



Alaska Early Hearing Detection and Intervention Program

WHAT IS HEARING LOSS?

WHY DID THIS HAPPEN TO MY INFANT/CHILD?

WHY TEST MY INFANT/CHILD NOW?

WHAT ARE THE TEST(S) THAT WILL CHECK MY INFANT/CHILD'S HEARING?

WHO WILL PERFORM THE TEST(S)?

WHAT HAPPENS IF THE TESTS SHOW MY INFANT/CHILD DEFINITELY HAS A HEARING LOSS?

WHERE CAN I GET MORE INFORMATION ABOUT HEARING LOSS TO HELP MY INFANT/CHILD?

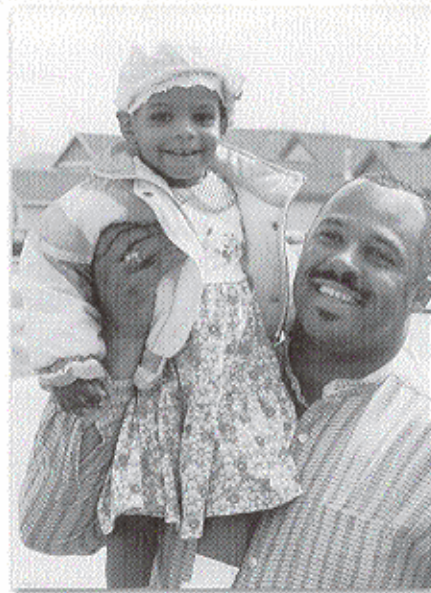
HOW DO I KNOW IF MY INFANT/CHILD'S HEARING AND SPEECH IS DEVELOPING NORMALLY?

WHAT DOES THE INSIDE OF AN EAR LOOK LIKE?

What is hearing loss?

There are different types of hearing loss:

1. Conductive
 2. Sensorineural
 3. Mixed
1. Conductive hearing loss is the result of something affecting the outer or middle ear, such as ear infections associated with fluid in the middle ear space. Middle ear infections are the second most common reason infants/children see healthcare providers. Any time infants/children have middle ear infections with fluid in their ears, they have a hearing loss that goes along with it. Other common causes of conductive hearing loss include extra wax, things not normally found in the ear, or swelling of the ear canal. In most cases, conductive hearing losses can be treated either medically or surgically, and are not permanent.
 2. Sensorineural hearing loss is permanent and is the result of something affecting the inner ear, or the nerve that deals with hearing called the auditory nerve. There are many different causes of hearing loss, including congenital (at birth) infections, medications, noise, and genetics. In 50 percent of congenital hearing loss cases, a cause is never found. Sensorineural hearing loss can also develop later in life from different causes, such as listening to lots of loud noise.
 3. Mixed hearing losses are combinations of sensorineural and conductive hearing losses.



Why did this happen to my infant/child?

There are many causes of hearing loss at birth. Some hearing loss, such as that caused by ear infections, is temporary and can be easily corrected. Other hearing loss is permanent and may be more serious. Hearing loss in newborns can be caused by an infection during pregnancy or by medical complications during the infant's first hours of life. Hearing loss may also be the result of family history. In some cases, the cause of an infant/child's hearing loss may be easy to find. In other cases, however, there may be no obvious reason for the hearing loss, and you may never know the cause of your infant/child's hearing loss. Below is a list of risk factors, or things that may be associated with an infant/child's hearing loss:

- Family history of childhood hearing loss
- Infection during pregnancy (rubella, cytomegalovirus/CMV, syphilis, herpes, or toxoplasmosis)
- Birth defects of the head and neck (for example, deformed outer ear)
- Low birth weight (under 3.3 pounds)
- Jaundice or yellowing of the skin at birth (Hyperbilirubinemia)
- Bacterial meningitis (illness)
- Medicines that affect the ear (ototoxic)
- Respirator (mechanical ventilation) for more than five days
- Apgar scores of 0 to 4 at one minute or 0 to 6 at five minutes. (This score is given at the time of birth to figure out the newborn's condition. The score comes from evaluating the newborn's heart rate, respiratory effort, muscle tone, reflex irritability, and color. A score of 0 to 2 is related on each of the five items, the highest possible score being 10.)



Why test my infant/child now?

It is very important to diagnose the right kind of hearing loss in children as early as possible so that amplification technology (for example, hearing aids) can be used to get sound to the developing brain as soon as possible. Children who are diagnosed before six months of age and fit-

ted with hearing aids or cochlear implants, along with vigorous speech, language, and aural rehabilitation, develop close to, or at the same rate, as other infants/children their own age.

Hearing loss is the most common birth defect in the United States.

Every day, approximately 33 babies are born with permanent hearing loss.

Affecting an estimated 30-40 babies per year in Alaska.

Risk factor(s) can often be the reason(s) for hearing loss in babies.

If babies are not tested at birth, hearing loss is often not identified until 18 months to three years of age.

Not having a special test done can make it hard to tell if your baby has a hearing loss.

Get your baby enrolled in early intervention if he/she is found to have a hearing loss.

Lifelong delays in language, speech, cognitive, and academic development can result if hearing loss is left undetected.

Options are many for ensuring that babies develop normal language skills and reach their full potential.

Sooner a hearing loss is identified, the sooner you and your baby can get appropriate education and services.

Sooner your baby starts receiving language, the better for his/her development.

★ **The key is early diagnosis,
early intervention,
and early brain development.**



What are the test(s) that will check my infant/child's hearing?

Children of any age can have their hearing tested. Children even minutes old can be screened for hearing loss. Newborns can be tested by several methods:

1. Automated auditory brainstem response test
2. Evoked otoacoustic emissions test

Both methods are computerized, will not hurt your infant, and take only a short time. The purpose is to check babies early in life to determine whether or not they have, or are at risk for, developing a hearing loss.

If your baby refers, or does not pass, the screening in the nursery, he/she will be referred onto an audiologist, or hearing loss specialist, for more testing. This is called a diag-

nostic evaluation, uses more complicated equipment, and will determine whether or not your infant/child definitely has a hearing loss.

Usually the audiologist will try to get responses/replies to sounds through behavioral (action) testing. If the findings of these earlier tests are not clear, the audiologist will likely suggest that an ABR/BAER test be done to rule out hearing loss. Currently in Alaska, three hospitals can perform sedated (asleep) BAERs. The three hospitals that can perform sedated BAERs are located in Anchorage: 1) Providence Alaska Medical Center, 2) Alaska Native Medical Center, and 3) Alaska Regional Hospital. (See contact information below for pediatric audiologists that perform sedated and unsedated BAERs.)

Audiologic Diagnostic Evaluation Providers In Alaska

✱ = Non-sedated diagnostic evaluations ▲ = Sedated diagnostic evaluations

ANCHORAGE

▲ **Alaska Native Medical Center**

Linda Erb, David Brueggemann
Pediatric Audiologists
4315 Diplomacy Drive, Anchorage, AK 99508
(907) 729-1422

▲ **Alaska Regional Hospital**

Carol Ford, Nancy Johnston
Electroneurodiagnostic Technologists
2801 Debarr Rd., EEG Department, 5th Floor
Anchorage, AK 99508
(907) 264-1510

Audiology Associates

Tom McCarty
Pediatric Audiologist
1200 Airport Heights, Anchorage, AK 99508
(907) 278-6400

▲ **Headquarters 3rd Medical**

Capt. Bridget McMullen
Pediatric Audiologist
24800 Hospital Drive, Elmendorf AFB, AK 99506-3700
(907) 580-5804

Northern Hearing Services, Inc.

Joyce Sexton, Jess Buri, Karen Pastell, Alyson Kattuzowski
Pediatric Audiologists
4200 Lake Otis Parkway, Ste. 302, Anchorage, AK 99508
(907) 561-1326

▲ **Providence Hospital Audiology**

Charlene Matesich
Pediatric Audiologist
3300 Providence Drive, Anchorage, AK 99519
(907) 261-3650

BETHEL

✱ **Yukon Kuskokwim Delta Hospital**

Mike Comerford
Pediatric Audiologist
PO Box 287, Bethel, AK 99559
(907) 543-6473

DILLINGHAM

✱ **Bristol Bay Native Corporation**

Deborah Burton
Pediatric Audiologist
PO Box 130, Dillingham, AK 99508
(907) 478-5201

FAIRBANKS

Bassett Army Hospital

Capt. Melissa Lecese
100 Gaffney Road, #7400, Fort Wainwright, AK 99703
(907) 353-5212

✱ **Northern Audiology & Hearing, ENT Clinic**

Art Larson
Pediatric Audiologist
1919 Lathrop, Suite 207, Fairbanks, AK 99701-5995
(907) 456-7768

HOMER

Susan Bunting
Pediatric Audiologist
PO Box 771, Homer, AK 99603
(907) 235-2381

JUNEAU

✱ **Northland Audiology**

Alver Rongstad
Pediatric Audiologist
PO Box 32257, Juneau, AK 99803
(907) 789-6780

KENAI PENINSULA

✱ **Peninsula Hearing Services**

Karen Martin
Pediatric Audiologist
167 Warehouse Avenue, Soldotna, AK 99609
(907) 262-3224

NOME/NORTON SOUND

✱ **Norton Sound Regional Hospital**

Dan Knudsen, Phil Hofstetter
Pediatric Audiologists
PO Box 966, Nome, AK 99762
(907) 443-3297

SITKA

SEARHC/Mt. Edgecumbe Hospital

Kala Stone
Pediatric Audiologist
222 Tongass Drive, Sitka, AK 99835
(907) 966-8379

Providers were identified through a survey. Every effort was made to provide accurate information, however, phone numbers and provider information may change. The Alaska Early Hearing Detection & Intervention Program does not specifically endorse or recommend any providers.

Who will perform the test(s)?

An audiologist is a hearing loss specialist who will perform the test(s) on your infant/child to determine if he/she has a hearing loss. They are highly trained and licensed professionals who specialize in the testing, evaluation, and management of hearing loss. The audiologist does tests to figure out the amount of hearing loss your child has, what type of hearing loss it is, and what type of help is needed.

Be sure that your audiologist is experienced in the testing and management of infants and young children. This is important because testing methods for infants and young children are different than those used for older children and adults who can talk and answer questions. (See contact information below for list of pediatric audiologists.)

PEDIATRIC AUDIOLOGISTS IN ALASKA

ANCHORAGE

Joyce Sexton, Jess Buri, Karen Pastell, Alyson Kantorowski
Northern Hearing Services, Inc.
4200 Lake Otis Parkway, Ste. 302, Anchorage, AK 99508
(907) 561-1326

Charlene Matesich
Providence Hospital Audiology
3300 Providence Drive, Anchorage, AK 99519
(907) 261-3650

Tom McCarty
Audiology Associates
1200 Airport Heights, Anchorage, AK 99508
(907) 278-6400

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4315 Diplomacy Drive, Anchorage, AK 99508
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Northland Audiology
PO Box 32257, Juneau, AK 99803
(907) 789-6780

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Peninsula Hearing Services
167 Warehouse Avenue, Soldotna, AK 99669
(907) 262-3224

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What happens if the tests show my infant/child definitely has a hearing loss?

If the audiologist (hearing loss specialist) determines your child has a hearing loss, he/she will help you in getting the right intervention. There are many options for communication and education. Audiologists will provide you with information about these and refer you onto early intervention specialists. Your audiologist will also provide information about assistive listening devices (ALDs). ALDs are amplification systems that help people hear better in places where it is hard to hear. The basic function of an ALD is to increase wanted sounds and decrease sounds that are not wanted.

It is important to get help for your baby as soon as possible. The Alaska Early Intervention/Infant Learning Programs

(EI/ILP) are available for families with infants and toddlers (birth to age three) with special needs. EI/ILP will assist you and your baby in getting the follow up care recommended by your audiologist. Call an EI/ILP office near you to schedule an appointment (see contact list below).

The early intervention that you will receive through working with EI/ILP can help you understand hearing loss and gain confidence as a parent of a deaf or hard of hearing child. It also will guide you in identifying your infant/child's strengths and needs, and help him/her develop important language skills necessary to become part of the larger community.

EI/ILP PROGRAMS IN YOUR COMMUNITY

ANCHORAGE

Programs for Infants & Children, Inc. (PIC)
561-8060

Alaska Early Intervention Hearing Resource
(AEIHR)
742-4273

Vision Impairment Services
For Infants & Toddlers (VISIT)
562-7372

BARROW

North Slope Borough School District
Infant Learning Program
852-9676

BETHEL

Community Services Family
Infant Toddler Program
543-3690

CHUGIAK

Family Outreach Center Understanding
Special Needs, Inc. (FOCUS)
688-0282

COPPER CENTER

Copper River Basin Infant Learning Program
822-5655

CORDOVA

Prince William Sound Infant Learning Program
424-3425

DILLINGHAM

Bristol Bay Area Health Corporation Infant
Learning Program
842-3398

FAIRBANKS

Alaska Center for Children & Adults, Inc.
456-4003

Tanana Chiefs Conference
Infant Learning Program
452-8251

HOMER

Children's Services Birth 2 Three
235-6044

HAINES

REACH Infant Learning Program
766-2750

JUNEAU

REACH Infant Learning Program
586-8228

KETCHIKAN

Community Connections
Early Learning Program
225-7825

KODIAK

KANA Kodiak Infant Learning Program
486-4643

KOTZEBUE

Northwest Arctic Borough School District Early
Learning and Family Program
442-3472

NOME

Norton Sound Health Corporation
Infant Learning Program
443-3298

PETERSBURG

REACH Infant Learning Program
772-3488

SEWARD

SeaView Community Services
224-5257

SITKA

Center for Community Early Learning Program
747-6960

SOLDOTNA

Frontier Community Services
Early Intervention
262-3144

UNALASKA

Frontier Community Services
Early Intervention
262-3144

VALDEZ

Infant Learning Program
835-4323

WASILLA

Mat-Su Services for Children
& Adults Infant Learning Program
352-1200

STATE OF ALASKA

Dept. Health & Social Services
Early Intervention/Infant Learning Program
(907) 269-3400
<http://www.hss.state.ak.us/dph/mcfh/>

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Where can I get more information about hearing loss to help my infant/child?

WEBSITES

National Center for Hearing Assessment and Management (NCHAM)

Voice: (435) 797-3584

Email: mail@infanthearing.org

Internet: www.infanthearing.org

Description: The goal of the National Center for Hearing Assessment and Management (NCHAM - pronounced "en-cham") at Utah State University is to ensure that all infants (newborns) and toddlers with hearing loss are identified as early as possible and provided with timely and appropriate audiological, educational, and medical intervention. NCHAM receives funding from federal, state, and private sources to conduct research, develop training materials, provide training and technical assistance, and disseminate information about early identification and management of hearing loss.



Alexander Graham Bell Association for the Deaf and Hard of Hearing (A.G. Bell)

Voice: (202) 337-5220

TTY: (202) 337-5221

Toll-free: 1-800-HEAR-KID (1-800-432-7543)

Email: info@agbell.org

Internet: www.agbell.org

Description: A nonprofit, membership-based information center on hearing loss. Focuses specifically on children with hearing loss, providing ongoing support and advocacy for parents, professionals, and other interested parties. Information available to parents includes publications, funding sources, pamphlets, conferences, and scholarship program information.

American Society for Deaf Children (ASDC)

Voice: (717) 334-7922

TTY: (717) 334-7922

Toll-free: 1-800-942-ASDC (1-800-942-2732)

Email: ASDC1@aol.com

Internet: www.deafchildren.org

Description: A nonprofit organization designed to educate, empower, and support parents and families of children who are deaf or hard-of-hearing. Helps families find meaningful communication options, particularly through the use of sign language, in their home, school, and community.

Boystown National Research Hospital

Voice: (402) 498-6511

TTY: (402) 498-6543

Toll-free: 1-800-282-6657

Email: moeller@boystown.org

Internet: www.boystownhospital.org

Description: A nonprofit hospital that is internationally recognized for research and treatment of childhood deafness and communication disorders. Programs include the Center for Audiology and Vestibular Services, the Center for Childhood Deafness, Language, and Learning, and the Center for Medical/Surgical Services. Produces videotapes designed to help families learn signs and read effectively with young children who are deaf.

For more information about services in Alaska contact:
Alaska Department of Health and Social Services
Division of Public Health
Section of Maternal, Child and Family Health
Alaska Early Hearing Detection & Intervention Program
<http://www.hss.state.ak.us/dph/mcfh>
(907) 269-3400

How do I know if my infant/child's hearing and speech is developing normally?

Hearing loss is invisible, and the signs of a hearing loss are not obvious in young children. The following are developmental guidelines for children with normal hearing. If your infant/child is not reaching these milestones, make sure they see their healthcare provider or audiologist to have their hearing tested.

0-3 months

- Jumps at a sudden, loud noise
- Calms down when you speak

3-6 months

- Turns head or moves eyes to find your voice
- Plays at making noises and sounds

6-10 months

- Reacts to hearing his/her name
- Begins to understand easy words like "no" and "bye-bye"

10-15 months

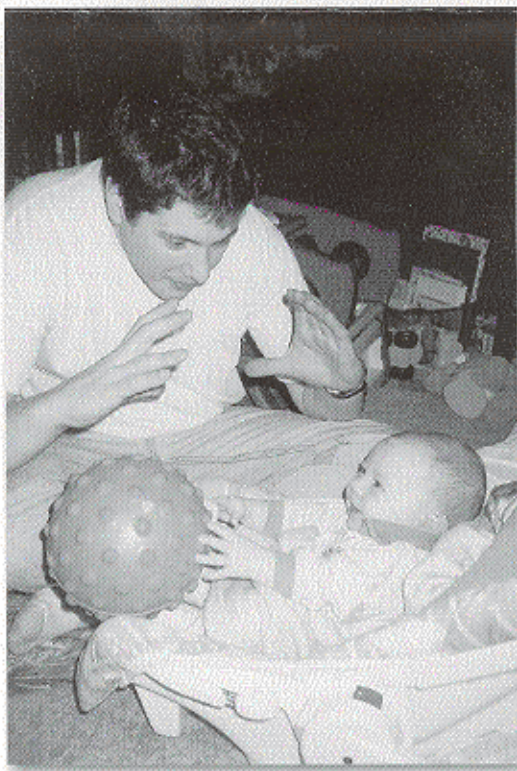
- Repeats simple words and sounds you make
- Uses two to three words other than "ma-ma" and "da-da"

18 months

- Follows simple spoken directions
- Uses seven or more true words

24 months

- Understands when you call from another room
- Points to body parts when asked



What does the inside of an ear look like?

The hearing pathway may be described as follows:

1. Noises make sound waves in the air.
2. These waves pass through the outer ear canal to the eardrum (tympanic membrane) which moves with each sound.
3. The eardrum moves 3 tiny bones - a) hammer (malleus), b) anvil (incus), c) stirrup (stapes) – in the middle ear.
4. The movement of these bones changes the pressure on tiny cells within the cochlea of the inner ear.
5. These sensory cells send impulses along a nerve pathway to the hearing center of the brain.

