



# eyes open ears on

EYES OPEN EARS ON HANDBOOK

# AUDIOLOGY

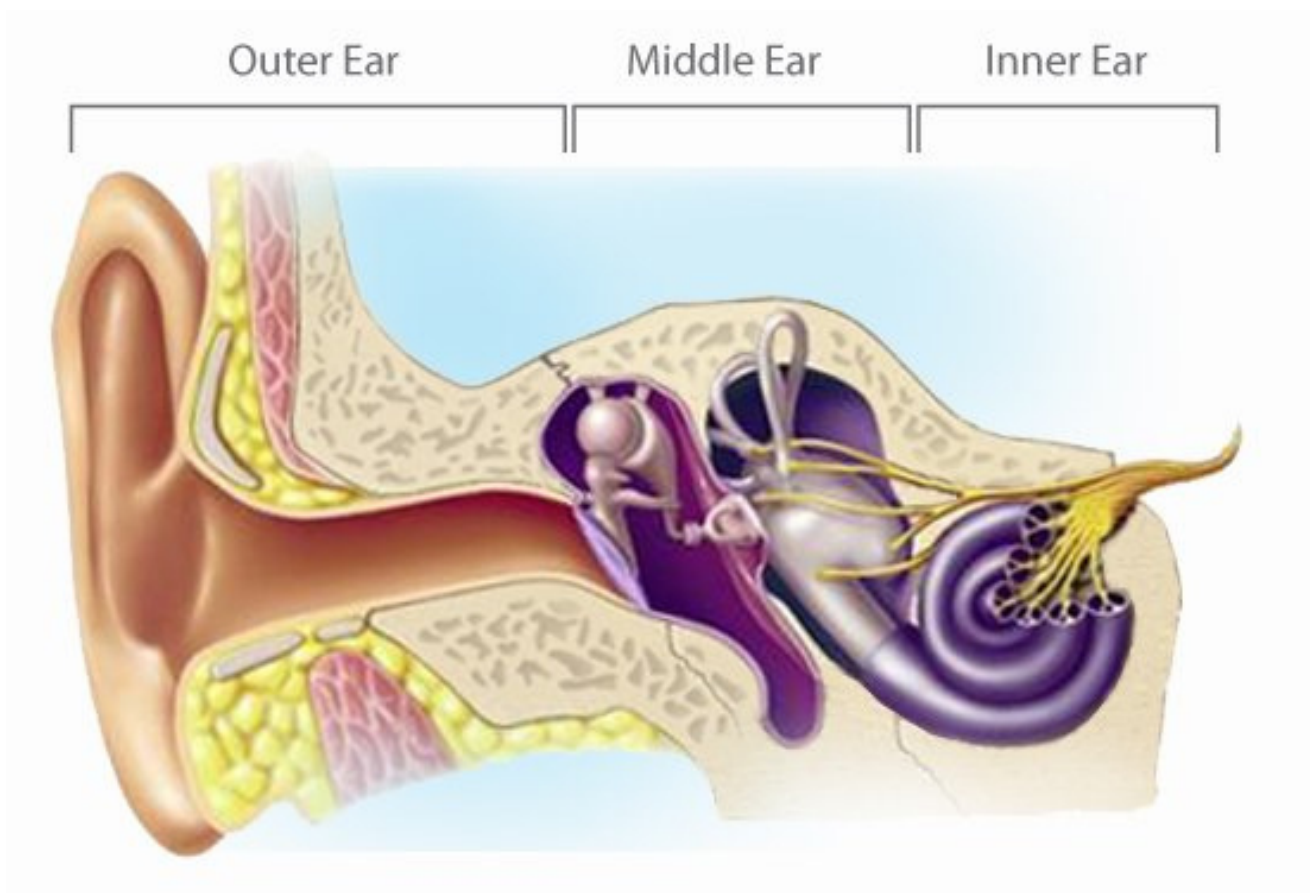
PARTS OF THE EAR  
HOW THE EAR WORKS  
TYPES OF HEARING LOSS  
THE LISTENING BRAIN  
DATA LOGGING

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OKC 405.548.4300 | TULSA 918.392.7600

# PARTS OF THE EAR



**Did you know** that the ear is quite complex and has three main parts:



# HOW THE EAR WORKS



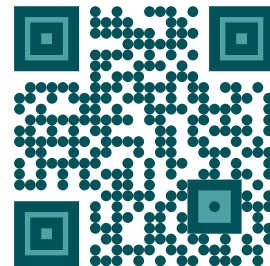
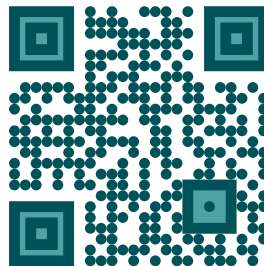
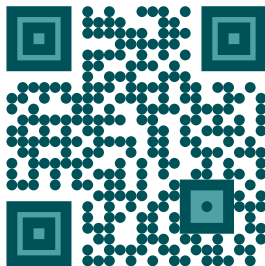
**The ear works** like a speaker and makes sounds and speech louder as they travel from the outer ear, to middle ear, to inner ear, ending at the brain.

## As a caregiver, I can

- Closely monitor for signs of ear infections and ear wax buildup.
- Outer ears can be cleaned at home with a washcloth and soap.
- Avoid using Q-Tips! Put nothing smaller than your elbow in your ear.
- Continue wearing hearing technology every minute the child is awake unless directed otherwise by the child's ENT or audiologist.



## Video Resources



# TYPES OF HEARING LOSS



**Did you know** hearing loss can occur at different points along the hearing system, and types of hearing loss are classified based on where the loss occurs in the ear.

There are three types of hearing loss:

## **SENSORINEURAL HEARING LOSS**

- The most common type of permanent hearing loss
- Sensorineural hearing loss cannot be corrected by surgery or medication

## **CONDUCTIVE HEARING LOSS**

- Some conductive hearing losses can be corrected by medical intervention while others may not be able to be corrected.

## **MIXED HEARING LOSS**

- Occurs when both a sensorineural and conductive hearing loss are present

## **As a parent, I can**

- speak with my child's audiologist and otologist to discuss what type of hearing loss my child has and the best intervention options available for them

# THE LISTENING BRAIN



**Did you know** that hearing loss is all about the brain? We listen with our BRAIN! Our ears are simply the way in.

The part of the brain that processes sound for us to hear and understand is the **AUDITORY CORTEX**. Think of your brain as a muscle. Like the muscles in your arms and legs, if you don't use it, you lose it. The hearing nerve and the hearing part of the brain can become weak if they're not used, which will make it harder to make use of hearing aids or cochlear implants later.

## **Why is getting sound to the brain important?**

Age 0 to 3 years is your child's most important time to develop the brain. That is why it is important that they can hear well. When a child can't hear well, activity in the hearing part of the brain is cut off. This means the brain will not develop correctly and the child will not learn to listen and talk or go on to learn to read well.

## **As a parent, I can**

- Eyes open, ears on! The child should be wearing the hearing technology during all waking hours. This will give the child the chance to experience hearing sounds and listening to speech and language all day.

# DATA LOGGING



**Did you know** a hearing aid or cochlear implant can tell us how many hours a hearing device is used per day?

This is known as your child's **WEAR TIME**. Your audiologist or listening and spoken language specialist can connect a hearing device to a program that shows how much the child used their devices and what kind of listening environments they were in each day (speech, speech in noise, music, quiet, etc). This is called **DATA LOGGING**.

## **What should my child's wear time be?**

The recommended wear time is based on how many hours a child is awake during the day with the goal being *Eyes Open Ears On!*

Research shows that children who use their hearing devices full time have better language outcomes. Take a look at the chart below to see how many hours your child should be wearing their hearing technology each day.

# DATA LOGGING



Age of Child	Minimum Recommended Wear-Time (based on 80% of average awake hours)
0 - 12 months	8 hours
13 - 24 months	9 hours
2 – 5 years	10 hours
6 – 10 years	11 hours
11 years+	12 hours

## Why is data logging important?

If your child is only listening  $\frac{3}{4}$  of their waking hours, it is like your child is missing a whole season of sound in a year! If your child is having a hard time keeping his or her devices on for the full recommended amount of time per day, your audiologist or listening and spoken language specialist can help brainstorm solutions!

### References:

1. YouTube.com/HearOnVideos
2. Data Logging - Why It Helps - Jane Madell (hearinghealthmatters.org)
3. Smith, Joanna MS, LSLS Cert. AVT; Wolfe, Jace PhD, CCC-A; Stowe, Darcy MS, LSLS Cert. AVT Eyes Open, Ears On: Supporting Hearing Technology Use in Children with Hearing Loss, The Hearing Journal: June 2021 - Volume 74 - Issue 6 - p 32,34-37