

Understanding Alternobaric Vertigo



1.

The vestibular system plays a role in:

- A. Equalisation of the middle-ear air space
- B. Translating pressure changes into sound
- C. Balance and equilibrium
- D. Equalisation of the outer ear
- E. Coordinating hearing

2.

Alternobaric vertigo (AV) is most commonly associated with a pressure change in what part of the body?

- A. Inner ear
- B. Middle ear
- C. Brain
- D. Eyes
- E. Semicircular canals

3.

The ear is an interconnected system of air- and fluid-filled spaces. Normally there is a:

- A. Continual movement of gas between the inner ear and the back of the throat
- B. Continual exchange of gas between the middle ear and the back of the throat except during swallowing or yawning
- C. Periodic absorption of fluid in the middle ear, reducing middle-ear pressure
- D. Periodic fluid movement between the outer and middle ear
- E. Periodic gas movement into the middle ear such as during swallowing or yawning

4.

Nystagmus, a condition often associated with alternobaric vertigo (AV), is defined as:

- A. A sensation that the body is spinning
- B. Involuntary rhythmic eye movement
- C. Vomiting brought on by severe nausea
- D. A panic response that can occur during an AV event
- E. Pain caused by excessive pressure on the tympanic membrane

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5.

Symptoms of alternobaric vertigo (AV) could be considered dangerous because:

- A. The diver could panic, prompting an uncontrolled ascent
- B. Severe symptoms may last for hours, making it difficult to surface safely
- C. Elevated middle-ear pressure also means more nitrogen is trapped, increasing the risk of middle-ear bends
- D. Panic could induce hyperventilation, leading to high carbon-dioxide blood concentration
- E. Perforation of the oval window associated with AV leads to debilitating vertigo

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6.

To reduce the likelihood of developing alternobaric vertigo (AV), a diver should use:

- A. Gentle and frequent active equalisation during descent
- B. Passive equalisation before descending
- C. Equalisation techniques once reaching maximum depth
- D. Ear plugs to help slow the equalisation of pressure in both ears

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7.

DAN Europe advises that divers who repeatedly experience alternobaric vertigo (AV) should:

- A. Take decongestants to make equalising easier
- B. Use ear plugs to decrease pressure in the outer ear
- C. Consider using nitrox to reduce damage to the middle ear caused by nitrogen in the breathing gas
- D. Be evaluated by a medical professional to rule out potentially serious conditions
- E. Dive no deeper than 9m to avoid excessive pressure changes

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8.

Alternobaric vertigo is typically characterized by which of the following symptoms:

- A. Rapid heart rate lasting several hours
- B. Severe nausea lasting 24 hours
- C. Loss of hearing in one or both ears lasting up to several minutes
- D. Shallow-water blackout
- E. Spinning sensation lasting a few seconds

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9.

The most effective way to handle an alternobaric vertigo (AV) event is to:

- A. Descend slowly, and maintain eye contact with a fixed visual reference until symptoms subside
- B. Ascend slowly to the surface until symptoms subside
- C. Maintain control, and remain at a fixed depth until symptoms subside
- D. Descend as quickly as possible, and make physical contact with fixed object until symptoms subside
- E. Equalise actively and frequently until symptoms subside

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10.

If a diver experiences ear pain while descending, the ideal response is to:

- A. Ascend to a depth at which ear pain subsides, then equalise gently while slowly descending
- B. Ascend slowly, exit the water, and take decongestants before reattempting the dive
- C. Continue the descent as slowly as possible, and swallow until the ears are equalised
- D. Find a depth at which the pain is not bothersome, and continue the dive, equalising frequently
- E. Stop descending, stabilise and continue to attempt equalisation until pain subsides

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11.

A diver with persistent difficulty equalising during a descent should:

- A. Continue the descent, ascending as frequently as necessary to relieve any ear pain
- B. End the dive, because difficulty descending could increase the chance of later complications
- C. Shorten the dive, because lengthy descent increases the chance of having alternobaric vertigo
- D. Slowly surface, completely equalise and reattempt the descent
- E. Stop descent, stabilise and wait for the Eustachian tube to allow passive equalisation to occur

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12.

Reverse block occurs when gas volume in the middle ear:

- A. Decreases during ascent and is unable to escape
- B. Increases during descent and is unable to enter
- C. Decreases during descent and is unable to enter
- D. Increases during ascent and is unable to escape
- E. Decreases during descent and is unable to escape

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13.

Symptoms of vertigo that persist for more than several minutes are most likely a sign of:

- A. Severe congestion that requires treatment with decongestants and antibiotics
- B. Nonrhythmic nystagmus associated with a significant increase in pressure in one ear
- C. Caloric stimulation brought on by a sudden temperature change in both ears
- D. Sudden and significant increase in pressure in one middle ear
- E. Inner ear-barotrauma

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