

These Eyes Don't Lie: 3 Ways to Determine if the Nystagmus with Dizziness is a Red Flag

Kregg Ochitwa BScPT, CWCE, CredMDT
November 17, 2021



1

Who is this webinar for?

A busy clinician who:

- Second guesses themselves when they see nystagmus.
- Wants to know if the nystagmus they see is something to be concerned about.
- Is interested in the field of vestibular therapy.
- Or, simply likes to continue learning.

2

Objectives

By the end of this webinar we should have:

- You feeling more comfortable analyzing nystagmus.
- Developed an understanding of how to use nystagmus to help determine if the dizziness is a condition coming from the inner ear or brain.
- Have more confidence in knowing when to refer.

3

Some vestibular facts

- More than 1/3 of the adult population in the USA 40 years of age and older have experienced some sort of vestibular disorder. (Agrawal 2009)
- On average patients consult 4-5 doctors before receiving a diagnosis. (veda)
- BPPV costs approximately \$2000USD to diagnose as >65% of patients undergo unnecessary diagnostic testing or therapeutic interventions. (Wang 2014)



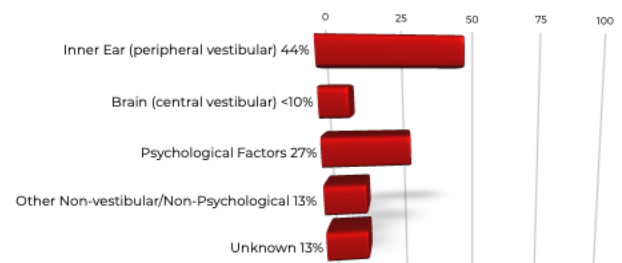
4

Causes of dizziness

- Cardiovascular
- Visual Impairment
- Metabolic
- Mental Health
- Cervicogenic
- Medication Induced
- Vestibular

5

Causes of dizziness



Causes of dizziness in patients 18 years of age and older (Kroenke 2000)

6

What is nystagmus?

- Nystagmus (nuh-stag-muhs) is simply repetitive, uncontrolled eye motion.
- It usually affects both eyes.
- Depending on the cause it may be constant or intermittent. It can also be temporary or permanent.

7

What does nystagmus look like?

- Nystagmus will look like a stuttering or flicking motion of the eyes that can be linear (upward, downward, or lateral), rotary, or a combination.
- Sometimes the nystagmus can be seen in room light while other times it cannot, so health care providers will have to use infrared goggles.

8

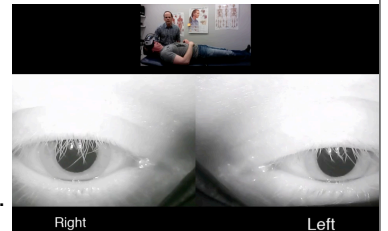
What causes nystagmus?

- Conditions affecting the brain.
- Medication use.
- Conditions affecting the inner ear.
- Alcohol and drug use.
- Neurological conditions in newborns.
- Albinism.

9

What does nystagmus look like?

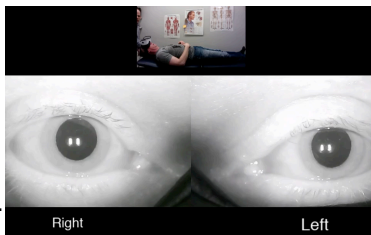
With left beat nystagmus, that you could see with a peripheral and central vestibular condition, the sudden eye motion is towards their left (our right).



10

What does nystagmus look like?

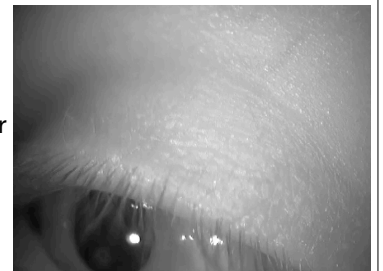
With right beat nystagmus, that you could see with a peripheral and central vestibular condition, the sudden eye motion is towards their right (our left).



11

What does nystagmus look like?

With down beat nystagmus, that you may see with a central vestibular disorder, the sudden eye motion is towards the ground.



12

What does nystagmus look like?

With up beat, right torsional nystagmus, typically seen with BPPV, the sudden eye motion is up and to their right.

Or, to us it looks like it is beating up and counter-clockwise.

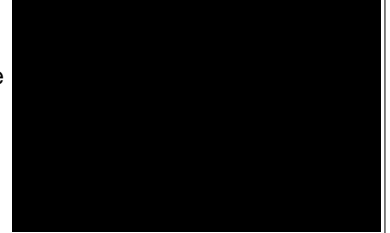


13

What does nystagmus look like?

With up beat, left torsional nystagmus, typically seen with BPPV, the sudden eye motion is up and to their left.

Or, to us it looks like it is beating up and clockwise.



14

What elicits the Nystagmus?

- Spontaneous
- Eye position
- Change of head position
- Pressure changes
- Other

15

What are some tests that can elicit nystagmus?

- Spontaneous Nystagmus
- Gaze Evoked Nystagmus
- Head Shake Nystagmus
- Dix-Hallpike Test
- Roll Test
- Valsalva Test
- Tragal Test
- Other

16

3 ways to determine if the nystagmus with dizziness is a red flag

1. Visual fixation (using infrared goggles).
2. 2 specific signs.
3. BPPV vs central vestibular.



17

1. Visual fixation

Nystagmus from a central vestibular disorder will be just as prevalent in room light as it will be when visual fixation is removed.



18

1. Visual fixation

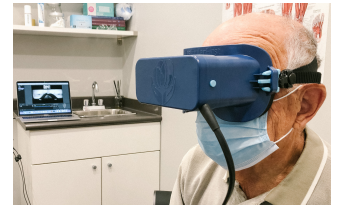
Nystagmus from a peripheral vestibular disorder will be less prevalent in room light compared to when visual fixation is removed.



19

2. Two specific signs

1. Any pure down beat, up beat, or torsional nystagmus.
2. Direction changing gaze evoked nystagmus.



20

Tip

1. If the nystagmus is from a peripheral condition the nystagmus will be less prevalent in room light compared to when visual fixation is removed.
2. If the nystagmus is up, down, or torsional due to a peripheral condition, having the patient look with their eyes to one side should increase the torsional component of the nystagmus while looking the other way increases the vertical component.



21

Tip

Remember that with direction changing gaze evoked nystagmus:

1. Do not confuse it with direction changing positional nystagmus as seen with the Roll test for BPPV.
2. The nystagmus will be just as prevalent in room light as when visual fixation is removed.
3. When testing for gaze evoked nystagmus do not have them look past 30° to each side.



22

3. BPPV vs Central Vestibular

Nystagmus with Dix-Hallpike and/or Roll Test	Central	Peripheral - Canalithiasis	Peripheral - Cupulolithiasis
Latency	No	>1 second	No
Duration	Persistent	<1 minute	>1 minute
Direction	Uniplanar	Multiplanar (unless lateral canal)	Multiplanar (unless lateral canal)
Fatiguability	No	Yes	Yes
Visual fixation	No change +/- visual fixation	More obvious when visual fixation is removed	More obvious when visual fixation is removed
Effect with looking to each side	No effect	Effect torsional & vertical component	Effect torsional & vertical component
Response to treatment for BPPV	No effect	Fast responder	Fast responder



23

3 ways to determine if the nystagmus with dizziness is a red flag

1. Visual fixation (using infrared goggles).
2. 2 specific signs.
3. BPPV vs central vestibular.



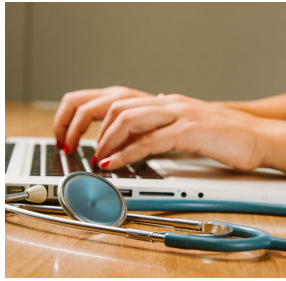
24

Patient history

Also remember that the patient history is **KEY**:

- Associated other 5D's.
- Past medical history.
- Onset and duration.
- etc.

Put things in context and remember that a patient can have a multiple reasons for their dizziness. There can also be false positive findings.



25

Other clinical tid bits

- If droopy eyelids make it hard to see their eyes, push up with one hand on their eyebrows with assessing for spontaneous and gaze evoked nystagmus.
- If no infrared goggles you can use an ophthalmoscope to assess spontaneous and gaze evoked nystagmus.

26

When to refer?

- Other 5D's, query migraines, and/or neurological signs consider neurology referral. If recent onset and you are first to assess, consider sending to emergency.
- Other aural symptoms, then consider otolaryngology referral.

27

Other resources

Check out our website at: courses.north49therapy.com.

- Weekend, online, and hybrid training.
- Nystagmus library.
- Blogs.
- FREE monthly newsletter.
- Understanding Dizziness Quiz.

Youtube videos for care providers and patients at: north49 physio.

28

Deal

10% OFF
UNDERSTANDING DIZZINESS 101
ONLINE COURSE

[Course Info Page](#)



29

Thank you

Kregg Ochitwa
(T) 306-343-7776
(E) kregg@north49therapy.ca
(W) <https://courses.north49therapy.com>



30