

eHDI WYOMING
Wyoming Early Hearing Detection & Intervention



WYOMING
EARLY
HEARING
DETECTION &
INTERVENTION
(EHDI)

WYOMING MIDWIFE
NEWBORN HEARING SCREENING
MANUAL

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Introduction

The newborn hearing screening work you do is important! The Wyoming Early Hearing Detection and Intervention (EHDI) Program is excited to be working with you as a midwife conducting newborn hearing screenings.

The Wyoming EHDI Program works to ensure that infants, toddlers, and preschoolers with hearing loss are identified as early as possible. When hearing loss is found early, the child and his/her family are given the opportunity to receive timely and appropriate intervention needed in order for the child to develop to his/her full potential. The Wyoming EHDI Program works to provide hearing screenings, audiological evaluations, and follow-up for Wyoming's newborns.

This manual is designed to provide you with the basics on newborn hearing screening in Wyoming. If at any time you should have any questions about the Wyoming EHDI Program or newborn hearing screening, please feel free to contact the Wyoming EHDI office. We can be reached by phone at **307-721-6212** or **307-760-6625** and by email at nancy.pajak@wyo.gov.

The Wyoming EHDI staff would like to thank you for your dedication to newborn hearing screening. Your work ensures that Wyoming newborns with hearing loss are identified as early as possible and receive the critically needed follow-up.

Thank you for all you do for Wyoming babies!

Hearing Screening Legislation

The State of Wyoming recognizes how important it is to identify children with hearing loss as early as possible. In 1999, the Wyoming Legislature passed “Newborn Hearing Screening” (Wyoming Statute 35-4-801). The legislation requires that all newborn’s hearing must be screened (unless a parent waives the screening) in accordance with accepted medical practices and in the manner prescribed by the Wyoming Department of Health. Hearing screenings must be performed by trained personnel. Hearing screening programs must be performed under the supervision of a state-approved audiology consultant; and the hospitals or midwives must notify parents and primary care physicians, in writing, if a newborn fails the hearing screening. Newborns failing the first hearing screening must be rescreened within **7-10** days of the initial screening. Diagnostic audiological assessment is the critical “next step” for infants who fail one or both ears following the second screening.

To view the Wyoming statute, go to <http://legisweb.state.wy.us>.

Why Hearing Screening is Important

Most children hear and listen to sounds from birth. They learn to talk by imitating the sounds around them and the voices of their parents and caregivers. But, that's not true for all children. In fact, 2-3 out of every 1,000 children in the United States are born with hearing loss. Even more children will develop hearing loss during their childhood; this is referred to as Late Onset Hearing Loss (LOHL). It is crucial to detect hearing loss as early as possible.

If a hearing loss is left undetected in an infant, it can negatively impact speech and language acquisition, academic achievement, and social and emotional development. If the hearing loss is detected and an appropriate Early Intervention Plan is developed and followed, these negative impacts can be diminished and even eliminated.

Studies have shown that children who are identified with hearing loss and who receive appropriate Early Intervention before they are six months of age are more likely to enter school with age appropriate skills as compared to those children whose hearing loss is identified after six months of age. It is for this reason that the Wyoming EHDI Program exists and is working together with midwives, Wyoming birthing hospitals and many others (i.e. audiologists, Early Intervention Programs) to make sure:

Every child has their hearing screening (initial screening and rescreening) completed by **1** month of age.

Diagnostic Hearing Evaluations are completed by **3** months of age, if necessary.

Early Intervention Plans are in place by **6** months of age, if necessary.

Hearing Screening and Rescreening



Detecting hearing loss as early as possible is very important. In Wyoming, it is mandated that all infants receive a hearing screening, unless the parent(s) object to or waive the screening. The Wyoming EHDI Program's goal is to ensure that all children in Wyoming have their hearing screening completed by **1** month of age; if necessary, a hearing evaluation completed by **3** months of age; and an Early Intervention Plan in place by **6** months of age, if necessary. Remember "**1,3,6**"!

To help ensure that children with hearing loss are identified early and referred to the proper Early Intervention services, we ask that you follow these guidelines when screening newborns' hearing:

1. Screen all infants (unless parent(s) have objected and waived, in writing, the screening).
2. Hearing screening must occur within 2 weeks of birth.
3. Wait at least 24 hours for the hearing screening, to allow ear canal debris to clear.
4. Make sure both ears are screened. The Joint Committee on Infant Hearing (JCIH) requires both ears to pass on the same screening attempt in order for the baby's results to be considered a pass. For example, if on a first screening attempt the child "refers" (fails) in the left ear and "passes" on the right ear and opposite results are obtained during a second screening attempt (e.g. the left ear passes and the right ear fails) the baby is considered an overall "fail" as a result of those two screening attempts. However, if a third screening is conducted and the results are "pass" for the left and "pass" for the right, then the baby is overall considered a "pass".
5. **Do not** exceed three (3) **initial** hearing screening attempts. If the newborn has failed their initial hearing screening after 3 screenings attempts, do NOT screen anymore; you run the risk of obtaining a false negative.

If an infant fails their initial screening(s), please make sure to follow the guidelines below regarding the rescreening:

The midwife should notify the parent(s), in writing, of the failed screening.

- A rescreening appointment should be made with the parent(s). This appointment date and time should be given to the parent(s), in writing.
- Rescreening should be performed within **7-10** days after the initial screening.
- If the baby passes the rescreening on both ears, please give the results to the parent and primary care physician, in writing. You may inform the parent(s) of hearing, vision, and

developmental screenings available to them at no cost at Child Development Centers in their home communities.

- Refer infants who fail their rescreening to the Wyoming EHDI Program (use the Failed Hearing Rescreening form provided in Appendix C) and fax the form to the Wyoming EHDI office 307-721-6313, immediately.
- Collect the parent(s) accurate contact information including an alternative phone number. (i.e. grandparent(s) number; work number; extended family member number.) Please include this information on the Failed Hearing Rescreening form faxed to the Wyoming EHDI office. (See Appendix C)
- Notify the primary care physician, in writing, of infants who have failed their rescreening.
- Provide the parent(s) with resources to get answers to their questions, i.e., Wyoming EHDI office 307-721-6212, www.wyomingehdi.org; Wyoming Hands and Voices, 307-780-6476, www.wyhandsandvoices.org.

Newborn Hearing Screening Protocol

Before the birth

Prior to the birth, explain to the parents the purpose and procedure of the newborn hearing screening. Educational videos about newborn hearing screening are available through the National Center for Hearing Assessment and Management (NCHAM) at www.infanthearing.org. Also, see the letter in “**Letters**” section of this manual regarding hearing screening protocols as well as the Wyoming EHDI website at www.wyomingehdi.org.

When to screen

The midwife trained to use the screening equipment should screen the newborn’s hearing within 2 weeks of birth. There may be birth debris or vernix in the ear canal from the birthing process which can block the probe and interfere with the Otoacoustic Emission (OAE) Screening equipment’s ability to accurately measure a response in the baby’s ear; therefore, screening within the first 24 hours of birth may lead to “false positive” results. Babies who fail their initial screening are rescreened **7-10** days later. Criteria for “pass/fail” are based on the equipment manufacturer guidelines.

Optimal screening environment

It is best to conduct hearing screening in a quiet area. Any background noise (fans, talking, music, television, etc.) may interfere with the screening results and may also lengthen screening time. Some screening equipment may indicate if the noise levels are interfering with the screening process.

Preparing the infant for screening

The infant should be well-fed and quiet, or asleep. Make sure the baby is swaddled in a blanket so that loose little hands do not remove the probe during screening. A pacifier may be needed to calm the infant, if the parent allows it. However, the sucking motion **may** also increase the screening time.

Otoacoustic Emissions (OAE) Screening Steps

1. Position the infant so that the ear being screened is facing up. Properly positioning the baby ensures easy access for screening and proper probe placement.
2. The screener needs to be positioned so that the infant’s ear canal can be seen easily. This can be accomplished by standing directly across the ear that is being screened.
3. Inspect the ear for any signs of debris in the ear canal. Before screening the ear, some screeners have found that it is helpful to massage or to pull back gently on the ear prior to performing the screening.
4. Babies come in all shapes and sizes as do their ear canals. **The size of the probe tip chosen will be important in obtaining a secure fit and good screening result.** It is important to choose the correct probe tip size so that it fits snugly into the baby’s ear canal. When selecting the size, be sure to choose the tip that’s **slightly larger** than the opening of the ear canal. With one hand, gently pull back on the baby’s outer ear so that the ear canal can be easily seen. With the other hand, gently twist the probe into the ear, aiming it toward the ear canal. This motion should adequately place the probe while sealing off the canal.
5. Placement of the probe tip will not hurt or harm the baby. If the baby begins to wiggle during placement of the probe tip, gently hold the probe in place until the baby settles. Holding the probe

in place ***while the screening is in progress*** will introduce noise that can interfere with the screening procedure and is **NOT** recommended/allowable.

Troubleshooting

If the infant does not pass on the first screening attempt, please check the probe and make sure it is positioned correctly. During the screening process the probe can become blocked with debris; if the probe is blocked, the screening stimulus cannot be delivered into the ear canal and the OAE cannot be measured. In this case, remove the probe and replace with a new probe tip. If the infant still does not pass the screening, it is best to wait **7-10** days and then perform a second screening. At any time, please call the Wyoming EHDI Program at 307-721-6212 for trouble shooting assistance.

Reporting Screening Results to Wyoming EHDI

Report screening results to the Wyoming EHDI Program within a week of the date of the child's newborn hearing screening; these results can be added directly to the Wyoming EHDI – Information System, faxed, e-mailed or sent via US mail.

OAE Equipment

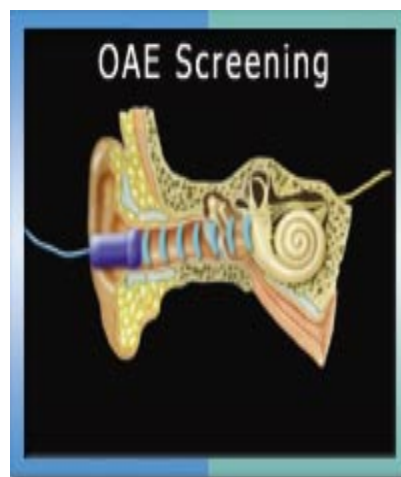
Otoacoustic Emissions (OAE) Hearing Screening represents a significant advance for health care providers screening young children. It is an objective method that screens cochlear function in a range of sound frequencies, critical for normal speech and language development. OAE Screening is an available method for screening infants and toddlers in their homes because it:

- Is portable
- Does not require a behavioral response from the child
- Can help to detect hearing loss
- Is quick and painless
- Can be conducted by midwives who are trained to use the equipment and who are skilled in working with children



The procedure is performed by using a portable handheld screening unit. A small probe is placed in the child's ear canal. This probe delivers a low-volume sound stimulus into the ear. The cochlea responds by producing an Otoacoustic Emission (sometimes described as an echo) that travels back through the middle ear to the ear canal and is analyzed by the screening equipment.

The screening result is displayed on the screening unit as a "pass" or a "refer." Otoacoustic Emissions (OAE) Screening can help to detect conductive and sensorineural hearing loss.



Step-by-Step Instructions on How to Use the OAE Equipment

1. Connect the probe cable to the OAE unit.
2. Turn the OAE Screening unit on.
3. Select a clean ear tip that is appropriate for the size of the ear being screened.
4. Insert ear probe tip securely in the ear. It is recommended to pull the ear (pinna) back to obtain a secure fit.
5. Follow the onscreen directions to begin the screening process.
6. Screen both the right and the left ear. Note results and date in writing.
7. Tell parent(s) the results and submit the results to the Wyoming EHDI – Information System.

Communicating Hearing Screening Results to the Parents

The Wyoming EHDI Program understands that it can be very difficult to tell the parent(s) that their newborn failed the hearing screening. However, we cannot over emphasize the importance of the manner in which parents are told of a failed hearing screening and the ability to reiterate the “next step” in the process. When a newborn is properly diagnosed and hearing loss is caught early, the child has a much improved opportunity for learning critical language and speech skills. ***The way in which you communicate the result of the hearing screening to the parent(s) will make a critical difference on whether or not the parent(s) whose children need rescreening allow their child to be rescreened. Their decision to return for the rescreening may impact a child with hearing loss for the rest of their lives.***

The Wyoming EHDI Program is here to help support both you, as a professional, as well as the parents of children with potential hearing loss. Please feel free to contact us if you have any questions, comments, or concerns. Below you will find two letters from parents with children who have hearing loss. The first letter is to you—the hearing screening professional. The second letter is to be provided to the parents whose child has failed their initial screening. In addition, you will find some scripts which may help you prepare to report the hearing results to the parents. **Remember: it is vital that a child who fails their initial screening is rescreened in 7-10 days and immediately referred for diagnosis if the 7-10 day rescreening is failed in one or both ears.**

Letters

Dear Nurses and Staff,

My name is Monette McKee and I am writing on behalf of the Wyoming Early Hearing Detection and Intervention (EHDI) Program. As a registered nurse and mother of three children, I have seen firsthand the importance of, both, the newborn hearing screening and the referrals and follow-up information that new parents receive.

As a newborn, my now thirteen-year-old daughter was administered the hearing screening a total of three times. She was unable to pass any of these attempts. The well-meaning nurse and nursery staff convinced me and my husband that she was “fine” and that the hospital’s equipment was somewhat unreliable. The nurse offered me the chance to bring my daughter back to the nursery after discharge to rescreen, but she stressed that it would be at the nursery’s convenience, which, with their busy schedule, would be difficult at best. She also stressed that since my daughter was no longer an inpatient, I would be expected to pay for the screening. This nurse was trying to save me time and money on a screening that she was confident my daughter would most likely pass simply due to equipment malfunction or unreliability.

At the time of my daughter’s birth it was not mandatory for infants to be referred if they failed the hearing screening, and I felt confident that the staff had enough experience with their machine and the hospital policies to give me sound advice. As unfair as it may seem, I looked at the staff as experts on every aspect of newborn behavior and care, just as many parents still do. I was, after all, brand new to parenting, and I was speaking to staff members with many years of experience. So, I took my daughter home with little thought to the fact that she may have hearing loss.

At about twelve months old, my daughter did indeed start a long journey of evaluations by early childhood specialists, physicians, and therapists due to her inability to speak. My daughter, my husband, and I spent many months being frustrated with the varying reports from everyone regarding possible causes, but also with my daughter’s inability to communicate. My daughter’s frustration level was high until she was placed in a wonderful early childhood learning center at approximately eighteen months old. Once there, she learned sign language until we could figure out what was wrong. Then, at about twenty-six months old we were referred to Denver Children’s Hospital where she was diagnosed as having severe to profound hearing loss (deaf).

Since the time of her diagnosis, my daughter has been implanted with a cochlear implant, learned to use her device to hear and speak, and spent countless hours working on the language skills that she did not gain passively as an infant. Although there is no guarantee that her journey would have turned out differently, I do believe that with the prompting of the nursery staff at the time of her birth, my husband and I would have been more aware of the possibility of hearing loss, and we would have been even more proactive in finding ways to help her communicate.

So, in conclusion, I would ask that you please seriously consider the manner in which the results of the hearing screening are given to new parents. The equipment is now very reliable and should be considered an invaluable tool in early diagnosis. The Wyoming EHDI Program has

worked hard to pass legislation mandating referrals on all newborns who do not pass the screening, to place updated equipment into Wyoming birthing hospitals, and to spread the message that identifying hearing loss as early as possible is critical to a child's development of normal speech and language. Many parents do not realize that they have the right and obligation to advocate for their child, so please refer those families whose children fail the initial newborn hearing screening (and the repeat hearing screening **7-10** days later) to a pediatric audiologist and please stress the importance of a follow-up. We, as nurses, can of course never make a diagnosis, nor do we ever want to be the "bad guy" by implying that someone's child may have hearing loss, but if the screening is taken too lightly, results may be useless. The future of Wyoming's deaf and hard of hearing children begins with your expert advice. Thank you.

Sincerely,

Monette McKee, R.N.

Dear Parent(s) of a Newborn,

First, let me say “congratulations” on the birth of your baby. What a wonderful time of new beginnings and excitement for you and your family.

If you are reading this letter, your baby has failed the newborn hearing screening in one or both ears. The nursery staff will help you schedule a time for you to bring your baby back to the nursery to have his or her hearing rescreened.

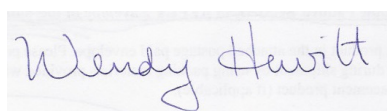
As a parent of two children with profound hearing loss, I want to share with you the importance of your follow-up appointment for a repeat hearing screening. Let me start by telling you that approximately 70% of the newborns requiring a follow-up hearing rescreening pass in both ears. The other 30% (who also fail the repeat hearing screening) will require pediatric audiometric diagnostic testing.

Both my son and daughter required a hearing rescreening. **My husband and I were sure they could hear because they were so responsive to sounds.** We later learned that our babies were responding to things other than sounds. As my husband and I went to the follow-up rescreening and diagnostic appointments, we learned some things that we had never thought about before. Your baby’s hearing is a critical component in learning to talk. From birth to age three is the most important time in your baby’s life for learning language and how to talk. That is why newborn hearing screening programs are now in hospitals throughout Wyoming. The earlier a child’s hearing loss is found, the sooner your family can begin Early Intervention services, and the better chance your baby has at developing to his or her fullest potential.

Because we caught our children’s hearing losses early, both my son and daughter are doing well with their speech, language and social/emotional development. **Please bring your baby back to the follow-up appointment; it can make all the difference in the world!** If your child has hearing loss, it is better to find out now rather than later. If you have any questions about the follow-up screening or anything regarding hearing loss, please feel free to contact me, Wendy Hewitt, at 307-782-3276, or email me at wendy@wyhandsandvoices.org.

Thanks for your time. Wishing you all the luck, (and some sleep) when you get your little one home!

Sincerely,

A handwritten signature in blue ink that reads "Wendy Hewitt". The signature is written in a cursive style and is positioned above a light blue horizontal line.

Wendy Hewitt

Guidance and Scripts

Many parents whose baby did not pass the hearing screening have expressed that **how the hearing screening results were shared with them was as important as the results themselves**. Parents with children diagnosed with hearing loss express intense frustration when the hearing screening results were provided in a way that led them to believe a hearing loss was not probable and the screening results were not that important. This guide is to assist you in effectively communicating hearing screening results with the newborn's parent(s).

Things screeners SHOULD say to families when their newborn did not pass their hearing screening:

- ✓ This is a screening. More screening is needed to find out if your baby has hearing loss. The next step is to have a rescreening completed in **7-10** days.
- ✓ An appointment has been made for your newborn's hearing to be rescreened. It is very important for you to keep this appointment because for babies who have hearing loss, early diagnosis and intervention services help them to develop language, speech, and social skills to their fullest potential. This rescreening will be done on (date) at (time).
- ✓ If your baby has hearing loss, it is really important to find out early. Babies who are identified with hearing loss early and receive intervention services before 6 months of age have better language, speech, and social skills than babies whose hearing loss is identified later. Early diagnosis and intervention is key.
- ✓ If you have questions about the screening process, you can contact the Wyoming EHDI Program at 307-721-6212, or nancy.pajak@wyo.gov.

Things screeners SHOULD NOT say to families when their newborn did not pass their hearing screening:

- ✗ **Lots of babies don't pass the screening and have normal hearing.**
Many families will not keep their follow-up appointment if they are told this. They may assume that follow-up testing is not really necessary.
- ✗ **Don't worry, it's probably fluid.**
Fluid may play a part in a hearing screening referral. However, a "fail" is a "fail" is a "fail". If the baby failed the screening, there is a need for more in-depth testing.
- ✗ **It's probably nothing, don't worry. Everything will be fine.**
No one wants to provide a parent with news about their baby that may make them feel upset or uncomfortable. However, families whose babies have been diagnosed with hearing loss remember vividly what the screener said to them when given the results. Some parents report feeling more shocked and upset about the diagnosis because they were falsely reassured by screening staff that everything was going to be fine. Parents want factual information.
- ✗ **The baby was fussy.**
If the baby was fussy, then the results for the screening are not valid and another screening should be performed.

× **The screening equipment isn't working right.**

If screeners are having difficulty with the equipment, or feel that something just isn't right (for example, an increase in referrals in a particular ear), contact the Wyoming EHDI Program immediately. We can assist in troubleshooting as well as securing replacement equipment, if necessary. The technology provided for use during hearing screening is reliable and should be trusted.

× **The baby has hearing loss.**

Screening is the first step in identification of hearing loss. Follow-up hearing testing is the only way to determine the complete hearing status of a baby. Babies who do not pass the screening may actually have hearing loss or may have a temporary condition, such as fluid in the middle ear.

Scripts

Informing Parents of the Screening:

*I have been trained by the Wyoming EHDI Program and provided equipment to conduct newborn hearing screenings. This screening is important, as it can help determine if your baby has hearing loss. It is required in the State of Wyoming that all babies born in Wyoming have **access** to receive hearing screenings. Before I screen your baby I will need you to complete the consent form.*

Passing:

I just completed the hearing screening; the results are a pass. When an infant passes the hearing screening for both ears, this indicates that the cochlea is functioning normally, and auditory sensitivity is believed to be adequate for developing speech and language. Here is a brochure that talks about development of speech and language. It is always important to monitor the progress of your baby's development, especially their speech and language, because your baby's hearing can change any time. If you are ever worried that your baby can't hear, talk to your baby's doctor right away and ask for a referral to a pediatric audiologist that is skilled at testing infants and young children. Wyoming Child Development Centers offer hearing screening for children through age five. These screenings are provided at no charge to parents.

If their baby is at risk for delayed onset/progressive hearing loss (risk indicators such as Cytomegalovirus—CMV, family history of hearing loss, etc.) re-evaluation by an audiologist is strongly recommended at 6-8 months of age. In addition, parents should seek further evaluation if speech and language milestones fail to develop as predicted. A speech and language milestone checklist for the parent's information is included in the Wyoming EHDI Newborn Hearing Screening brochure.

Not Passing (Refer – one ear):

I just finished screening your baby's hearing. Your baby did not pass the screening today. This does not mean that your baby has a hearing loss, but without additional screening we can't be sure. There is a

possibility that permanent hearing loss exists. Many children with normal hearing in one ear develop normal speech and language; however, some do not. Please be sure you keep your appointment for a hearing rescreening. Your appointment for your rescreening is (date) at (time).

Assist parents in scheduling an evaluation with a pediatric audiologist if their baby fails the repeat screening in one or both ears. Refer all children who fail their hearing screening to the Wyoming EHDI office and their primary care physician.

Not Passing (Refer – both ears):

I just finished screening your baby's hearing. Your baby did not pass the screening today. This does not mean that your baby has a hearing loss, but without additional screening we can't be sure. There is a possibility that permanent hearing loss exists. Identifying hearing loss at a young age is very important to your child. Please be sure you keep your appointment for a hearing rescreening. Your appointment for your rescreening is (date) at (time).

Assist the parent(s) in scheduling an evaluation with a pediatric audiologist if their baby fails the repeat screening in one or both ears. Refer all children who fail to the Wyoming EHDI office and their primary care physician.

Commonly Asked Questions and Answers

The following is a list of common questions and answers regarding the hearing screening:

Why screen babies?

Hearing loss is one of the most common conditions present at birth. It is easy to miss because hearing loss is invisible to the eye. Before newborn hearing screening took place, babies with hearing loss were often identified as late as 2 or 3 years old. Infants who are identified with hearing loss early and receive intervention services before 6 months of age have better language, speech, and social skills than children whose hearing loss is found later.

Who performs the hearing screening?

Newborn hearing screenings can be done by people who have been properly trained. Midwives, nurses, technicians, audiologists, and highly trained volunteers often perform the hearing screening.

How is the hearing screening done?

OAEs are soft sounds delivered to the baby's ear. If the cochlea is working normally, it will send back sounds that the screening equipment can pick up and analyze. The baby does not need to respond in any way.

Will the screening hurt my baby?

No, most babies sleep through the screening.

How long does the screening take?

Usually it takes 10 to 15 minutes depending on how quiet your baby is during the screening. It may take less time, if your baby is very quiet.

What does Pass or Refer mean?

Pass means that today your baby's hearing is adequate for speech development. However, many babies develop hearing loss between the time of birth and when they enter kindergarten; so if you are concerned about your baby's hearing, you should always talk to his/her medical provider about getting a hearing screening. Free hearing screenings are available at Child Development Centers throughout Wyoming. Please refer to the "**Resources**" section of this manual for a Child Development Center in your community.

Refer means that your baby did not pass the hearing screening and needs additional testing.

If my baby does not pass the hearing screening, does that mean that my baby has hearing loss?

No, a screening looks for signs of possible hearing loss. If your baby did not pass a hearing screening, it means that your baby needs a follow-up appointment for further hearing testing. These tests will give you more information about your baby's hearing and it is very important to keep this appointment.

What happens if my baby refers or fails?

If your baby "refers" (or fails) a second screen, it is very important that you make an appointment with a pediatric audiologist as soon as possible to have a complete age appropriate hearing evaluation.

Hearing loss cannot be determined by screening. Screening tells us if further testing by a pediatric

audiologist needs to be done. Call the EHDI Program at 307-721-6212; they can help refer you to a pediatric audiologist nearest to your community and answer any questions. Information can also be found at www.wyomingehdi.org.

Can babies born with hearing loss have parents who hear normally?

Yes, 90% of babies born with hearing loss have parents whose hearing is within normal limits. Only about 10% have parents who are deaf themselves.

What services are available for babies with hearing loss?

The Wyoming EHDI Program helps parents of children from birth to 3 years of age to recognize and understand their child's special developmental needs. If your baby is found to have hearing loss, services are available to your family at no cost to you.

What if I choose to not screen my baby?

You have the right to refuse, however, it is recommended that you think about the screening. Please discuss your concerns with your midwife or other Healthcare provider. Finding a hearing loss as early as possible is critical for children.

Informed Consent

Wyoming Statutes 35-4-801 and 35-4-802 mandate that the State of Wyoming Department of Health make rules and regulations necessary for the provision of screening for detection of genetic and metabolic diseases and hearing defects in newborn children born in Wyoming. The Statutes further require informed consent of parents/guardians be obtained in order for an infant to receive or waive the screenings.

Please see the Newborn Hearing Screening Consent/Waiver form in Appendix B that you may use for your practice to fulfill this requirement.

Resources

Basic Anatomy and Function of the Ear

1. The Outer Ear

Sound waves are collected by the pinna and travel down the ear canal. When sound waves strike the eardrum, at the end of the canal, the membrane starts to vibrate. At this point, acoustic energy (sound waves) is changed into kinetic energy (movement).

2. The Middle Ear

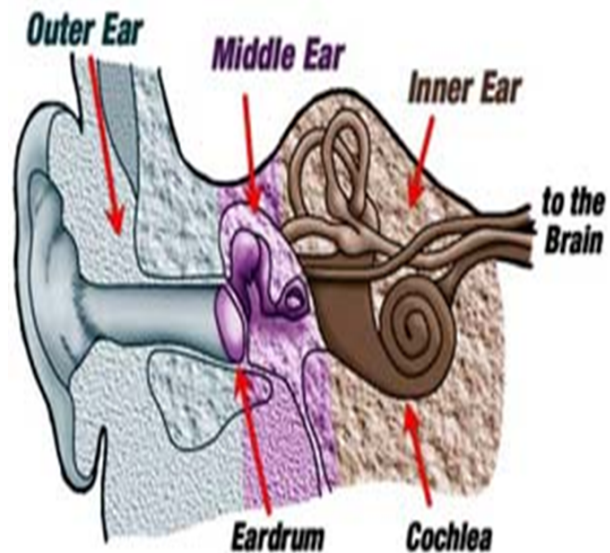
The eardrum is considered part of the middle ear because it works with the middle ear bones to transmit signals from the outer ear to the inner ear. The ossicular chain receives kinetic energy from the eardrum and relays it across the middle ear space to the oval window, the entrance to the inner ear.

3. The Inner Ear

The movement of the stapes (one of the three middle ear bones, collectively called the ossicles) transfers signals in the form of kinetic energy into the cochlear fluid, causing a series of travelling waves. In this way the signal is changed once again, from kinetic energy into hydraulic energy (fluid).

Travelling waves move two membranes as they progress through the spiralling ducts of the cochlea. Between the membranes are four rows of microscopic cells called hair cells.

The hair cells move with the membrane and this triggers bioelectrical nerve impulses. Once again, there is a change, as the signal is changed from the waves' hydraulic energy into electrical energy. These electrical impulses travel up the auditory nerve and brainstem to the auditory cortex portion of the brain; which is where they are processed and perceived as sound.



Definitions

Cochlea - a spiral-shaped, fluid-filled inner ear structure; it is lined with cilia (tiny hairs) that move when vibrated and cause a nerve impulse to form.

Ear canal – channels sound toward the eardrum. The presence of excessive cerumen (earwax) or other debris could affect the Otoacoustic Emissions (OAE) or Automated Auditory Brainstem Response (AABR) hearing screening.

Eardrum - (also called the tympanic membrane) a thin membrane that vibrates when sound waves reach it.

Eustachian tube - a tube that connects the middle ear to the back of the throat; it equalizes the pressure between the middle ear and the air in the environment. When you "pop" your ears as you change altitude (going up a mountain or in an airplane), you are equalizing the air pressure in your middle ear. When the Eustachian tube is not working properly, fluid can build up in the middle ear cavity and can cause a conductive hearing loss.

Ossicular chain - (Three bones of the middle ear; (a) incus, (b) malleus, (c) stapes). Their purpose is to conduct (transfer) sound from the eardrum to the inner ear (cochlea). When there is fluid in the middle ear space, these bones sometimes have a difficult time moving. Therefore, the hearing screening results may result in a "FAIL".

- (a) **Incus** - (also called the anvil) a tiny bone that passes vibrations from the malleus to the stapes.
- (b) **Malleus** - (also called the hammer) a tiny bone that passes vibrations from the eardrum to the incus.
- (c) **Stapes** - (also called the stirrup) a tiny, U-shaped bone that passes vibrations from the stirrup to the cochlea. This is the smallest bone in the human body (it is 0.25-0.33 cm long).

Pinna - (also called the auricle) the visible part of the outer ear. It collects sound and directs it into the outer ear canal.

Semicircular canals - three loops of fluid-filled tubes that are attached to the cochlea in the inner ear. They help us maintain our sense of balance.

Program Contacts

Wyoming Early Hearing Detection & Intervention (EHDI) Program:

Name: Nancy Pajak, M.S., CCC-A – EHDI Coordinator

Address: Wyoming EHDI Program
1771 Centennial Drive, Suite 220
Laramie, Wyoming 82070

Contact: Phone: 307-721-6212 | Fax: 307-721-6313 | Cell: 307-760-6625

Email: nancy.pajak@wyo.gov

Website: www.wyomingehdi.org

Name: Sarah Fitzgerald – Follow-up Coordinator

Address: Wyoming EHDI Program
1771 Centennial Drive, Suite 220
Laramie, Wyoming 82070

Contact: Phone: 307-721-6212 | Fax: 307-721-6313

Email: sarah.fitzgerald@wyo.gov

Website: www.wyomingehdi.org

Early Intervention/Part C Coordinator/Wyoming Department of Health; Developmental Disabilities Division:

Name: Christine DeMers

Address: Part C - Developmental Disabilities Division
Wyoming Department of Health
6101 Yellowstone Road Suite 220
Cheyenne, Wyoming 82002

Contact: Phone: 307-777-5246 | Fax: 307-777-7115

Email: christine.demers@wyo.gov

Website: www.health.wyo.gov/ddd/earlychildhoodindex.html

CSHCN Director/Children's Special Health Program (CSH)/Wyoming Department of Health:

Name: Danielle Marks

Address: Children's Special Healthcare Services
Wyoming Department of Health
6101 Yellowstone Road Suite 420
Cheyenne, Wyoming 82002

Contact: Phone: 307-777-7944 | Fax: 307-777-777-7215

Email: danielle.marks@wyo.gov

Website: www.health.wyo.gov/familyhealth/csh/index.html

Wyoming Child Development Centers

Wyoming has 14 Child Development Center Regions with various sites throughout the state. These Child Development Centers provide hearing screenings and intervention programs at no charge to the parents for children ages: birth through five.

Region 1		
Children’s Resource Center 115 South 4 th Street Basin, WY 82410 307-568-2914 PO Box 882	Children’s Resource Center, (Administrative Office) 1302 Beck Avenue, Suite B Cody, WY 82414 307-587-1331	Children’s Resource Center 2531 Cougar Avenue Cody, WY 82414 307-527-7060 2525 Cougar Avenue (Mail) PO Box 2901 (Confidential Mail)
Children’s Resource Center 435 East 5 th Street Lovell, WY 82431 307-548-6722	Children’s Resource Center 558 East 2 nd Street Powell, WY 82435 307-754-2864 PO Box 1191	Children’s Resource Center 130 Highway 20 South Thermopolis, WY 82443 307-864-9227 PO Box 943
Children’s Resource Center 502 North Road 11 Worland, WY 82401 307-347-8677 PO Box 1393		
Region 2		
Buffalo Center Karen’s Place 1 North DeSmet Buffalo, WY 82834 307-684-9271	Child Development Center Region II 345 South Linden Avenue Sheridan, WY 82801 307-672-6610	Child Development Center Region II (Preschool) 1881 South Sheridan Avenue Sheridan, WY 82801 307-673-2700
Region 3		
Hulett School – Preschool 429 Sager Street Hulett, WY 82720 307-746-4560 (Newcastle) PO Box 127	Moorcroft Preschool 100 South Belle Fourche Avenue Moorcroft, WY 82721 307-746-8733 PO Box 489	Weston County Children’s Center 104 Stampede Street Newcastle, WY 82701 307-746-4560
Sundance Kid’s Children Center 210 South 5 th Street Sundance, WY 82729 307-746-4560 (Newcastle) PO Box 684	Weston County Children’s Center – Upton 629 Sheridan Street Upton, WY 82730 307-468-2200 PO Box 563	

Region 4		
<p>Children’s Learning Center (Big Piney Campus) 650 Piney Drive Big Piney, WY 83113 307-276-5415 PO Box 594</p>	<p>Children’s Learning Center (Regional Office) 245 West Gill Avenue Jackson, WY 83001 307-733-1616 PO Box 4100</p>	<p>Children’s Learning Center (Early Head Start & Head Start Campus) 245 East Deloney Avenue Jackson, WY 83001 307-732-0525; 307-734-3896 (HS) 307-733-5345 (EHS) PO Box 4100</p>
<p>Children’s Learning Center (Special Education) 3105 Big Tail Drive Jackson, WY 83001 307-733-3791 PO Box 4180</p>	<p>Children’s Learning Center (Rafter J Campus) 3105 Big Tail Drive Jackson, WY 83001 307-733-0333 PO Box 4180</p>	<p>Children’s Learning Center (Mercill Campus) 145 Mercill Avenue Jackson, WY 83001 307-733-5346</p>
<p>Children’s Learning Center (Pinedale Campus) 191 South Franklin Avenue Pinedale, WY 82941 307-367-6306 PO Box 45</p>		
Region 5		
<p>Afton – CDC 675 South Washington Afton, WY 83110 307-885-9286 PO Box 877</p>	<p>Alpine – CDC 247 Snake River Drive Alpine, WY 83128 307-654-4116 PO Box 3052</p>	<p>Evanston – LUCDA 350 City View Drive, Suite 104 Evanston, WY 82930 307-789-7384</p>
<p>Kemmerer – CDC 1208 Elk Street Kemmerer, WY 83101 307-877-6984</p>	<p>Regional Office 1001 Highway 414 North Mountain View, WY 82939 307-782-6602 PO Box 570</p>	<p>Bridger Valley – CDC 1001 HWY 414 North Mountain View, WY 82939 307-782-6601 PO Box 570</p>
<p>Thayne – CDC 250 Vannoy Parkway Thayne, WY 83127 307-883-4116 PO Box 672</p>		

<p style="text-align: center;">Region 6 All Region 6 mail goes to: PO Box 593 Lander, WY 82520</p>		
<p>Child Development Services of Fremont County 700 North 1st Street Dubois, WY 82513 307-332-5508 (Lander)</p>	<p>Child Development Services of Fremont County 100 Pushroot Court Lander, WY 82520 307-332-5508</p>	<p>Child Development Services of Fremont County (birth-3) 1202 East Jackson Avenue Riverton, WY 82501 307-856-4337</p>
<p>Child Development Services of Fremont County (3-5) 1205 East Jackson Avenue Riverton, WY 82501 307-856-4337</p>	<p>Shoshone Preschool 112 West 3rd Street Shoshone, WY 82649 307-856-4337 (Riverton)</p>	
<p style="text-align: center;">Region 7</p>		
<p>Sweetwater County CDC (Administration Office) 1715 Hitching Post Drive Green River, WY 82935 307-875-0268</p>	<p>Sweetwater County CDC 1715 Hitching Post Drive Green River, WY 82935 307-872-3290</p>	<p>Sweetwater County CDC 4509 Foothill Boulevard Rock Springs, WY 82901 307-352-6871 PO Box 806</p>
<p style="text-align: center;">Region 8</p>		
<p>Little Rascals 350 Whipporwill Drive Baggs, WY 82321 307-838-7300 PO Box 366</p>	<p>Encampment Preschool 514 Rankin Street Encampment, WY 82325 307-326-5839 (Saratoga) PO Box 718</p>	<p>Wee Folks Place 789 Miners Plz #8 Hanna, WY 82327 307-326-5839 (Saratoga) PO Box 629</p>
<p>Project Reach 1801 Edinburgh Street Rawlins, WY 82301 307-324-9656</p>	<p>ExCEL Preschool 204 West Spring Saratoga, WY 82331 307-326-5839 PO Box 1481</p>	
<p style="text-align: center;">Region 9</p>		
	<p>Child Development Center of Natrona County 2020 East 12th Street Casper, WY 82601 307-235-5097</p>	

Region 10		
Wyoming Child and Family Development – Mills 4981 Buick Street Casper, WY 82604 307-265-9562 PO Box 2993 Mills, WY 82644	Wyoming Child and Family Development – Early Head Start 1514 East 12 th Street, Suite 304 Casper, WY 82601 307-473-5831 1514 East 12 th Street #304	Wyoming Child and Family Development – Head Start 301 West B Street Casper, WY 82601 307-266-5480
Wyoming Child and Family Development – Douglas 630 Erwin Street Douglas, WY 82633 307-358-3901	Wyoming Child and Family Development – Gillette 601 Running W Drive Gillette, WY 82718 307-682-4214	Wyoming Child and Family Development – Glenrock 929 West Birch Street Glenrock, WY 82637 307-436-5357 PO Box 2019
Wyoming Child and Family Development – Main Office 126 North Wyoming Street Guernsey, WY 82214 307-836-2751 PO Box 100	Wyoming Child and Family Development Center – Guernsey 371 South Kansas Avenue Guernsey, WY 82214 307-836-2838 PO Box 160	Wyoming Child and Family Development – Lusk 801 South Maple Street Lusk, WY 82225 307-334-2252 PO Box 1261
Wyoming Child and Family Development – Torrington Learning Center 3110 West C Street Torrington, WY 82240 307-532-7068	Wyoming Child and Family Development – Lincoln Infant Toddler Center 436 East 22 nd Avenue, Unit C Torrington, WY 82240 307-534-4720	Wyoming Child and Family Development – Wheatland 28 Rompoon Road Wheatland, WY 82201 307-322-3385 PO Box 243
Region 11		
Developmental Preschool & Daycare Center (Early Intervention Services) 1771 Centennial Drive, Suite 220 Laramie, WY 82070 307-742-3571	Developmental Preschool & Daycare Center (Child Care Services) 1771 Centennial Drive, Suite 220 Laramie, WY 82070 307-742-6374	
Region 12		
STRIDE Learning Center (Part C) 5801 Yellowstone Road Cheyenne, WY 82009 307-638-6100	STRIDE Learning Center (Part B) 326 Parsley Boulevard Cheyenne, WY 82007 307-632-2991	
Region 13	Region 14	
Children’s Developmental Services of Campbell County 1801 South 4-J Road Gillette, WY 82718 307-682-2392 1801 4J Road		Early Intervention Program – Fort Washakie #9 Shipton Lane Fort Washakie, WY 82514 307-332-3516 PO Box 610

Wyoming Hospitals

The Wyoming hospitals are equipped to conduct newborn hearing screenings. If, for any reason, you should want or need to refer a newborn and their parent(s) to a Wyoming hospital for a hearing screening, it is important to have the parents receive an order from their physician before going to the hospital. ***Hospital policy requires a physician order before they can provide the screening.*** Notifying the parents of this requirement will streamline the process for them. It is also important to note: there is a fee charged by the hospital for the hearing screening. The Wyoming EHDI Program can be also contacted to help provide guidance and answer questions regarding working with a hospital to receive newborn hearing screenings. Below is a list of the Wyoming hospitals with newborn hearing screening equipment.

Hospital	Contact Information
Star Valley Medical Center	Physical: 901 Adams Street, Afton, WY 83110
	Mailing: PO Box 579, Afton, WY 83110
	Phone: 307-885-5800
Johnson County Healthcare Center	Address: 497 West Lott, Buffalo, WY 82834
	Phone: 307-684-5521
Wyoming Medical Center	Address: 1233 East 2 nd Street, Casper, WY 82601
	Phone: 307-577-7201
Cheyenne Regional Medical Center	Address: 214 East 23 rd Street, Cheyenne, WY 82001
	Phone: 307-634-2273
West Park Hospital	Address: 707 Sheridan Avenue, Cody, WY 82414
	Phone: 307-527-7501
Memorial Hospital of Converse County	Address: 111 South 5 th Street, Douglas, WY 82633
	Phone: 307-358-2122
Evanston Regional Hospital	Address: 190 Arrowhead Drive, Evanston, WY 82930
	Phone: 307-789-3636
Campbell County Memorial Hospital	Physical: 501 South Burma Avenue, Gillette, WY 82716
	Mailing: PO Box 3011, Gillette, WY 82717
	Phone: 307-682-1000
St. John's Medical Center	Physical: 625 East Broadway, Jackson, WY 83001
	Mailing: PO Box 428, Jackson, WY 83001
	Phone: 307-733-3636

South Lincoln Medical Center	Address: 711 Onyx Street, Kemmerer, WY 83101
	Phone: 307-877-4401
SageWest Health Care (Lander)	Address: 1320 Bishop Randall Drive, Lander, WY 82520
	Phone: 307-332-4420
Iverson Memorial Hospital	Address: 255 North 30 th Street, Laramie, WY 82072
	Phone: 307-742-2141
Powell Valley Healthcare	Address: 777 Avenue H, Powell, WY 82435
	Phone: 307-754-2267
Memorial Hospital of Carbon County	Physical: 2221 West Elm Street, Rawlins, WY 82301
	Mailing: PO Box 460, Rawlins, WY 82301
	Phone: 307-324-2221
SageWest Health Care (Riverton)	Address: 2100 West Sunset Drive, Riverton, WY 82501
	Phone: 307-856-4161
Memorial Hospital of Sweetwater County	Physical: 1200 College Drive, Rock Springs, WY 82901
	Mailing: PO Box 1359, Rock Springs, WY 82901
	Phone: 307-362-3711
Sheridan Memorial Hospital	Address: 1401 West 5 th Street, Sheridan, WY 82801
	Phone: 307-672-1000
Hot Springs County Memorial Hospital	Address: 150 East Arapahoe Street, Thermopolis, WY 82443
	Phone: 307-864-3121
Community Hospital	Address: 2000 Campbell Drive, Torrington, WY 82240
	Phone: 307-532-4181
Platte County Memorial Hospital	Physical: 201 14 th Street, Wheatland, WY 82201
	Mailing: PO Drawer 848, Wheatland, WY 82201
	Phone: 307-322-3636
Washakie Medical Center	Physical: 400 South 15 th Street, Worland, WY 82401
	Mailing: PO Box 700, Worland, WY 82401
	Phone: 307-347-3221

Appendix A:

Newborn Metabolic Consent/Waiver Form

WYOMING DEPARTMENT OF HEALTH
NEWBORN METABOLIC SCREENING
CONSENT/WAIVER FORM

Infant's Name _____
Date of Birth _____
Mother's Name _____
Address _____
Phone Number _____

I authorize the screening of my infant for metabolic disorders. I have read and understand the information packet on Infant Metabolic Screening and understand the nature and purpose of the test. I know that a metabolic screening may be obtained by having a blood sample taken by a physician, hospital personnel, public/private medical laboratory, or a local public health nurse. I am aware that there may be a charge assessed which may or may not be covered by insurance, I agree to pay for the screening if it is not covered by insurance. I understand that this information will be use to ensure that appropriate and timely medical services are made available to my child.

Signature Date

Relationship to Infant Witness

I do not authorize the screening of my infant for metabolic disorders. I have read and fully understand the information packet on Infant Metabolic Screening and accept responsibility for choosing not to have this screening performed.

Signature Date

Relationship to Infant Witness

The completed consent/waiver forms should be returned to:

The Wyoming Early Hearing Detection and Intervention Program
1771 Centennial Drive, Suite 220
Laramie, WY 82070
Fax: 307-721-6313

Appendix B:

Newborn Hearing Screening Consent/Waiver Form

WYOMING DEPARTMENT OF HEALTH
NEWBORN HEARING SCREENING
CONSENT/WAIVER FORM

Infant's Name _____
Date of Birth _____ Male _____ Female _____
Mother's Name _____ Phone Number _____
Father's Name _____ Phone Number _____

I authorize the screening of my infant for hearing loss. I have read and understand the information packet on Infant Hearing Screening and understand the nature and purpose of the test. I have received the list of hospitals and child development centers where I may obtain a hearing screening for my infant. I am aware that there may be a charge assessed by the hospitals which may or may not be covered by insurance, I agree to pay for the screening if it is not covered by insurance. I am also aware that the hearing screening is free of charge if obtained at a child development center. I understand that this information will be used to ensure that appropriate and timely medical, educational, and audiological services are made available to my child.

Signature Date

Relationship to Infant Witness

Newborn Hearing Screening Results

Initial Hearing Screening Date: _____

Left Ear: PASS _____ FAIL _____ Right Ear: PASS _____ FAIL _____

Rescreening Date (if necessary): _____

Left Ear: PASS _____ FAIL _____ Right Ear: PASS _____ FAIL _____

Risk factors for Late Onset Hearing Loss (please check all that apply)

_____ Family History of Childhood Hearing Loss	_____ Perinatal Infection
_____ Syndrome Associated with Hearing Loss	_____ Low Birth Weight
_____ Ototoxic Medication	_____ Prolonged Ventilation
_____ Severe Asphyxia at Birth	_____ Hyperbilirubinemia
_____ Craniofacial Anomalies	_____ Bacterial Meningitis

I do not authorize the screening of my infant for hearing loss. I have read and fully understand the information packet on Infant Hearing Screening and accept responsibility for choosing not to have this screening performed.

Signature Date

Relationship to Infant Witness

The completed consent/waiver forms should be returned to:

The Wyoming Early Hearing Detection and Intervention Program
1771 Centennial Drive, Suite 220
Laramie, WY 82070
Fax: 307-721-6313

Name of Midwife Reporting Results _____ Date _____

Appendix C:

Failed Hearing Screening Form

Wyoming Early Hearing Detection and Intervention (EHDI) Program
FAILED HEARING RESCREENING FORM

When an infant fails both an initial newborn hearing screening **AND** rescreening (repeat hearing screening) on one or both ears, please contact the Wyoming EHDI Program as soon as possible in one of the following ways:

Via phone at 307-721-6212

Via fax at 307-721-6313

Via e-mail at nancy.pajak@wyo.gov

Via the Wyoming EHDI tracking software (must have user name and password)

Via mail to 1771 Centennial Drive, Suite 220, Laramie, WY 82070

Child's Name: _____

Date of Birth: _____

Primary Care Physician: _____

Initial Screening Date: _____

Rescreening Date: _____

Ear(s) Failed: _____ Left _____ Right _____ Both

Mother's Name: _____

Father's Name: _____

Phone Numbers: Home: _____

Work: _____

Cell: _____

Alternative Contact: _____

Alternative Contact Number: _____

Name of Person Reporting Information: _____

Practice of Person Reporting Information: _____

