**Submission Template**

**Medical Audiology**

# **Descriptive Title of Case. Replace this heading with your title.**

# **Authors**

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ACKNOWLEDGEMENT: Mary Jane, Au.D., Cool Medical Externship Site, City, State

# **User Agreement**

The user agreement is within the Submission Guidelines (www.AudCases.com) Type the initials of the authors below to electronically sign the user agreement, most importantly, that you have thoroughly checked that the case is completely de-identified:

# **Table of Content Items**

List the items for your table of content here. Do not indent. Use a separate line per item.

# **Educational Level**

Choose one educational level that most adequately describes your case and delete the others.

Introductory

Intermediate

Advanced

# **Learning / Assessment Objectives**

Replace the list below with your own objectives. Use the format provided.

1. Rank order the most likely pathologies affecting this patient
2. Determine if ENOG results are abnormal or normal
3. Correlate the VNG results with the imaging results

# **Case History**

Initials, a \_\_ year old (gender if appropriate), . . .

* What question do you want to insert here? Delete if no question is to be used.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used.

*Note: Cases are not expected to include all tests. Omit those that are not appropriate to your case and delete this comment.*

# **Otoscopy**

Include photograph if appropriate.

* What question do you want to insert here? Delete if no question is to be used.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used.

# **Audiometric Data**

Create a digital audiogram using this link. <http://www.audsim.com/audgenJS/> The submission guidelines document details when other formats can/should be used.

* What question do you want to insert here? Delete if no question is to be used.
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Use this table for speech testing results, inserting patient-specific results. If using alternative stimuli (e.g. QuickSIN) then use your preferred format.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **PTA (dB HL)** | **SRT (dB HL)** | **WRS** | **WRS Intensity (dB HL)** |
| **Right Ear** | 80 | 80 | 44 | 100 |
| **Left Ear** | 10 | 15 | 100 | 50 |
|  |  |  |  | |
| Spondee Technique | MLV | WRS Technique | Recorded | |
|  |  | List and Number | NU-6 Right: 1A Left: 2A | |
|  |  | Number of Items | Right: 50 Left: 10 MD | |

MLV = Monitored Live Voice NU-6 = Northwestern University List 6

CID W-22 = Central Institute of the Deaf, Word List 22.

PB-K = Phonetically Balanced – Kindergarten 10 MD = 10 Most Difficult

* What question do you want to insert here? Delete if no question is to be used.
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# **Immittance Results**

## **Tympanometry**

226 Hz / Y tympanograms should be included in this section

* What question do you want to insert here? Delete if no question is to be used.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used.

## **Advanced Middle Ear Analysis**

If multiple types of middle ear analysis are included, please use this ordering

### **Multifrequency Tympanometry**

Provide traces. The preferred format is for B/G traces to be on the same printout with a separate Y trace.

Ensure that probe frequency is clearly noted.

* What question do you want to insert here? Delete if no question is to be used.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used.

### **Wideband Acoustic Immittance (WAI)**

Provide high-quality graphics

* What question do you want to insert here? Delete if no question is to be used.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used.

### **Middle Ear Absorption**

Provide high-quality graphics

* What question do you want to insert here? Delete if no question is to be used. Questions can be moved to the subheadings above, they need not appear after all of the middle ear data are provided.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used.

## **Acoustic Reflexes**

### **Thresholds**

Please put acoustic reflex results in the table below. Thresholds are assumed to be in dB HL. If in dB SPL then change the upper left-hand table notation AND note in text.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **(dB HL)**  **Probe Ear** | **Hz à**  **Stimulated Ear (Mode)** | **500** | **1000** | **2000** | **4000** | **BBN** |
| Right | Right  (Ipsi) | 85 | 105 | 110 | Absent | 95 |
| Right | Left  (Contra) | 80 | 100 | Absent | Absent | 90 |
| Left | Left  (Ipsi) | 90 | 105 | 110 | Absent | 100 |
| Left | Right  (Contra) | 95 | 110 | Absent | Absent | 95 |

* What question do you want to insert here? Delete if no question is to be used.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used.

### **Acoustic Reflex Decay**

Insert high-quality reproductions of the test results.

* What question do you want to insert here? Delete if no question is to be used.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used.

# **Electroneuronography**

Ensure that images are high-quality

# **Otoacoustic Emissions**

## **Transient-Evoked**

Insert high-quality reproductions of the test results.

Use of a tabular format, either as a way of presenting the results. Adjust table, adding and removing and relabeling frequencies as appropriate to the case.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Freq (Hz)** | **500** | **1000** | **2000** | **3000** | **4000** | **6000** |
| **Right Ear** | **OE Level** |  |  |  |  |  |  |
|  | **SNR** |  |  |  |  |  |  |
| **Left Ear** | **OE Level** |  |  |  |  |  |  |
|  | **SNR** |  |  |  |  |  |  |

* What question do you want to insert here? Delete if no question is to be used.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used.

## **Distortion-Product**

Insert high-quality reproductions of the test results.

Use of a tabular format, either as a way of presenting the results. Adjust table, adding and removing and relabeling frequencies as appropriate to the case.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Freq (Hz)** | **500** | **1000** | **2000** | **3000** | **4000** | **6000** |
| **Right Ear** | **OE Level** |  |  |  |  |  |  |
|  | **SNR** |  |  |  |  |  |  |
| **Left Ear** | **OE Level** |  |  |  |  |  |  |
|  | **SNR** |  |  |  |  |  |  |

* What question do you want to insert here? Delete if no question is to be used.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used.

# **Vestibular Evaluations**

## **Dizziness Self-Assessment Scales / Questionnaires**

* What question do you want to insert here? Delete if no question is to be used.
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## **Basic Clinical Vestibular Evaluation**

This section is intended for examinations made without electrophysiologic recordings, e.g. “bedside” evaluation of gaze nystagmus. Include results of cranial nervwe examination, cerebellar examination, ocuilomotor function (smooth pursuit, gaze, saccade testing without recording equipment).

* What question do you want to insert here? Delete if no question is to be used.
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## **VOR Tests**

Include DVA / HIT/Head thrust, Head shake and hyperventilation testing in this category (if completed on the patient).

## **Vestibulo-spinal Tests**

Include Romberg (standard, semi-tandem, and full tandem(sharpened), mCTSIB and Unterberg/Fukuda tests in this section

## **Dynamic Balance / Gait Tests / Fall Risk Evaluation**

Include Gans SOP, DGI/FGA, TUG (simple, manual, cognitive), Five times sit-to-stand test, and MiniBESTest in this section, if included in the case.

* What question do you want to insert here? Delete if no question is to be used.
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## **Evaluation for BPPV**

Include VAST, Dix-Hallpike, Side-lying modification of Dix-Hallpike / Head roll/roll test

## **ENG/VNG**

Delete the category (ENG or VNG) that is not appropriate for this case

### G**aze / Spontaneous Nystagmus Testing**

* What question do you want to insert here? Delete if no question is to be used.
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### **Oculomotor Tests**

* What question do you want to insert here? Delete if no question is to be used.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used

### **Saccades**

* What question do you want to insert here? Delete if no question is to be used.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used

### **Smooth Pursuit**

* What question do you want to insert here? Delete if no question is to be used.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used

### **Optokinetic**

* What question do you want to insert here? Delete if no question is to be used.
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### **High-Frequency Headshake**

* What question do you want to insert here? Delete if no question is to be used.
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### **Positional/positioning Tests**

If included, please use this order

Dix-Hallpike

* What question do you want to insert here? Delete if no question is to be used.
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Roll test

* What question do you want to insert here? Delete if no question is to be used.
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Positional – supine, head right/left/center. Include neck torsion effects / McCabe maneuver

* What question do you want to insert here? Delete if no question is to be used.
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Positional – supine, body right/left/center

* What question do you want to insert here? Delete if no question is to be used.
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### **Caloric Tests (air/water/ice)**

* What question do you want to insert here? Delete if no question is to be used.
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## **Fistula test**

* What question do you want to insert here? Delete if no question is to be used.
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## **cVEMP**

* What question do you want to insert here? Delete if no question is to be used.
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## **oVEMP**

* What question do you want to insert here? Delete if no question is to be used.
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## **vHIT**

* What question do you want to insert here? Delete if no question is to be used.
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## **Rotary Chair**

* What question do you want to insert here? Delete if no question is to be used.
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## **Posturography**

* What question do you want to insert here? Delete if no question is to be used.
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# **Auditory Electrophysiologic Evaluations**

## **ECoG**

* What question do you want to insert here? Delete if no question is to be used.
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## **ABR**

If neurologic ABR testing is conducted, the use of this summary sheet is encouraged, if appropriate for the case.

Click Intensity: 80 dB nHL, 21.7 clicks/second stimulus repetition rate

**I.** **Wave Peak Latencies Interpeak Latencies**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **I** | **III** | **V** | **I-III** | **III-V** | **I-V** |
| **Right Ear** |  |  |  |  |  |  |
| Left Ear |  |  |  |  |  |  |
| Mean \* | 1.54 | 3.70 | 5.60 | 2.20 | 1.84 | 4.04 |
| Range of Normal (ms) (+/- 2 SD)\* | 1.34-  1.74 | 3.40-  4.00 | 5.22-  5.98 | 1.88-  2.52 | 1.50-  2.18 | 3.68-  4.40 |
| Outer Limits for Cochlear\*\* |  |  |  | 2.55 | 2.35 | 4.60 |

1. **Interaural Latency Differences**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **I** | **III** | **V** | **I-III** | **III-V** | **I-V** |
| **Difference** |  |  |  |  |  |  |
| Range of Normal (ms) (+/- 2 SD)\* | .21 | .26 | .29 | .25 | .25 | .28 |
| Outer Limits for Cochlear\*\* | .65 | .59 | .52 | .41 | .37 | .46 |

**III. Latency Increase with Stimulus Repetition Rate Increase**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Wave V Latency  (at 71.1 cl/sec) | Latency Increase  (with rate increase) | Significance |
| Right Ear |  |  |  |
| Left Ear |  |  |  |

**IV.**  **Amplitude Ratio of Waves I/V**

Right Ear: \_\_\_ Normal \_\_\_ Wave I larger than Wave V \_\_\_ Wave I more than 2x Wave V

Left Ear: \_\_\_ Normal \_\_\_ Wave I larger than Wave V \_\_\_ Wave I more than 2x Wave V

**V.**  **Morphology and Replicability**

**VI. Quality of Traces - Assessment of Control Run, Artifact Rejection**

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**VII. Additional Comments**

**\*** Schwartz et al., 1989

\*\* Hall & Mueller, 1997

* What question do you want to insert here? Delete if no question is to be used.
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The Impressions/Treatment and Case Management sections may be omitted if not appropriate, e.g. for an introductory case where the learning objectives do NOT include diagnosing or recommending. For an introductory case that asks for recognition of normal / abnormal results, it may be more appropriate to substitute “Summary” or similar title if asking the student to list the abnormal results. Case Management can be used as informational only, without questions, (e.g. “The patient was referred to …”)

It can be helpful to include the “impressions / management answers” in the instructor’s guide. If you do not want them in the student’s Web-based case, please use a prominent RED color font and indicate “For Instructor Guide Only.”

## **Other Auditory Electrophysiology**

# **Imaging / Other Medical Evaluation Results**

Reorder this tab to the location that best fits the case; that may be before or it may be here, after the audiological/vestibular evaluation results.

* What question do you want to insert here? Delete if no question is to be used.
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# **Impressions/Treatment**

* What question do you want to insert here? Delete if no question is to be used.
* If a question is given, please provide the answer to the question as it would appear in the Instructor Guide. Delete this bullet if no question is to be used

# **Case Management**

* What question do you want to insert here? Delete if no question is to be used.
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