

WHAT IS AN FM SYSTEM?

- A FM system is a wireless system that transmits sound directly from the sound source to the receiver.
- The sound source is a microphone worn by a parent or teacher.
- An FM system can be used with hearing aids or a cochlear implant, on the ear alone (without a hearing aid or cochlear implant), or as a soundfield/speaker system.
- It is used to provide additional help listening in environments where it is harder to hear and listen.
 - In a noisy situation
 - classrooms, restaurants, subway stations
 - A reverberant room (a room that echoes)
 - gymnasium, subway station, church
 - When distance separates the speaker from the listener
 - Walking down a street, in a car, in a stroller

TYPES OF FM SYSTEMS

Personal FM System

- The “FM transmitter” picks up the desired signal from the microphone (often the speaker’s voice) and sends the signal by radio waves to the “FM receiver.”
- The receiver (either connected to the hearing aid, cochlear implant, or by itself) receives the signal from the transmitter when the receiver and transmitter are on the same channel.
- When the sound is delivered to the child’s ear, he/she will be able to hear the desired signal as if the talker was speaking next to him/her.

Soundfield FM System

- The teacher wears a microphone and speakers are placed in the classroom.
- The teacher’s voice is able to be amplified louder and above the noise level of the classroom, throughout the whole room.
- A soundfield system will improve the listening environment for all students in the classroom.
- Soundfield FM systems were designed for children with normal hearing and no identified auditory function disorder.
- **Personal FM systems are recommended over soundfield FM system for children who have hearing loss or auditory processing disorder.**

Personal soundfield FM system

- A personal soundfield FM system is similar to the Soundfield FM system (above) except that there is only one speaker which is placed on the child's desk in school.

Parts of an FM System

- FM Transmitter
 - Includes the microphone
- FM Receiver
 - "Universal" receiver
 - Requires an adapter to attach it to the hearing aid or cochlear implant
 - "Integrated" receiver
 - Becomes a part of the hearing aid or cochlear implant and does not require an adapter
 - "Stand-alone" receiver
 - Used for children with auditory processing disorder or unilateral hearing loss, and does not have a hearing aid or cochlear implant.
- Adapter
 - Can also be referred to as an audioshoe or boot when used with a hearing aid.
 - Connects the universal receiver to the hearing aid/cochlear implant
 - For cochlear implants, there can be one to two pieces used as an adapter, and are different for each cochlear implant model.

When to use an FM System

Each environment can be assessed to determine if there is noise, echo, or distance. Then a decision can be made to either use or not use the FM system. Your audiologist will discuss the different environments your child is in.

- In a classroom.
- When the child is in a noisy environment.
 - Restaurant
 - Subway station/on the train
- When the child is in a reverberant (with echos) environment.
 - Gymnasium
 - Subway station
 - Church
- When the child is at a further distance from the speaker
 - In a car seat/in the back of a car
 - In a stroller
 - Walking down a street
 - Playing instructional sports
 - On a bike ride
- During therapy sessions if therapy is done in a noisy environment.
- Group Environments

- Several transmitters can be used while the child is in a group setting to enable the child to hear more than one teacher
- While the main speaker uses the primary transmitter, a “pass around” transmitter can be used by students which will allow the child wearing the FM to hear everyone talking.

Helpful Websites

AG Bell: www.agbell.org

American Academy of Audiology: www.audiology.org

American Speech-Language Hearing Association: www.asha.org

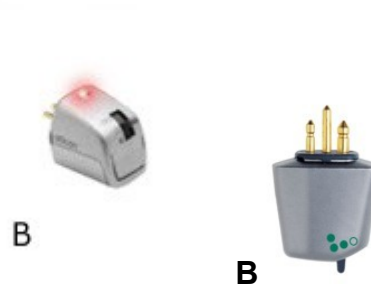
Oticon: www.otikids.oticon.com

Phonak: <http://www.phonak.com/consumer/products/fm.htm>

A=Transmitters



B= Universal Receivers



C=Integrated Receiver



D= Standalone Receiver



E= Adapter



F=Soundfield FM System

