**Vestibular Unit Questions**

1. While working with a patient on adaptation exercises, you ask the patient to turn their head to the left. With this head motion, what is occurring in the **RIGHT** horizontal semicircular canal?
   a. As the patient accelerates the head movement, inertia is initially dragging endolymph fluid to the left, creating ampullofugal flow
   b. As the patient accelerates the head movement, inertia is initially dragging endolymph fluid to the left, creating ampullopedal flow
   c. As the patient accelerates the head movement, inertia is initially dragging endolymph fluid to the right, creating ampullofugal flow
   d. As the patient accelerates the head movement, inertia is initially dragging endolymph fluid to the right, creating ampullopedal flow

2. If you suspect that your patient has a vestibular neuritis affecting the inferior vestibular nerve only, which structures would be affected and which vestibular function test would best provide you with information on its functioning?
   a. Saccule/Pos SCC; O-VEMP
   b. Saccule/Pos SCC; C-VEMP
   c. Lat SCC/utricle/Ant SCC; O-VEMP
   d. Lat SCC/utricle/Ant SCC; C-VEMP

3. A 40 year old man presents to an outpatient clinic with complaints of room spinning when he turns his head. The PT performs the Dix Hallpike. To the left, the patient reports no symptoms with no eye movement noted. To the right, there is no eye movement noted, but the patient reports lightheadedness with no spinning. The PT then performs the Supine Roll Test and the Bow and Lean test, and the following findings are noted:

<table>
<thead>
<tr>
<th>Roll Right</th>
<th>Right beating nystagmus that lasts &gt; 60 seconds, pt unable to rate symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roll Left</td>
<td>Left beating nystagmus that lasts &gt; 60 seconds, pt unable to rate symptoms</td>
</tr>
<tr>
<td>Bow</td>
<td>Right beating nystagmus</td>
</tr>
<tr>
<td>Lean</td>
<td>Left beating nystagmus</td>
</tr>
</tbody>
</table>

The patient’s diagnosis is:

a. Right horizontal canal canalithiasis
b. Left horizontal canal canalithiasis
c. Right horizontal canal cupulolithiasis
d. Left horizontal canal cupulolithiasis
e. Multi canal BPPV
4. Joe has a right unilateral vestibular hypofunction after vestibular neuritis. Which of the following examination findings would Joe most likely present with?
   a. Left beating spontaneous nystagmus
   b. Left beating gaze evoked nystagmus looking right, right beating gaze evoked nystagmus looking left
   c. Right beating gaze evoked nystagmus looking right, right beating gaze evoked nystagmus looking left
   d. Right torsional positional nystagmus

5. A 32 year old man presents to your clinic with complaints of dizziness and imbalance. Which of the following examination findings would be suggestive of a peripheral disorder?
   a. Catch up saccades during horizontal smooth pursuit from left to right
   b. Overshooting saccades (2) upon left horizontal saccadic testing
   c. Corrective saccade to the left upon head thrust test
   d. Down-beating nystagmus during left gaze
   e. Nystagmus seen during sound induced nystagmus test

6. A 56 year old woman presents to your clinic after visiting an ENT who performed caloric testing. The testing was performed in the supine position with head flexed 30 degrees. This means that in the left ear, the patient will get ________ nystagmus, and in the right ear, the patient will get ________ nystagmus when warm air is applied. If there is a right hypo-function, then you would expect ______________ unilateral weakness, and __________________ directional preponderance.
   a. Left; left; left; left
   b. Right; right; right; right
   c. Left; right; right; left
   d. Left; right; left; right
   e. Right; left; left; right

7. Jess is a 55 year old female who attends her PT evaluation in a direct access state with no physician referral, with complaints of vertigo, nausea, and vomiting. She reports that her symptoms started two days ago and she has not seen a physician at this time. All of the following examination findings would warrant a physician referral, except:
   a. Reports of dizziness increased when testing for vertebral artery insufficiency
   b. Dysconjugate gaze with overshooting during horizontal saccades
   c. Spontaneous down-beating nystagmus noted at rest
   d. Right beating gaze evoked nystagmus when looking right and left beating gaze evoked nystagmus when looking left
   e. Skew eye deviation on the left
8. Laura is being seen for a vestibular rehabilitation evaluation and the PT administers a set of standardized outcome measures. Which of the following results would warrant the necessity of skilled PT intervention?
   a. Dizziness Handicap Inventory score of 85
   b. Activities Specific Balance Confidence scale score of 98%
   c. Dynamic Gait Index score of 23
   d. Timed up and go score of 12 seconds
   e. Motion Sensitivity Quotient score of 6

9. Tony is a 55 year old with complaints of dizziness affecting his daily activities. He reports that he feels like the room is spinning, and it happens when turning his head too quickly. What is the next best question to ask when taking his history?
   a. How long does the spinning last?
   b. Does the spinning occur with any other activity?
   c. Do you lose your balance when you feel like you are spinning?
   d. On a scale of 0 to 5, what would you rate your dizziness?

10. A 70 year old man is discharged from the hospital where he was treated for a systemic infection. He now presents to an outpatient clinic with complaints of disequilibrium. On physical examination, the PT notes normal oculomotor findings, positive corrective saccade to the right and left during head thrust test, loss of 7 lines on the dynamic visual acuity test, and a Sensory Organization Test score of 45 with no sensory curing of his vestibular system. His vestibular function tests noted no asymmetry issues, but significant losses of gain at all frequencies.

   Based on these findings, which of the following vestibular rehabilitation exercises would you want to perform for this patient?
   a. X1 viewing (adaptation)
   b. Remembered targets (substitution)
   c. Components of the Motion Sensitivity Quotient (habituation)
   d. Standing balance in tandem with eyes closed on foam (balance retraining)

11. For a patient with left posterior canal canalithiasis, the pattern of nystagmus seen would be: ___________________________ and the repositioning maneuver performed should be: ___________________________.
   a. Left upbeating nystagmus < 60 secs; canalith repositioning maneuver with head rotated left and extended to start
   b. Left upbeating nystagmus < 60 secs; canalith repositioning maneuver with head rotated right and extended to start
   c. Left upbeating nystagmus > 60 secs; Semont maneuver starting with head rotated left
   d. Left upbeating nystagmus > 60 secs; Semont maneuver starting with head rotated right
12. A 34 year old male with a traumatic brain injury reports significant vertigo and dizziness with position changes. After performing an evaluation, the PT notes that the peripheral vestibular system is normal and the patient’s dizziness is due to central dysfunction. The PT performs the motion sensitivity quotient in order to prescribe a HEP and the results of the first four activities are below. Based on the results, which habituation exercise should be prescribed?

<table>
<thead>
<tr>
<th>Position Change</th>
<th>Symptoms</th>
<th>Symptom Duration</th>
<th>Score (I+D)</th>
<th>Nystagmus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sitting⇒Supine</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>No</td>
</tr>
<tr>
<td>2. Supine⇒Left side</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>No</td>
</tr>
<tr>
<td>3. ⇒⇒Right side</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>No</td>
</tr>
<tr>
<td>4. Supine⇒sitting</td>
<td>5</td>
<td>3</td>
<td>8</td>
<td>No</td>
</tr>
</tbody>
</table>

a. 10 reps of sitting to supine, moving quickly with transition
b. 3 sets of 10 reps of supine to rolling to left side moving slowly with transitions
c. 3-5 reps of supine to rolling to right side, taking breaks in between reps
d. Up to 5 reps of supine to sitting, 1-3 times a day

13. A patient presents to PT with complaints of dizziness. When asked about the onset and nature of the dizziness, the patient reports that they have severe spinning which makes them nauseous and it lasts for up to 1-2 days at a time, then it improves. When asked, the patient reports no history of trauma of any kind of pain at this time. Which of the following diagnoses should the PT most likely consider given the nature of symptoms only?

a. A central disorder such as ischemia, stroke, tumor
b. BPPV
c. Meniere’s Disease
d. Unilateral hypofunction
e. Cervicogenic dysfunction

14. A person presents to your clinic complaining of occasional “dizziness” and a new onset of hoarseness in their voice. During your clinical examination, you observe the following findings: vertical nystagmus during oculomotor testing, decreased upper limb coordination on the right, and decreased pain and temperature on the face on the left. Based on these findings, where might the lesion be?

a. Right Anterior Inferior Cerebellar Artery (AICA)
b. Right Posterior Inferior Cerebellar Artery (PICA)
c. Left Anterior Inferior Cerebellar Artery (AICA)
d. Left Posterior Inferior Cerebellar Artery (PICA)
e. Right sided vestibular peripheral hypofunction
15. A patient presents with non-specific dizziness with unsteadiness > 3 months. She is stimulated by complex, busy environments and head turns, with no associated hearing loss or headaches. Given this information, the most likely diagnosis is:
   a. Meniere’s disease
   b. Anxiety related dizziness
   c. Persistent postural perceptual dizziness
   d. Vestibular Migraine
   e. BPPV