

The image is a composite background. On the left side, a portion of the Earth is visible, showing the continents of Africa and Europe, along with the Atlantic and Indian Oceans. The globe is set against a clear, light blue sky. On the right side, there are rolling, golden-yellow sand dunes that stretch across the foreground and middle ground, creating a sense of depth and movement. The word "Vertigo" is centered in the upper-middle part of the image in a bold, dark red, sans-serif font.

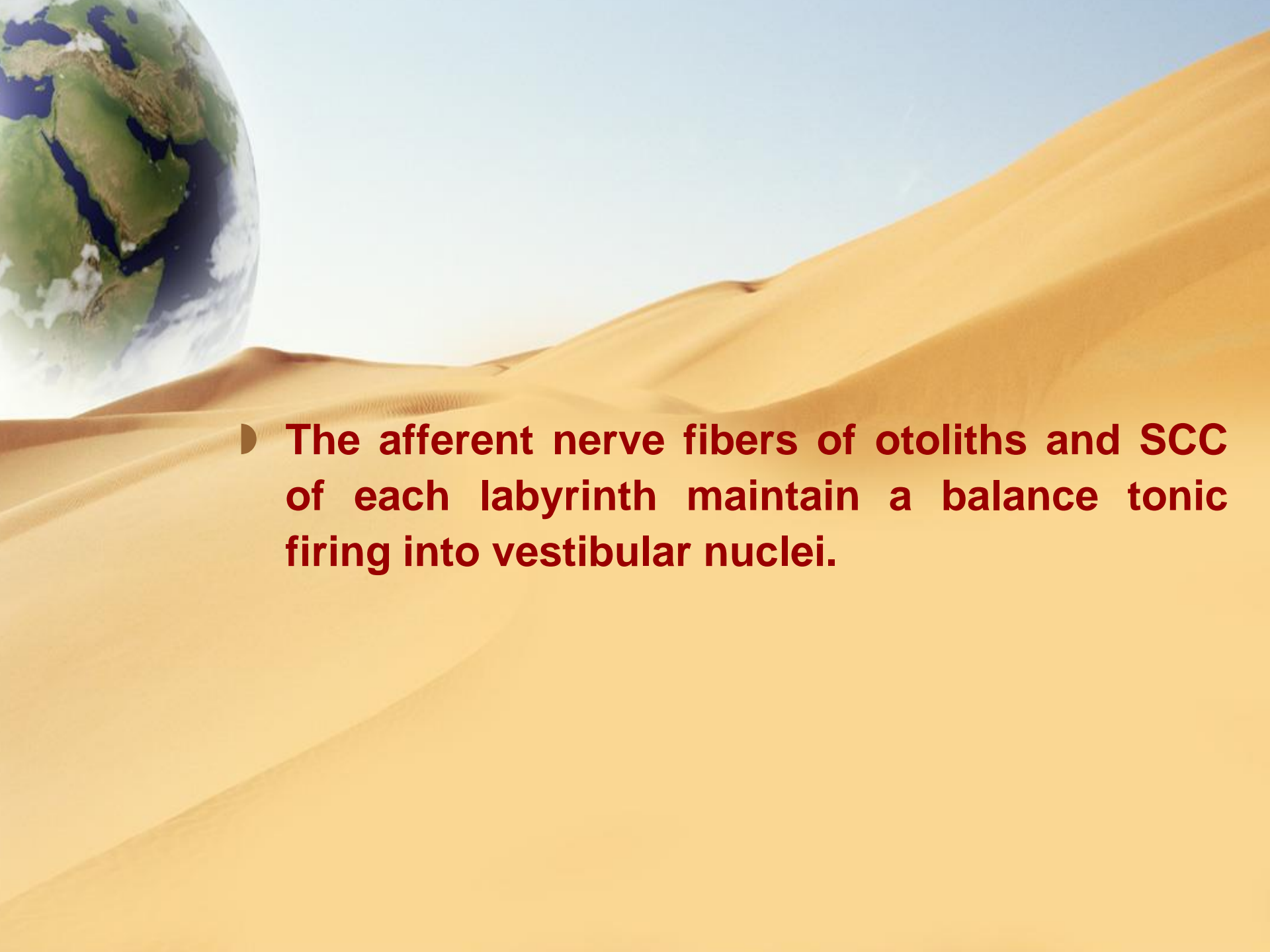
# Vertigo



# **Balance**

## **What are the balance organs?**

- ▶ **Inner ear (3 semicircular canals and otolith organ )**
- ▶ **Cerebellum**
- ▶ **Vision (VOR)**
- ▶ **Proprioceptive**

- 
- ▶ **The afferent nerve fibers of otoliths and SCC of each labyrinth maintain a balance tonic firing into vestibular nuclei.**



# Physiology

## Function of vestibular system:

- ▶ Transform of the forces associate with head acceleration and gravity into a biological signals that the brain can use to develop subjective awareness of head position in space (orientation) and produce motor reflexes that will maintain posture and ocular stability
- ▶ تحويل القوى المصاحبة لحركة الرأس والجاذبية الى اشارات بيولوجية والتي يمكن للدماغ أن يستخدمها ليعى وضعية الرأس في الفراغ وبالتالي ينتج عن ذلك انعكاسات حركية والتي بدورها سوف تثبت وضعية الجسم وحركة العين

It is not surprisingly that vestibular lesion cause imbalance, posture and gait imbalance and visual distortion (oscillopsia ).



# VERTIGO

- ▶ The word "vertigo" comes from the Latin "vertere", to turn + the suffix "-igo", a condition = a condition of turning about).
- ▶ It is an illusion of being moving or the world is moving too.





# **What are the questions to ask in history ?**

- ▶ **Onset**
- ▶ **Frequency**
- ▶ **Duration**
- ▶ **Associated auditory symptoms**
- ▶ **Aggravating and relieving factors**
- ▶ **Ear disease or ear surgery**
- ▶ **Trauma**
- ▶ **Migraine**
- ▶ **Ototoxic drug intake**



# **Peripheral vestibular loss**

## **Infection (Vestibular neuritis )**

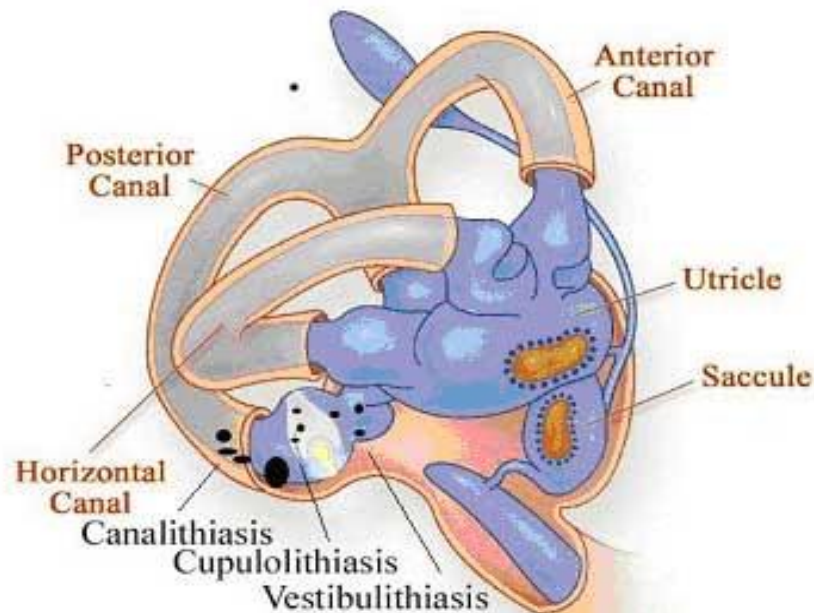
- ▶ **Viral infection of vestibular organ**
- ▶ **Affect all ages but rare in children**
- ▶ **Affected patient presents acutely with spontaneous nystagmus, vertigo and nausea & vomiting**
- ▶ **Patient requires only symptomatic treatment**
- ▶ **It takes 3 weeks to recover from vestibular neuritis**



# Vestibular neuritis



● BPPV( benign paroxysmal positional vertigo )





# **BPPV**

- **Repeated attacks of vertigo usually of short duration less than a minute .**
- ▶ **Provoked by certain positions (rolling in beds, looking up ,and head rotations)**
- ▶ **Not associated with any hearing impairment**

# BPPV

## Diagnosis

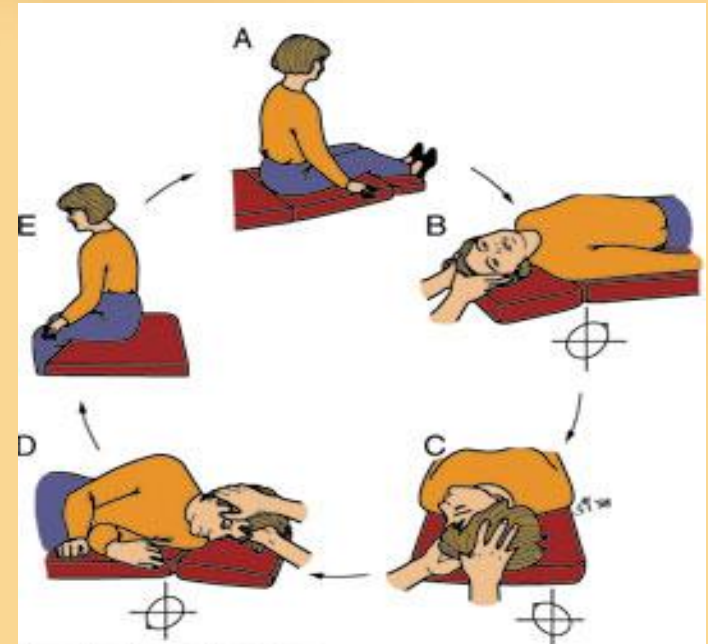
- ▶ History
- ▶ Dix-Halpike maneuver



# BPPV

- Treatment

Apply repositioning maneuver








# **Endolymphatic hydrop (Meneire's disease)**

## **Pathophysiology :**

- ▶ Unknown etiology**
- ▶ ↑ ↓ production of fluid within inner compartment**

- 
- ▶ **vertigo (minutes to hours )**
  - ▶ **Low frequency fluctuating SNHL**
  - ▶ **Tinnitus and fullness in the ear.**
  - ▶ **In 10 - 20% of cases the disease later involves the opposite ear**



# Meneire's disease

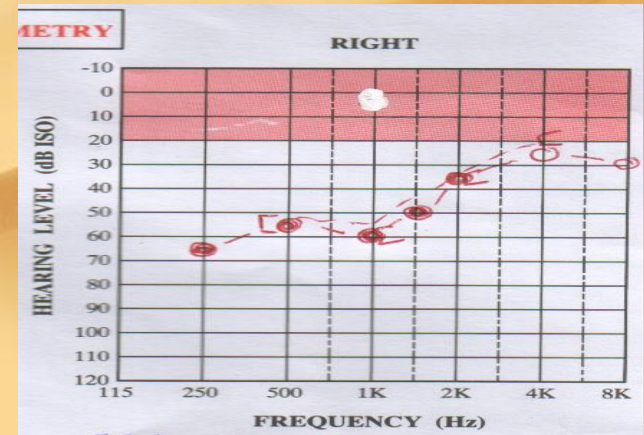
## ● Diagnosis

-History

-PTA

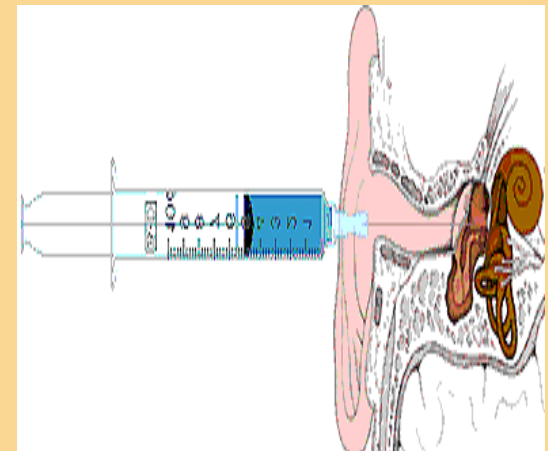
-Caloric and ENG

-(ECoG)



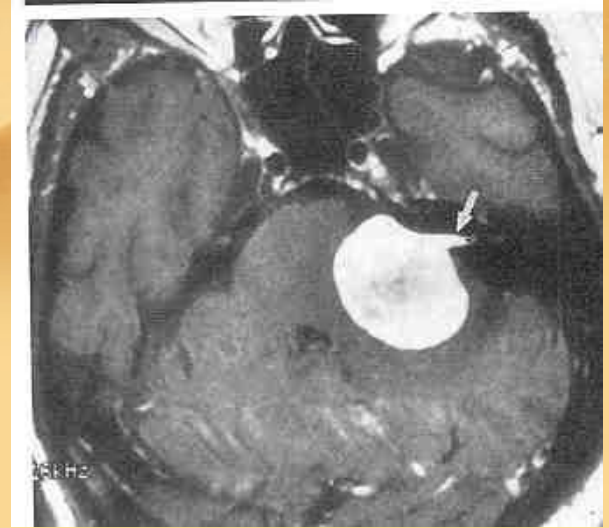
# Meneire's disease

- Management
  - low-salt diet
  - Medical therapy
  - *Meniett device's*
  - Chemical perfusion
  - Surgery



# Central vestibular loss

- ▶ Infarction
- ▶ Tumor (CPA)
- ▶ Multiple sclerosis



● **Multiple sclerosis**





# **diagnosis**

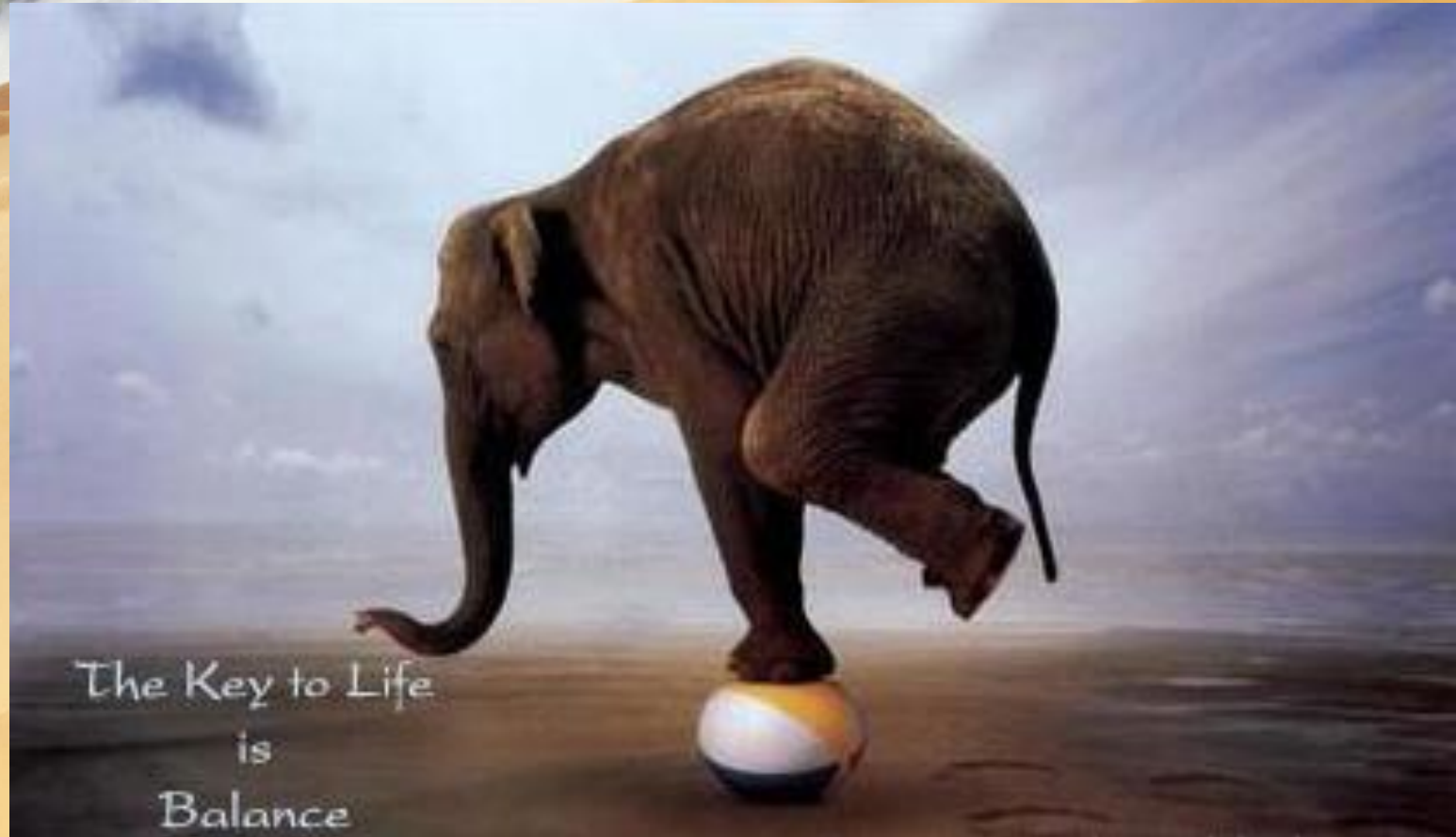
**History is the most important  
key to diagnosis .**



# **Investiagtions**

- ▶ **PTA**
- ▶ **CLORIC TEST**
- ▶ **ENG**
- ▶ **CT SCAN**
- ▶ **MRI**

# Take away message





**Thank you**