulse. The device has several advantages; it signals unintentional mechanical stimulation of the facial nerve during surgery; it allows mapping of the nerve through soft tissue, tumor and bone; it predicts dehiscences in the bony covering of the nerve; and it allows confirmation of the electrical integrity of the nerve before and after surgery. In this paper we present a technical description of the device, relevant intraoperative electrical measurements, and illustrative case examples. Although the device does not replace anatomic knowledge and surgical ability, it provides a margin of security during ear surgery. This system for intraoperative facial monitoring is practical and the authors encourage its routine use.