

The background of the slide is a light gray gradient. It is decorated with numerous realistic water droplets of various sizes. Some droplets are in the top left corner, others are scattered in the middle, and a larger cluster is in the bottom right corner. The droplets have highlights and shadows, giving them a three-dimensional appearance.

MENIERE'S DISEASE

DR.AMER HISHMEH

PATHOPHYSIOLOGY

- WHEN AN ENDOLYMPH BUILD-UP IS FORMED IN THE LABYRINTH, IT INTERFERES WITH NORMAL BALANCE AND HEARING SIGNALS THAT SHOULD BE CONDUCTED FROM THE INNER EAR TO THE BRAIN. THIS IS WHAT IS CALLED ***MENIERE'S DISEASE***
- ALTHOUGH THIS DISORDER USUALLY UNILATERAL , BILATERAL MENIERE DISEASE HAS BEEN OBSERVED IN 5 TO 10% OF THE STUDIED CASE OF AURAL VERTIGO.

SYMPTOMS

- **VERTIGO** - IT REFERS TO THE SENSATION OF A WHIRLING MOVEMENT OF WHAT IS AROUND AN INDIVIDUAL AND MAY LAST FROM A FEW MINUTES TO SEVERAL HOURS WHICH CAUSES LOSS OF BALANCE IF NOT TREATED.
- **TINNITUS** - IS A SENSATION OF NOISE, RINGING, BUZZING, WHISTLING OR HISSING IN THE EAR.

SYMPTOMS

- **HEARING LOSS** - USUALLY LOW FREQUENCY SENSORINEURAL HEARING LOSS.
- **AURAL FULLNESS** - PATIENTS OFTEN DESCRIBE AURAL FULLNESS AS A STUFFY FEELING IN THE EAR, EAR PRESSURE, OR A CLOGGED SENSATION



CAUSES OF MENIERE'S DISEASE

- THE EXACT CAUSE AND REASON WHY MÉNIÈRE'S DISEASE STARTS IS NOT YET KNOWN. MANY THEORIES HAVE BEEN PROPOSED OVER THE YEARS. THEY INCLUDE: CIRCULATION PROBLEMS, VIRAL INFECTION, ALLERGIES, AN AUTOIMMUNE REACTION, MIGRAINE, AND THE POSSIBILITY OF A GENETIC CONNECTION.
- SOME PEOPLE WITH MÉNIÈRE'S DISEASE FIND THAT CERTAIN EVENTS AND SITUATIONS, SOMETIMES CALLED TRIGGERS, CAN SET OFF ATTACKS. THESE TRIGGERS INCLUDE STRESS, OVERWORK, FATIGUE, EMOTIONAL DISTRESS, ADDITIONAL ILLNESSES, PRESSURE CHANGES, CERTAIN FOODS, AND TOO MUCH SALT IN THE DIET.

EFFECTS ON HEARING

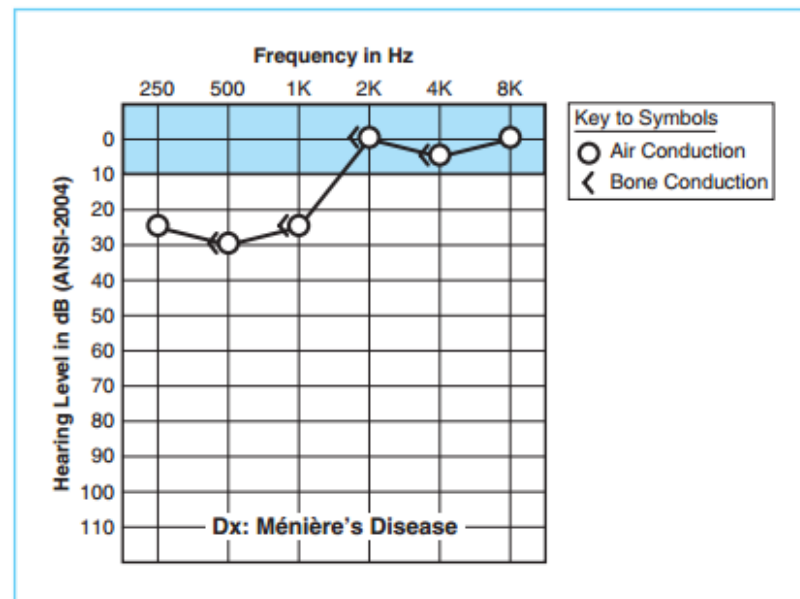
- HEARING ABILITY IN CASES OF MENIERE'S DISEASE DEPENDS ON THE STAGE AT WHICH A PERSON HAS DEVELOPED THIS DISEASE :-

-EARLY STAGE - DURING OCCURRENCES THERE WILL BE SOME DEGREE OF HEARING LOSS THAT RETURNS TO NORMAL LEVELS WHEN IT'S OVER. HEARING LOSS FLUCTUATES ESPECIALLY IN LOWER FREQUENCIES.

-MIDDLE STAGE - SENSORINEURAL HEARING LOSS DEVELOPS AND THE UNCOMFORTABLE LOUDNESS LEVEL IS REDUCED

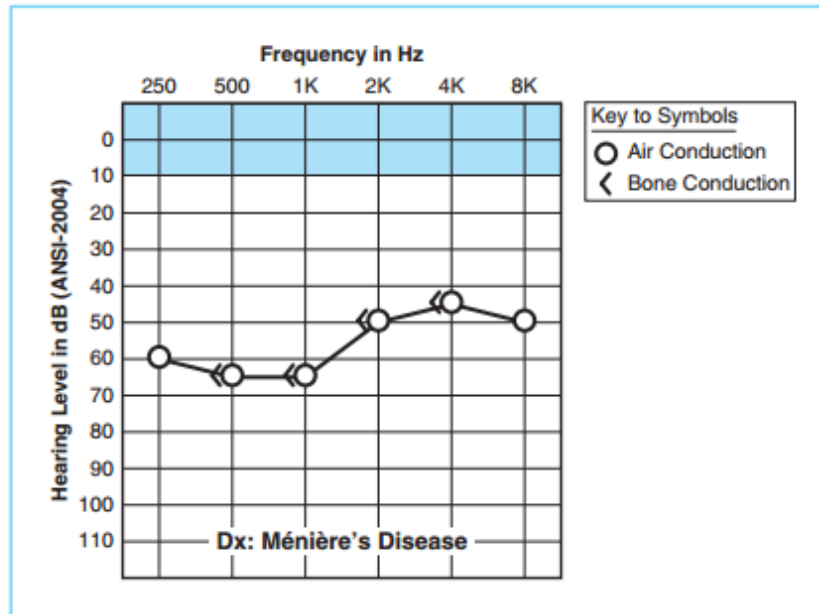
-LATE-STAGE - HEARING LOSS TYPICALLY GETS PROGRESSIVELY WORSE.

AUDIOGRAMS.



4-16 An audiogram representing the effects of the early stages of Ménière's disease.

AUDIOGRAMS



4-17 | An audiogram representing the effects of Ménière's disease that has progressed.

HOW IS MENIERE'S DISEASE DIAGNOSED?

- **HEARING TESTS** - TO TEST IF HEARING LOSS IS SPECIFIC TO YOUR INNER EAR. LOW FREQUENCY LOSS IS AN INDICATOR OF MENIERE'S.
- **ELECTRONYSTAGMOGRAPHY (ENG)** - TEST OR ALTERNATIVELY VIDEONYSTAGMOGRAPHY (VNG) TEST TO EXAMINE INVOLUNTARY EYE MOVEMENT IN RESPONSE TO DIFFERENT TEMPERATURES OF WATER
- **VEMP (VESTIBULAR EVOKED MYOGENIC POTENTIALS) TESTING** - CAN HELP DETECT ACCELERATION MOVEMENT.



DALLAS EAR
INSTITUTE

CONT.

- **THE AUDITORY BRAIN STEM RESPONSE (ABR), COMPUTED TOMOGRAPHY (CT), OR MAGNETIC RESONANCE IMAGING (MRI)** MAY BE NEEDED TO RULE OUT A TUMOR OCCURRING ON THE HEARING AND BALANCE NERVE.
- **ELECTROCOCHLEOGRAPHY (ECOG)** - IT IS USED TO LOOK FOR PRESENCE OF INCREASED INNER EAR FLUID PRESSURE

TREATMENT

- **MEDICATIONS** - IS MAINLY USED TO CONTROL VERTIGO AND REDUCE FLUID RETENTION.
- **LIFESTYLE CHANGES** - SOME PEOPLE CLAIM THAT CAFFEINE, CHOCOLATE, AND ALCOHOL MAKE THEIR SYMPTOMS WORSE AND EITHER AVOID OR LIMIT THEM IN THEIR DIET. NOT SMOKING ALSO MAY HELP LESSEN THE SYMPTOMS.
- **DIETARY RESTRICTIONS** - TO REDUCE SALT INTAKE IS VITAL TO MAINTAIN NORMAL FLUID PRESSURE
- **PRESSURE PULSE TREATMENT** —A DEVICE FOR MÉNIÈRE'S DISEASE THAT FITS INTO THE OUTER EAR AND DELIVERS INTERMITTENT AIR PRESSURE PULSES TO THE MIDDLE EAR. THE AIR PRESSURE PULSES APPEAR TO ACT ON ENDOLYMPH FLUID TO PREVENT DIZZINESS.

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- **VESTIBULAR REHABILITATION THERAPY** WILL BE NEEDED TO HELP IMPROVE THE ABILITY OF THE BRAIN TO PROCESS BALANCE INFORMATION.
- ****SURGERIES** ARE OFTEN RECOMMENDED WHEN OTHER TREATMENTS FAIL TO REDUCE SYMPTOMS*
- NONDESTRUCTIVE SURGERY** - ENDOLYMPHATIC SAC DECOMPRESSION
- DESTRUCTIVE SURGERIES** - INCLUDE LABYRINTHECTOMY, VESTIBULAR NERVE SECTION, AND CHEMICAL LABYRINTHECTOMY (USING ANTIBIOTICS).

CONT.

- **INJECTIONS.** INJECTING THE ANTIBIOTIC GENTAMICIN INTO THE MIDDLE EAR HELPS CONTROL VERTIGO BUT SIGNIFICANTLY RAISES THE RISK OF HEARING LOSS BECAUSE GENTAMICIN CAN DAMAGE THE MICROSCOPIC HAIR CELLS IN THE INNER EAR THAT HELP US HEAR. RECENTLY, INTRATYMPANIC STEROID INJECTIONS HAVE BEEN USED WITH LESS RISK OF HEARING LOSS AND PERSISTENT IMBALANCE.

END