Intraoperative Neuromonitoring (IONM)

What is Intraoperative Neuromonitoring (IONM)?
The role of IONM is to assess and observe the many functions of the brain, spinal cord and nerves before surgery. The surgeon will get instant feedback and warning before permanent nerve injury occurs. This increases patient safety and improves outcomes during and after surgery.

Why is this so important?
IONM has greatly increased the standard of patient care for spine, brain, vascular, and ENT surgery. This is a result of an advanced IONM system, improved monitoring procedures, and the surgeons' increased knowledge about the benefits of IONM. It offers major benefits to the patient, surgeon, and hospital. IONM provides instant feedback on how the neural systems being monitored are working. This helps with critical decision making and improves patient outcomes.

When is IONM used?
Your surgeon will decide if IONM is right for your surgery. IONM is used during the following:

Spinal Procedures
- Spinal cord cases - cervical, thoracic and lumbar
- Spinal instrument procedures - total disc replacement, discectomy/laminectomy, corpectomy and decompressions
- Spinal Embolizations - spinal aneurysms, spinal tumors, AVM's and dural AV fistulas

Neurosurgical Procedures
- Craniotomies placing cortical motor and sensory areas, cranial nerves or cortical blood flow at risk, microvascular decompressions and spinal cord tumors
- Cerebral Embolizations – cerebral aneurysm, AVM's and dural AV fistulas

Vascular Procedures
- Carotid endarterectomy and aortic aneurysm

Peripheral Nerve Procedures
- Acetabular (hip) fractures and hip arthroplasty revisions
- Brachial plexus repair
- Peripheral nerve repair
- Peripheral nerve tumors/lesions

Otolaryngologic (Head/Neck) Procedures
- Thyroidectomies and parotid tumor resections

What happens before my surgery?
Before you enter the operating room (OR), you will be in a "pre-operative" area. During that time, you will see the IONM tech. He/she will explain what and how they will monitor your surgery. In some cases, the tech may perform some pre-operative hook-up or baseline recordings before you enter the OR. Please feel free to ask any questions at that time.

What happens during my surgery?
In the OR, electrodes are placed on limbs that could be affected by the surgery. Once you are asleep, small needle electrodes may be placed in the scalp. This would be over the area of the brain where the impulse from

the limb is received. Other electrodes are placed in the muscle groups that link to the area where the surgeons will be working. Baseline recordings are taken before surgery begins and are repeated during the procedure. A major change in the wave alerts the surgeon and technical clinician that the nerve in the area could be at risk of damage. The surgeon can then take the proper action to prevent permanent damage. Surgeries progress with more confidence. Less time is spent looking for neural structures since alerts will be given to the surgeon.

Is there a risk of infection?
Risk is very low. The skin is disinfected before needles are placed (needles are sterile and disposed of after single use). You may have mild soreness after surgery where the needles were placed.

General Questions
1-800-323-8942 (ask for Neurodiagnostics)