



# Teacher's Guide

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# Introduction

## Dear teacher:

Oticon, a leading manufacturer of hearing care products since 1904, has a long tradition of serving children with hearing difficulty and supporting hearing care professionals working with children. OtiKids is a service programme designed to encircle children, parents, teachers and hearing care professionals together to promote understanding and sensitivity, and improve quality of life through better hearing.

Teachers play an important role in a child's educational and social development. That's the reason for this guide: to give teachers an introduction to how the learning environment can be optimized to help children with hearing difficulties.

For more information on OtiKids, or to find out how you can receive additional copies of this guide, contact Oticon or ask your hearing care professional.

Joel Beilin  
Director of Audiology  
Oticon A/S - Denmark



# Defining Hearing and Learning Problems

Children with hearing loss exhibit many of the same problems as children with learning disabilities e.g.:

- Lower academic achievement than their age, background or IQ scores would predict
- Inattention, frequently related to frustration and fatigue

A pupil may exhibit any or all of the following signs of hearing problems:

- Inappropriate responses to questions
- Watching other pupils to see what they are doing
- Articulation problems - speech difficulties
- Fatigue especially at the end of the day
- Academic failure
- Poor self-concept
- Day-dreaming
- Apparent laziness

If a pupil exhibits any of these signs, do not assume learning or behaviour problems. It is essential and easy to rule out hearing loss. If a hearing loss is suspected, the classroom teacher should:

- Contact the parents regarding any history of hearing loss or ear infections, and get permission for further actions.
- Inform the appropriate professional in your school system and arrange for a hearing screening if the pupil has not had this test.

If normal hearing is confirmed, further testing may be necessary to evaluate learning abilities, listening skills or behavioural issues.

## What is a hearing loss?

A hearing loss occurs when there is maldevelopment, injury, infection or degeneration of the hearing system. A hearing loss can be partial or total, temporary or permanent, in one ear or both. Even a mild, temporary hearing loss e.g. caused by an ear infection, can significantly affect speech and language development, learning and socialisation.

## What are the major types of hearing loss?

The three types of hearing loss are described below. They can each be experienced in varying degrees (mild, moderate, severe and profound).

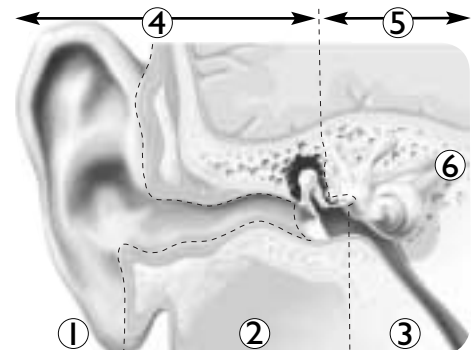
- **Conductive hearing loss:** results from an interference or blockage of the outer or middle ear structures. Common causes are maldevelopment or disease of the middle ear, injury and even simple blockage of the ear canal due to earwax or chronic middle ear infections associated with a cold. In most cases, this type of hearing loss can be corrected by medical and/or surgical treatment.
- **Sensorineural hearing loss:** results from malfunction of the inner ear (cochlea) and auditory nerve. Common causes are genetic defects, infections, viral injury and/or degeneration of the inner ear and auditory nerve pathway. The hearing loss usually cannot be reversed by medical or surgical means, and is therefore permanent.

- **Mixed hearing loss:** a combination of conductive and sensorineural hearing losses.

A hearing loss can be unilateral (in one ear) or bilateral (in both ears). And the degree of loss may vary for each ear. A mild and unilateral loss will often pass unnoticed.

*The hearing system consists of the outer ear, the middle ear, the inner ear (cochlea), the auditory nerve, the central nervous system pathways and the auditory centre in the brain*

1. Outer Ear
2. Middle Ear
3. Inner Ear
4. Conductive Loss
5. Sensorineural Loss
6. Auditory Nerve



## Helping Children with a Hearing Loss

Teachers have a tremendous impact on their pupils' learning, self-image and social adjustment. Working with pupils who have a hearing loss requires a team approach to determine the individual needs of each pupil and to develop an appropriate educational plan. Members of the team may include: the parents, classroom teacher, advisor on hearing-impaired children, itinerant resource teacher, speech and language therapist, educational audiologist and learning support teacher.

Essential components of a successful programme of support are:

- Developing a clear delineation of staff responsibilities.
- Continually observing and monitoring progress.
- Providing in-service training to the classroom teacher regarding hearing loss, use of personal hearing aids and other assistive listening devices such as FM.
- Designating a link person, usually a teacher of the hearing impaired, to co-ordinate support.

### Self-image and social adjustment

Pupils may perceive themselves as different if they have hearing problems or difficulty communicating with others or if they wear hearing aids and/or utilize an FM system (wireless communication). You can help by taking an active part in their life. This can be done by:

- Developing a programme that includes coping strategies.
- Enabling the pupil to accept how the hearing impairment makes him/her different, while emphasizing that hearing loss is not his/her only descriptive characteristic.
- Identifying attributes that describe the pupil as a valued individual.
- Helping the pupil understand his/her own hearing loss (when age appropriate). Other classmates will benefit from this knowledge as well.

Reduced communication ability may interfere with development of age appropriate social skills. You can help by:

- Developing activities to foster inclusion. A mainstreamed pupil needs to be able to interact socially with his normal hearing peers.
- Creating situations that encourage taking chances. A pupil may be unsure of himself and unwilling to take risks.



# Hearing Instruments in the Classroom

The primary function of amplification in the classroom is to provide access to speech information and facilitate learning. In most cases, hearing aids will benefit the child with a hearing loss, but in specific listening situations, such as in very noisy classrooms, hearing aids alone may not be enough.

FM systems work with a child's hearing aids to enhance the speaker's voice for better speech understanding. FM systems consist of

- a) a microphone/transmitter worn by the teacher and
  - b) a receiver that hooks on to the hearing aid worn by the child.
- The transmitter and receiver have a wireless communication.

The teacher's microphone is usually clipped to their clothing and worn about six inches below the mouth. The child can sit anywhere in the classroom and hear the teacher's voice as if it were only six inches away. By reducing the distance the teacher's voice has to travel, the effects of background noise and echo are dramatically reduced. Children and teachers in classrooms using FM have reported less fatigue

at the end of the day, as the teacher does not have to raise his/her voice to be heard and the child hears better with less strain.

In general, children should be encouraged to use their system as often as possible, as FM can help the child to interact in more social situations in and out of the classroom.

## Checking hearing instruments

It is of utmost importance for the hearing impaired child that the instruments are working properly. Therefore a daily check is recommended.

### • Visual inspection:

Check for dents, cracks in the hearing aid case and cracked tubing, wax in earmould, moisture in tubing, corrosion in battery compartment.

### • Listening check:

Insert tip of sound hook tightly into end of stetoclip\*). Turn the instrument on and while speaking into the microphone, rotate the volume control (if the instrument has one) while listening.

### • Battery check:

Check and replace batteries if necessary.

## Checking FM systems

### • Visual inspection:

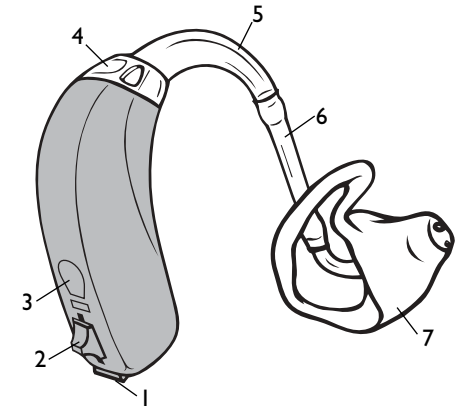
Check cords and hearing instrument. Turn the power on and be sure the LOW Battery and NO FM indicators are not lit. If the NO FM indicator is lit, check that the batteries in the transmitter are in place and the unit is switched ON.

### • Listening check:

Listen to the system and ensure normal function. For further assistance contact your hearing care professional to connect you to the correct FM consultant or training. The training may be with the itinerant teacher of the hearing impaired or the educational audiologist.

\*) *Stetoclip* is a device that enables you to make a listening check of a hearing instrument

1. Battery compartment
2. Function switch
3. Cover for programming plug
4. Microphone opening
5. Sound hook
6. Plastic sound tube
7. Earmould



## Classroom Tips

- When addressing the pupil say his/her name first and identify the topic you are covering.
- Seat the pupil for optimal listening and visual cues within the classroom. Ideally, this should be with the pupil's back to the window, seated one third of the distance of the room from the teacher, not in the front row directly beneath the teacher.
- Be aware of possible misunderstanding - avoid idioms, sarcasm, slang (if you use them, explain).
- Sometimes ask other pupils if they have heard or understood rather than always focusing on the hearing-impaired child.
- Speak in an ordinary tone of voice, without exaggerated lip movements, and at a normal rate of speaking.
- Make sure your lips are clearly visible. Face the class, not the blackboard, when speaking.
- Make sure that the room does not have bright lights shining directly in the child's face. Back-lighting is ideal.
- Be aware that the pupil is unlikely to be able to lip read or fully hear during a film/slide presentation. Either use a captioned film or provide information (transcript) in advance.
- Institute a buddy system - such as a classroom helper or official notetaker.
- Provide an opportunity for the pupil to share information with the class about the hearing aid and/or FM system and how it works.
- Request in-service instruction to learn how to check your pupil's hearing aids; keep extra batteries on hand.
- Be aware that every child is an individual with his/her own strengths and limitations. Thus it is important not to have a preconceived notion of function based on the degree of the hearing loss.

- Remember always to speak naturally and clearly. If using exaggerated mouth movements, extremely fast or slow rates of speaking or overly loud speech, the pupils may have difficulty understanding.
- Remember always to make a recognizable transition when moving on to a new subject.
- Consider passing around a written copy of the day's or week's assignment for all pupils, or writing assignments on the board.
- Make sure always to make lip reading possible. Thus be careful not to chew gum or eat while talking to the pupils.



## How Listener Friendly is Your Classroom?

A good listening environment is crucial to successful classroom learning. Many factors affect the listening environment. Classrooms are typically noisy and reverberant, making listening difficult for pupils with normal hearing as well as those with hearing loss.

Check your classroom, using the following questions. If you discover that you have a poor listening environment (when no is answered to the following questions), follow the provided tips.

### Classroom checklist and useful tips

#### 1. Noise outside the classroom:

- |   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| • Is your classroom in a quiet area away from external noise sources (traffic, construction, playground, cafeteria, gymnasium, busy hallways, shops, etc.)? | <input type="checkbox"/> | <input type="checkbox"/> |

*Tip: Reduce external noise as much as possible by evaluating your classroom location. For a pupil with a hearing loss, choose a classroom located away from traffic and noisy areas. Avoid areas where groups of children congregate. Even simple things like shrubbery just outside the classroom windows can help reduce external noise.*

#### 2. Noise inside the classroom:

- |   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| • Do you have a quiet classroom without noise sources, such as fans, heating and cooling systems, etc.? | <input type="checkbox"/> | <input type="checkbox"/> |
| • Is the floor carpeted?  | <input type="checkbox"/> | <input type="checkbox"/> |
| • Do the windows have curtains?   | <input type="checkbox"/> | <input type="checkbox"/> |
| • Do chairs, desks and tables have rubber stops to cut down on noise?                                   | <input type="checkbox"/> | <input type="checkbox"/> |

*Tip: Evaluate and monitor internal classroom noises on an ongoing basis. Air conditioners, heating systems, computers, projectors and light fixtures can all contribute to internal background noise, making hearing more difficult. Most of us simply “tune out” these sounds unconsciously. But for a child with hearing instruments it is not always that easy. Have equipment serviced regularly to eliminate noise created by malfunction. And look for areas where adjustments can be made to improve classroom acoustics:*

- Acoustically-treated low ceilings
- Carpeting (floors, and even parts of walls)
- Well-fitting doors
- Thick curtains; acoustic panelling
- Use of absorptive materials on hard reflective surfaces (cork bulletin boards etc.)
- Windows and doors closed during instruction

#### 3. Listening skills:

- |   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| • Do you evaluate listening skills and provide programs to strengthen these skills? | <input type="checkbox"/> | <input type="checkbox"/> |
| • Do you make listening fun?  | <input type="checkbox"/> | <input type="checkbox"/> |

*Tip: Listening skills can be evaluated in many ways and they can be fun. Contact the appropriate staff person in your school regarding the availability of pupil observation forms. Use game-like activities that make your pupils want to listen.*

#### 4. Teacher's voice:

- |   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| • Are you projecting your voice so that you can be heard in the back of the room? | <input type="checkbox"/> | <input type="checkbox"/> |

*Tip: Check with pupils periodically to be certain that they can hear you well. Speak clearly, but do not yell. Even though a child may be wearing hearing aids, normal hearing cannot be achieved. Seating hard-of-hearing pupils near the front of the class should strongly be considered, unless FM assistive listening equipment is being used.*

**5. Teacher's language:**

**Yes**      **No**

- When you speak, do you use clear, concise language?

*Tip: Use age appropriate vocabulary and sentence structure. If new words are introduced, explain them. Avoid excessive use of irony, figurative language and idioms. A child with a hearing impairment is often concentrating on the literal translation. If the message is too complicated, pupils won't listen or learn.*

**6. Communication:**

**Yes**      **No**

- Do you ensure that the pupils understand directions, both oral and written?
- Do you use visual aids (video, overheads, etc.)?

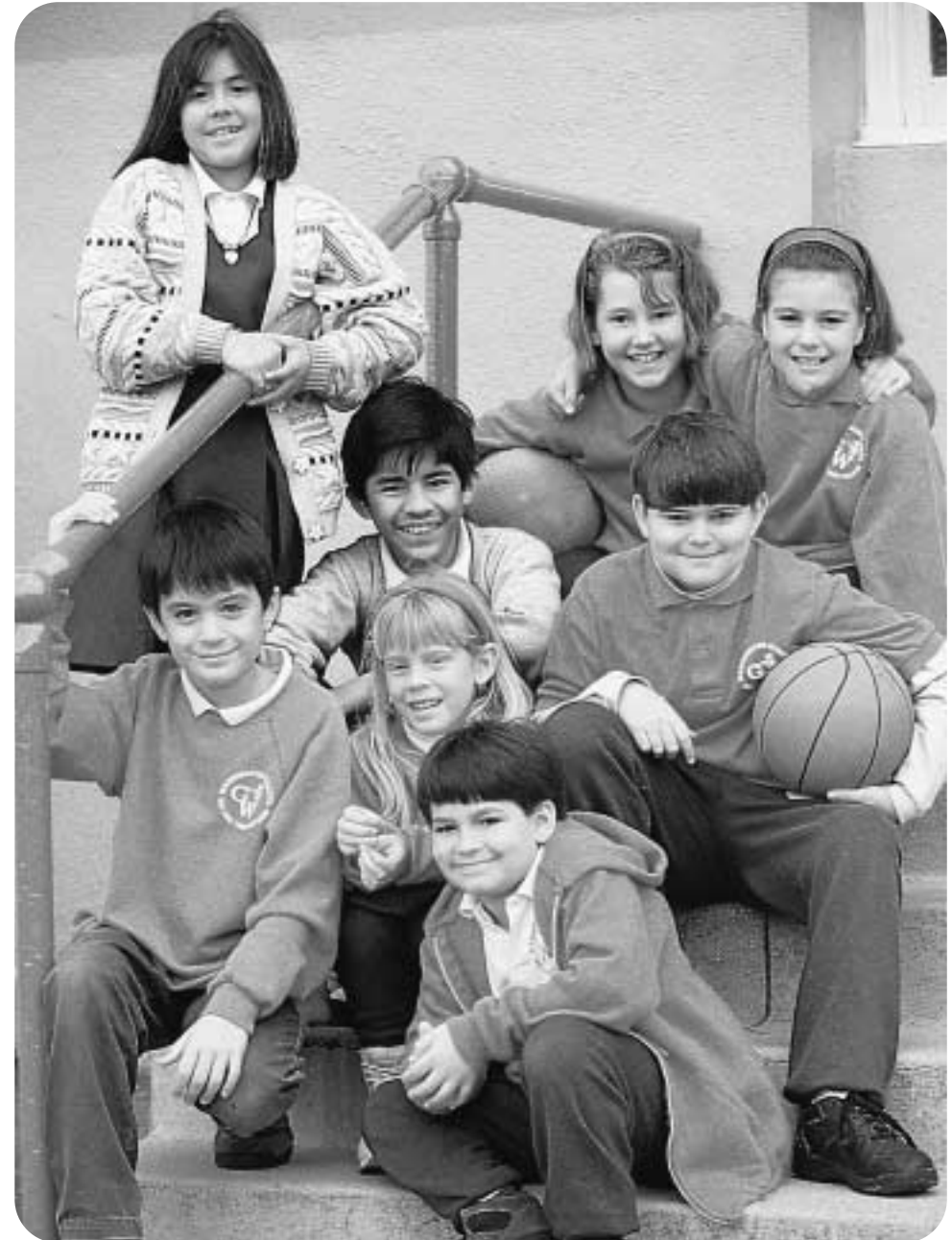
*Tip: Question pupils regularly regarding their understanding of written and oral directions. Do not assume that these are understood. Ask the pupil to repeat your instructions, rather than simply asking him/her if he/she heard you. Take care not to focus or single out the hearing-impaired pupil too much.*

**7. Hearing tactics:**

**Yes**      **No**

- Is there sufficient light in the room to aid oral communication with lip reading?
- Do you try to talk face-to-face with your pupils?

*Tip: A pupil with any type of hearing loss should face away from windows to avoid light shining in his/her face. The face of the speaker should be in good light. Speaking face-to-face enables the listener to utilize visual cues such as lip reading and facial expressions. Speak in a normal tone of voice, without exaggerated lip movements. You should also model good listening habits by really listening to what your pupils are saying and showing interest. Schedule specific times for sharing information and give your full attention.*



## Troubleshooting: Hearing Instruments and FM Systems

### Troubleshooting hearing instruments

**Problem:** No sound

**Solution:**

- Insert new battery
- Check that the switch is in the M-position
- Check for moisture in the tubing, and clean earmould

**Problem:** Whistling when instruments are worn by the pupil

**Solution:**

- Reduce volume (temporary solution)
- Check for moisture in the tubing, and clean earmould



- Replace the tube
- Have ear canal examined by the doctor, audiologist, or advisor on hearing-impaired children
- A new earmould may be required

### Troubleshooting FM systems:

**Problem:** No sound from receiver

**Solution:**

- Check that the receiver is properly connected and turned on
- Turn up volume controls
- Replace batteries

**Problem:** No FM Reception

**Solution:**

- Make sure the microphone or antenna cord is plugged into the transmitter
- Replace batteries in transmitter
- Check that the receiver is properly connected and not broken

Hearing aids and FM systems should be checked daily to ensure normal function. Classroom teachers may require in-service training and support from an Educational Audiologist, a Teacher

of the Hearing-Impaired, a Speech and Language Therapist or a manufacturer's representative.

### Recommended equipment to have in the classroom:

- hearing aid stetoclip for listening check
- air blower to remove moisture and wax from earmould and tubing
- extra supplies (batteries, supplies for FM systems: cords, receiver buttons, teacher microphones, etc.)

Photos: Oticon A/S and Tripod School, California, USA







# People first



We believe that it takes more than technology and audiology to create the best hearing instruments. That's why we put the individual needs and wishes of hearing impaired people first in our development of new hearing care solutions.