

# Intraoperative Monitoring (IOM) Fellowship

Andrea Martin, Au.D.  
Michigan Audiology Coalition  
Fellowship Panel



**MICHIGAN MEDICINE**  
UNIVERSITY OF MICHIGAN





**MICHIGAN MEDICINE**  
UNIVERSITY OF MICHIGAN

DEPARTMENT OF  
OTOLARYNGOLOGY -  
HEAD AND NECK  
SURGERY



# What is IOM?



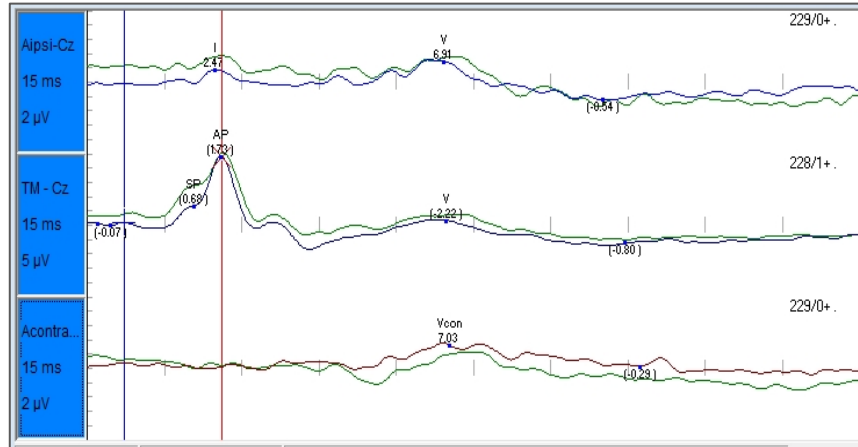


MICHIGAN MEDICINE  
UNIVERSITY OF MICHIGAN

DEPARTMENT OF  
OTOLARYNGOLOGY -  
HEAD AND NECK  
SURGERY



# What is IOM?



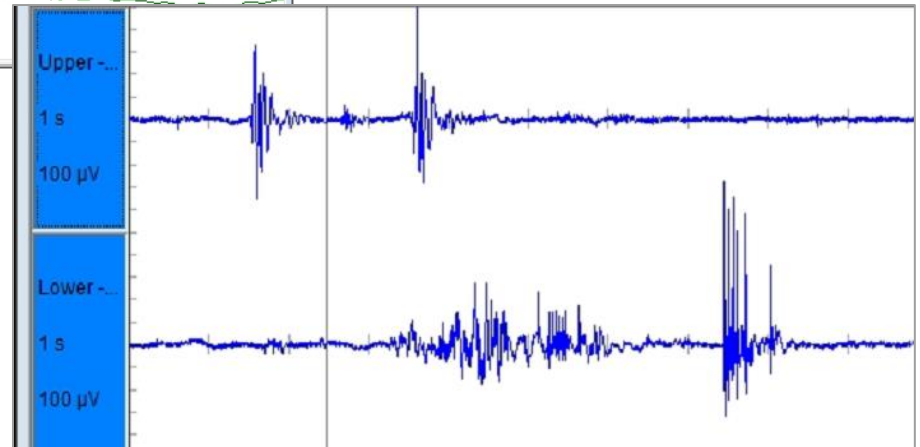
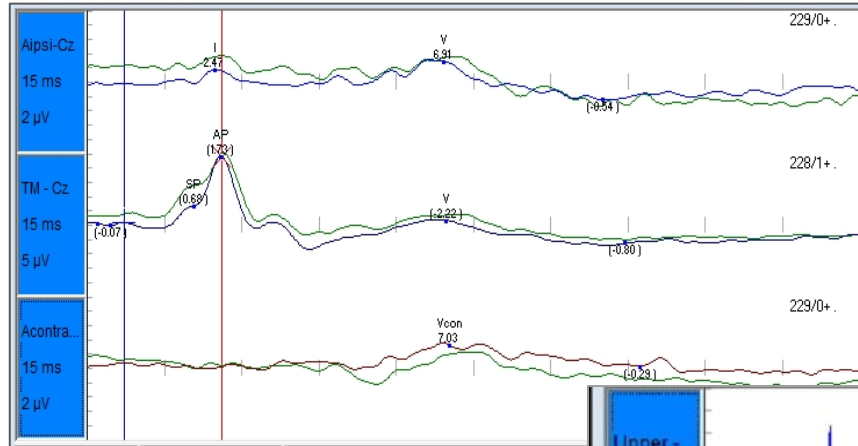


MICHIGAN MEDICINE  
UNIVERSITY OF MICHIGAN

DEPARTMENT OF  
OTOLARYNGOLOGY -  
HEAD AND NECK  
SURGERY



# What is IOM?



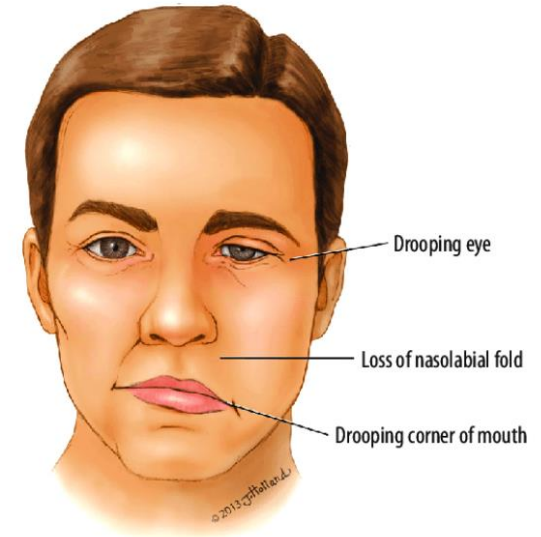


MICHIGAN MEDICINE  
UNIVERSITY OF MICHIGAN

DEPARTMENT OF  
OTOLARYNGOLOGY -  
HEAD AND NECK  
SURGERY



# Why IOM?





**MICHIGAN MEDICINE**  
UNIVERSITY OF MICHIGAN

DEPARTMENT OF  
OTOLARYNGOLOGY -  
HEAD AND NECK  
SURGERY



# IOM in practice





# Training happens in stages...



# The IOM Fellowship also happens in stages!



DEPARTMENT OF OTOLARYNGOLOGY - HEAD AND NECK SURGERY



# Interview & Observation



DEPARTMENT OF OTOLARYNGOLOGY - HEAD AND NECK SURGERY

# Expectations



## IOM Training Checklist

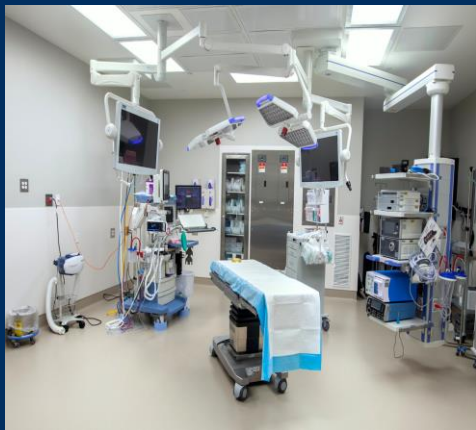
### Prior to Case:

- Perform a chart review and accurately determine monitoring needs. This includes reviewing audiology and surgical notes
  - Routinely researches the surgical procedure and/or reviews the anatomy of monitored nerves and proximity to the surgical field
  - Has reviewed relevant radiology and/or how radiology will impact case
  - Is prepared to discuss all relevant aspects of the case with the supervising audiologist
- Ensure IOM cart is properly stocked for needs of the case and ready to go
- Familiar with IOM modality terminology and fundamentals
  - This includes familiarity with the relevant nerves, target muscles, and evoked potential generators
  - Routinely reviews the IOM protocol for the case
  - Has a copy of the protocol in OR until the fellow has said protocol memorized
- Navigating Snapboard
- Communicating with OR Room staff about start time of cases that are not 'first start'
- Comes of the case prepared to take notes and record lessons learned

### Set up:

- Present in room on time
- Determine proper cart placement
- Confirm monitoring plan with surgical team (cranial nerves to monitor, AEP's, SSEP's, anesthesia requirements)
- Prepare electrodes, alcohol, tape, Tegaderm, mastisol, AEP needs, etc.
- Can describe (active recall) of anatomy relevant to set-up (muscles/nerves)
- Demonstrate understanding of the surgical field so that needle placement will not interfere
- Efficient, accurate, and secure placement of needle electrodes, including stimulator return electrode and/or extension cable
- Efficient, accurate, and secure setup of AEP's:
  - ABR (ipsi & contra)
  - EchoG (including placement of TM electrode)
- Plug needles into headbox and perform impedance check PRIOR to surgical prepping

# Clinical Application



## IOM Training Checklist

### Prior to Case:

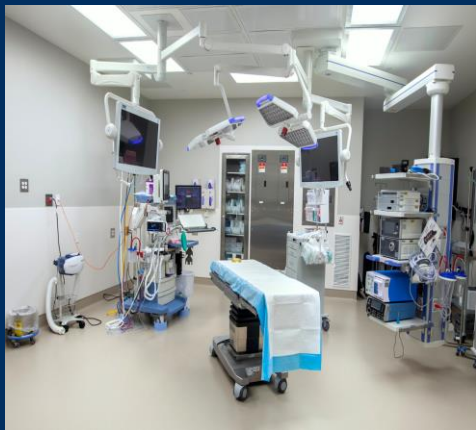
- Perform a chart review and accurately determine monitoring needs. This includes reviewing audiology and surgical notes
  - Routinely researches the surgical procedure and/or reviews the anatomy of monitored nerves and proximity to the surgical field
  - Has reviewed relevant radiology and/or how radiology will impact case
  - Is prepared to discuss all relevant aspects of the case with the supervising audiologist
- Ensure IOM cart is properly stocked for needs of the case and ready to go
- Familiar with IOM modality terminology and fundamentals
  - This includes familiarity with the relevant nerves, target muscles, and evoked potential generators
  - Routinely reviews the IOM protocol for the case
  - Has a copy of the protocol in OR until the fellow has said protocol memorized
- Navigating Snapboard
- Communicating with OR Room staff about start time of cases that are not 'first start'
- Comes of the case prepared to take notes and record lessons learned

### Set up:

- Present in room on time
- Determine proper cart placement
- Confirm monitoring plan with surgical team (cranial nerves to monitor, AEP's, SSEP's, anesthesia requirements)
- Prepare electrodes, alcohol, tape, tegaderm, mastisol, AEP needs, etc.
- Can describe (active recall) of anatomy relevant to set-up (muscles/nerves)
- Demonstrate understanding of the surgical field so that needle placement will not interfere
- Efficient, accurate, and secure placement of needle electrodes, including stimulator return electrode and/or extension cable
- Efficient, accurate, and secure setup of AEP's:
  - ABR (psi & contra)
  - EchoG (including placement of TM electrode)
- Plug needles into headbox and perform impedance check PRIOR to surgical prepping



# Anatomy & Surgical Approach



## IOM Training Checklist

### Prior to Case:

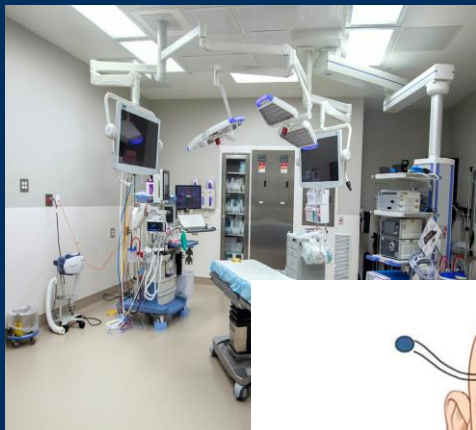
- Perform a chart review and accurately determine monitoring needs. This includes reviewing audiology and surgical notes
  - Routinely researches the surgical procedure and/or reviews the anatomy of monitored nerves and proximity to the surgical field
  - Has reviewed relevant radiology and/or how radiology will impact case
  - Is prepared to discuss all relevant aspects of the case with the supervising audiologist
- Ensure IOM cart is properly stocked for needs of the case and ready to go
- Familiar with IOM modality terminology and fundamentals
  - This includes familiarity with the relevant nerves, target muscles, and evoked potential generators
  - Routinely reviews the IOM protocol for the case
  - Has a copy of the protocol in OR until the fellow has said protocol memorized
- Navigating Snagboard
- Communicating with OR Room staff about start time of cases that are not "first start"
- Comes of the case prepared to take notes and record lessons learned

### Set up:

- Present in room on time
- Determine proper cart placement
- Confirm monitoring plan with surgical team (cranial nerves to monitor, AEP's, SSEP's, anesthesia requirements)
- Prepare electrodes, alcohol, tape, tegaderm, mastisol, AEP needs, etc.
- Can describe (active recall) of anatomy relevant to set-up (muscles/nerves)
- Demonstrate understanding of the surgical field so that needle placement will not interfere
- Efficient, accurate, and secure placement of needle electrodes, including stimulator return electrode and/or extension cable
- Efficient, accurate, and secure setup of AEP's:
  - ABR (psi & contra)
  - EchoG (including placement of TM electrode)
- Plug needles into headbox and perform impedance check PRIOR to surgical prepping



# Preparation & Set-up



## IOM Training Checklist

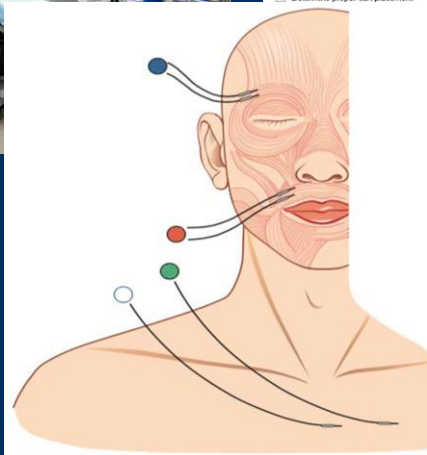
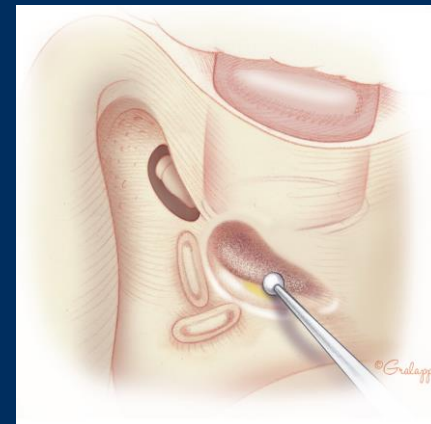
### Prior to Case:

- Perform a chart review and accurately determine monitoring needs. This includes reviewing audiology and surgical notes
  - Routinely researches the surgical procedure and/or reviews the anatomy of monitored nerves and proximity to the surgical field
  - Has reviewed relevant radiology and/or how radiology will impact case
  - Is prepared to discuss all relevant aspects of the case with the supervising audiologist
- Ensure IOM cart is properly stocked for needs of the case and ready to go
- Familiar with IOM modality terminology and fundamentals
  - This includes familiarity with the relevant nerves, target muscles, and evoked potential generators
  - Routinely reviews the IOM protocol for the case
  - Has a copy of the protocol in OR until the fellow has said protocol memorized
- Navigating Snapboard
- Communicating with OR Room staff about start time of cases that are not 'first start'
- Comes to the case prepared to take notes and record lessons learned

### Set up:

- Present in room on time
- Determine proper cart placement

earm (cranial nerves to monitor, AEP's, SSEP's, iderm, mastoid, AEP needs, etc. y relevant to set-up (muscles/nerves) gical field so that needle placement will not interfere of needle electrodes, including simulator return  
 (AEP's:  
 TM electrode)  
 n impedance check PRIOR to surgical prepping





# Supervision



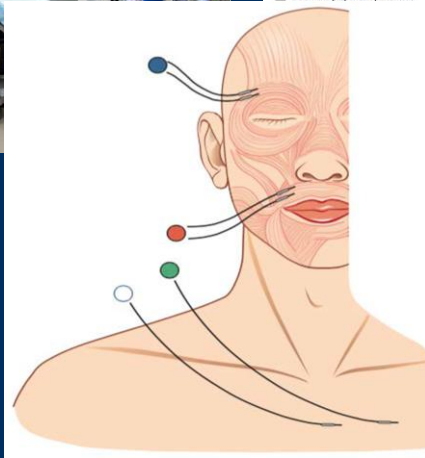
## IOM Training Checklist

### Prior to Case:

- Perform a chart review and accurately determine monitoring needs. This includes reviewing audiology and surgical notes
  - Routinely researches the surgical procedure and/or reviews the anatomy of monitored nerves and proximity to the surgical field
  - Has reviewed relevant radiology and/or how radiology will impact case
  - Is prepared to discuss all relevant aspects of the case with the supervising audiologist
- Ensure IOM cart is properly stocked for needs of the case and ready to go
- Familiar with IOM modality terminology and fundamentals
  - This includes familiarity with the relevant nerves, target muscles, and evoked potential generators
  - Routinely reviews the IOM protocol for the case
  - Has a copy of the protocol in OR until the fellow has said protocol memorized
- Navigating Snagboard
- Communicating with OR Room staff about start time of cases that are not 'first start'
- Comes to the case prepared to take notes and record lessons learned

### Set up:

- Present in room on time
- Determine proper cart placement





# Independence



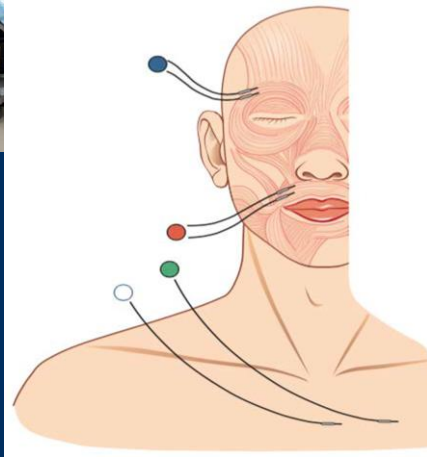
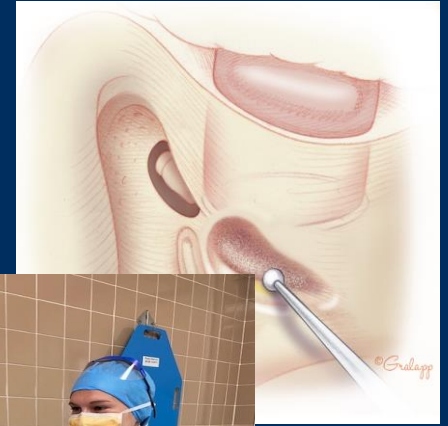
## IOM Training Checklist

### Prior to Case:

- Perform a chart review and accurately determine monitoring needs. This includes reviewing audiology and surgical notes
  - Routinely researches the surgical procedure and/or reviews the anatomy of monitored nerves and proximity to the surgical field
  - Has reviewed relevant radiology and/or how radiology will impact case
  - Is prepared to discuss all relevant aspects of the case with the supervising audiologist
- Ensure IOM cart is properly stocked for needs of the case and ready to go
- Familiar with IOM modality terminology and fundamentals
  - This includes familiarity with the relevant nerves, target muscles, and evoked potential generators
  - Routinely reviews the IOM protocol for the case
  - Has a copy of the protocol in OR until the fellow has said protocol memorized
- Navigating Snagboard
- Communicating with OR Room staff about start time of cases that are not 'first start'
- Comes to the case prepared to take notes and record lessons learned

### Set up:

- Present in room on time
- Determine proper cart placement



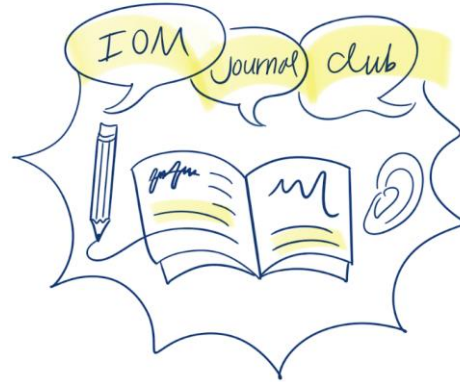


MICHIGAN MEDICINE  
UNIVERSITY OF MICHIGAN

DEPARTMENT OF  
OTOLARYNGOLOGY -  
HEAD AND NECK  
SURGERY



# Highlights





MICHIGAN MEDICINE  
UNIVERSITY OF MICHIGAN

DEPARTMENT OF  
OTOLARYNGOLOGY -  
HEAD AND NECK  
SURGERY



# Highlights



# Thank you!



# Resources

- Textbooks/Handbooks
- Audiology Online
- American Audiology Board of Intraoperative Monitoring

