

*Anatomy, physiology & pathology
of the auditory system & speech*

**PATHOLOGY OF THE AUDITORY
ANALYZER**



TYPES OF HEARING IMPAIRMENT

- **hypacusia**
increased hearing threshold
- **hyperacusia**
decreased hearing threshold
- **paracusia**
increased hearing threshold
in noisy conditions

CONDUCTIVE HEARING IMPAIRMENTS

origin

- atresia of the auditory meatus
- earwax blockage
- foreign body
- eardrum rupture
- otitis media
- otosclerosis
- lack of the auditory ossicles



Middle ear inflammatory diseases

ACUTE OTITIS

- **throbbing pain & stuffy nose**
- **sickness**
- **a temperature rise**
- **signs of inflammation in a blood test**
- **irritation of the labyrinth**
(vertigo, nausea, vomiting)



Middle ear inflammatory diseases

CHRONIC PURULENT OTITIS

- purulent discharge from the ear
- hearing loss
- ear pain
- vertigo
- causes deafness

OTITIS MEDIA [1]

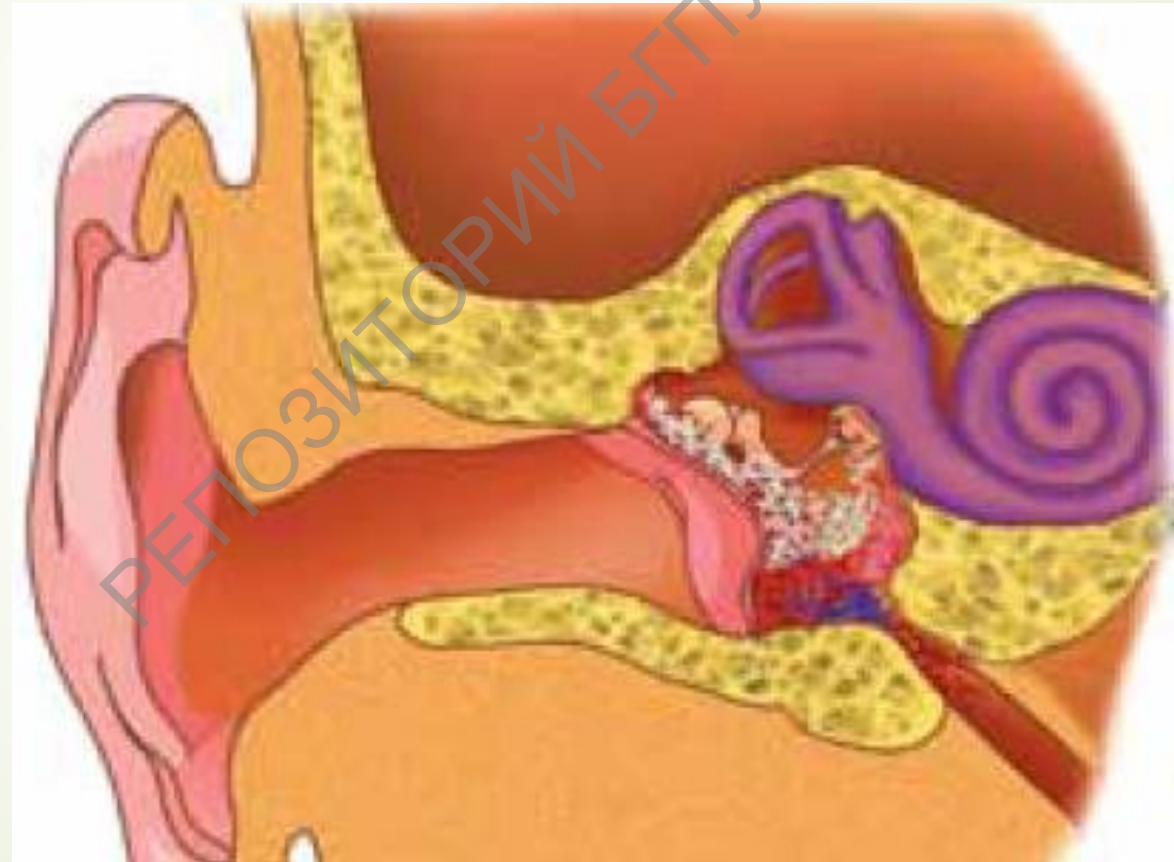
healthy ear



otitis media



OTITIS MEDIA [2]





Middle ear inflammatory diseases

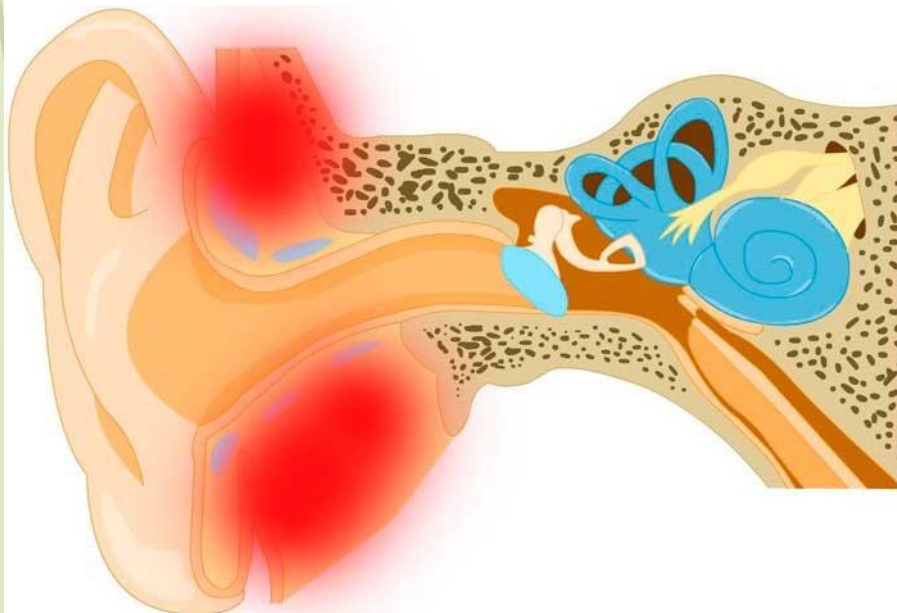
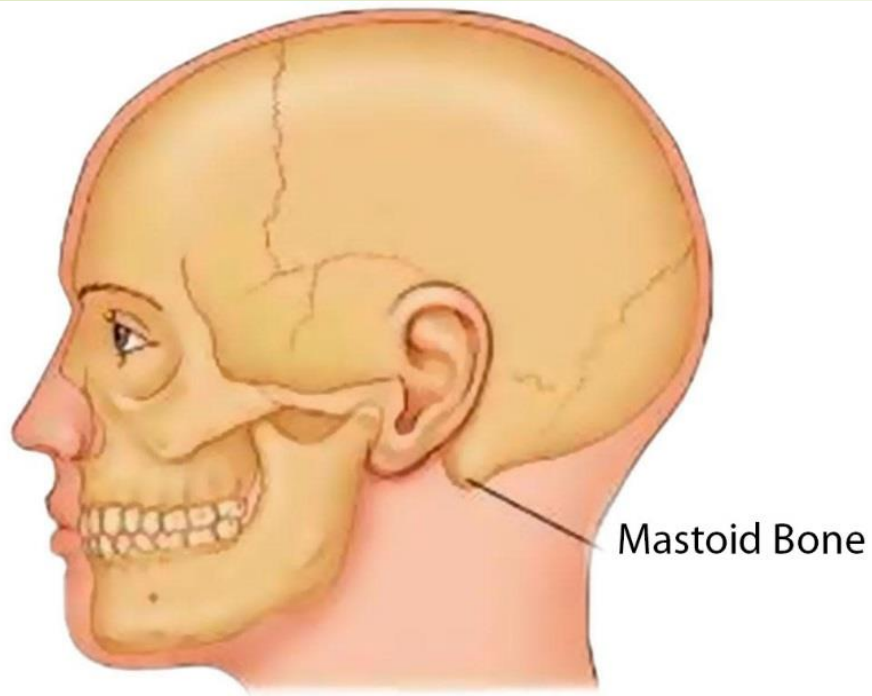
ACUTE MASTOIDITIS

inflammatory mastoid bone as a complication of
the purulent otitis

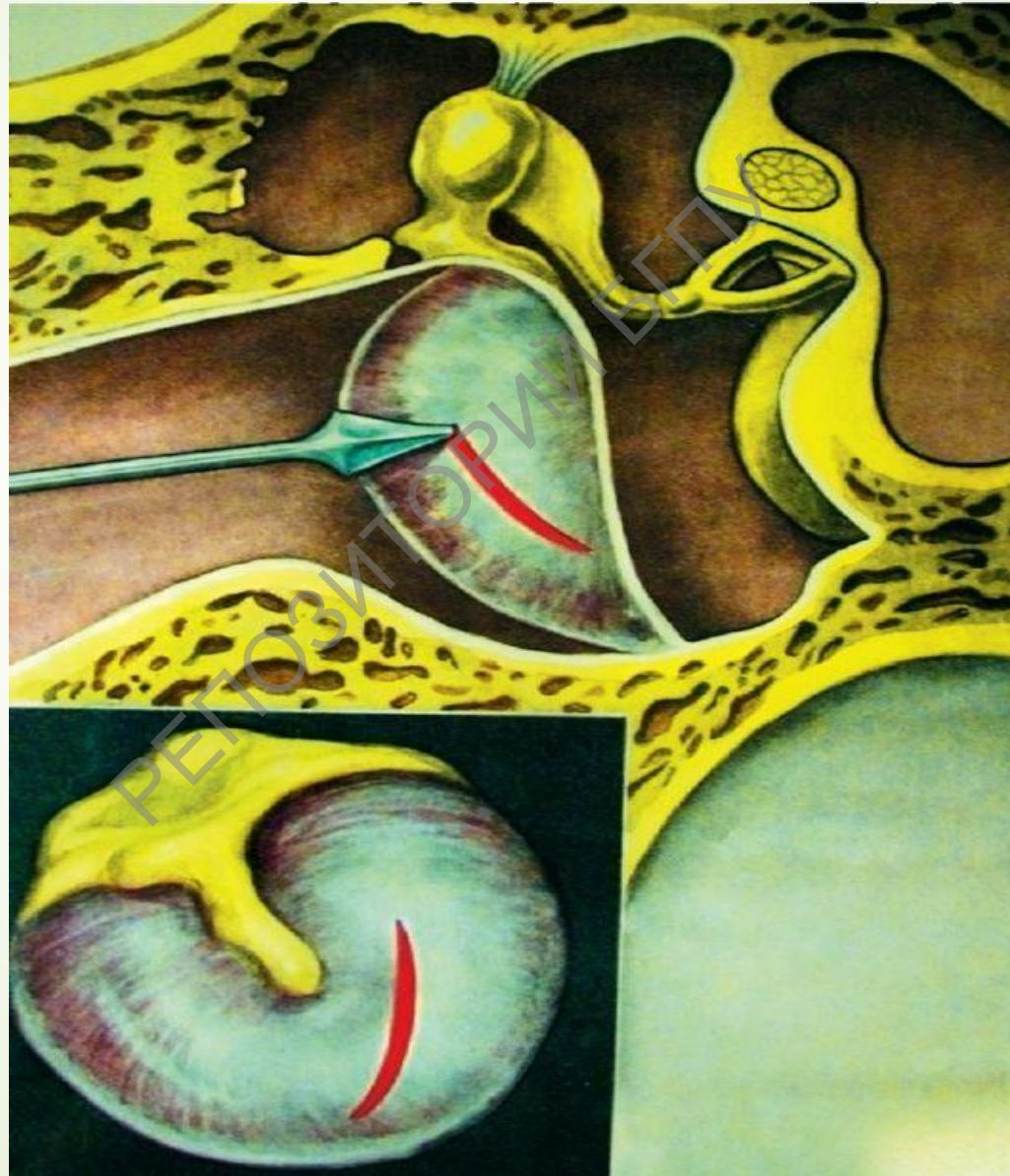
- a temperature rise
- weakness, lack of appetite
- ear & mastoid pain
- growing pain while pressing
- purulent discharge from the ear
- reddening & puffiness of the mastoid bone

Middle ear inflammatory diseases

ACUTE MASTOIDITIS



PARACENTESIS TYMPANI



CONGENITAL AUDITORY ANOMALIES

- **outer ear congenital anomalies**
 - anotia (lack of the auricle)
 - microtia (auricle agenesis)
 - auricle malformations
 - auditory canal atresia (imperforation)
- **middle ear congenital anomalies**
 - ossification of the tympanic cavity
 - fusion of the auditory ossicles
- **inner ear congenital anomalies**
 - lack or hypoplasia of the labyrinth
 - Corti's organ hypoplasia

SENSORINEURAL HEARING IMPAIRMENTS

origin

- **infectious diseases** (measles, parotitis)
- **side-effect of a medicine** (streptomycin)
- **ototoxic chemicals** (lead, mercury, manganese, carbon monoxide)
- **occupational noise & vibration**
- **circulatory failure in the internal ear**
- **labyrinthitis**
- **Waardenburg syndrome**
- **hypoplasia of the Corti's organ**

RETROCOCHLEAR DISORDERS

origin

- **stroke**
- **brain injury**
- **encephalitis**
- **auditory nerve neuropathy**
- **auditory nerve tumor**

Waardenburg syndrome (1951)

- wide-set eyes
- prominent broad nasal root
- low hairline and eyebrows that meet in the middle
- eyes of two different colors
- a forelock of white hair
- moderate to profound hearing loss

