

Addressing Hearing and Vision Concerns in Infants and Toddlers:
A Three-Pronged Approach for Washington State
Screen Reader Accessible Version

Early Supports for Infants and Toddlers (ESIT)

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Early Supports for Infants and Toddlers (ESIT)

Introduction

Using professionally recognized criteria, Washington Sensory Disabilities Services (WSDS) designed the Three-Pronged Approach (TPA) as a tool for documenting parent concerns, observable infant behaviors, and developmental skills related to hearing and vision.

The purpose of this tool is threefold:

1. To enhance ESIT providers' understanding of risk factors that might affect a child's vision and/or hearing.
2. To provide evidence that a child's hearing and vision have been addressed, or "screened."
3. To determine when a child's hearing and/or vision warrant further diagnostic evaluation.

The overarching goal is to identify hearing and vision concerns as early as possible to reduce their impact on a child's development.

The Three-Pronged Approach is not intended as a replacement for objective screening procedures. Ideally, it might be used in conjunction with otoacoustic emissions (OAE) screening of hearing, photoscreening of vision, and/or diagnostic evaluation by a pediatric audiologist, optometrist, or ophthalmologist. Often, however, the TPA is the only method available to ESIT providers to screen these sensory areas and document, in one place, information regarding hearing and vision.

ESIT requires current information about hearing and vision be included in every child's Individualized Family Service Plan (IFSP). The TPA has been specially designed for ESIT and should be used to capture the information as part of a family's intake process and annually thereafter, with results documented in the IFSP.

Instructions

Before You Begin

If a child referred to Early Support for Infants and Toddlers (ESIT) has been identified as deaf/hard of hearing or blind/low vision, **you do not need to complete the Three-Pronged Approach (TPA) for both sensory areas.**

For a child who is identified as deaf/hard of hearing:

- Enter that information on the Summary Form and proceed to screen.
- Ensure an appropriate professional (e.g., Teacher of the Deaf) is on the IFSP team.

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For a child who is identified as blind/low vision:

- Enter that information on the Summary Form and proceed to screen.
- Ensure an appropriate professional (e.g., Teacher of Children with Visual Impairment) is on the IFSP team.

If a child is at risk for combined hearing/vision concerns, go to www.wsds.wa.gov and Request Support.

Instructions

The TPA blends routine gathering of information from parents or caregivers with your observations of the infant/toddler. If you have access to a child's medical reports, these, too, can alert you to possible reasons for concern regarding hearing and/or vision. The TPA contains four basic forms:

- I. **Parent Interview:** Interview questions that are embedded into initial intake procedures. This informs the interviewer of family history and medical factors that put a child at higher risk for hearing and/or vision concerns.
- II. **Developmental Skills Checklist:** Checklists of developmental skills related to vision and hearing for your reference as you assess the child during first visits.
- III. **Observations:** Checklists of what to look for in a child's appearance and behaviors.
- IV. **Summary Form:** Information obtained from the three prongs is transferred to this form. *The summary form documents one of two possible screening outcomes:*
 1. No concerns regarding the child's vision or hearing at the present time.
 2. There is a concern, and a plan for follow up is recorded. The parents may take this form to their primary care physician to request further evaluation of the child's vision or hearing.

How often is the TPA administered?

At initial intake and annually as part of the annual IFSP review.

I. Parent Interview Questions Related to Vision and Hearing

In your first conversations with families you typically ask a lot of open-ended questions to help assess a child's and family's needs. Responses to these questions, in addition to information in a child's medical records, can alert you to look carefully at a child's vision and hearing.

Name of Child:

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Question 1. Do you have any concerns about the way your child responds when you talk to him or her, or about how your child is learning to talk?

No or Yes

Do you have any concerns about the way your child looks at you, or at toys/books, or watches TV?

No or Yes

Listen for risk factors. If the parent’s or caregiver’s response is yes, describe their concerns in their own words.

Risk Factors: **Family or caregiver concerns** regarding a child’s vision, eye contact, hearing, speech or language development, or regression of development warrant immediate referral for further evaluation.

Question 2. Has anyone in your family been deaf or hard of hearing, or blind or low vision, since a young age?

No, Yes, or Don’t Know

Listen for risk factors. If the answer is yes, is this for vision or hearing, and which family member was it?

Risk Factor: **Family history** of blindness/low vision, or of early, progressive, or delayed onset of permanent childhood deafness, constitutes a risk factor.*

*Items with an asterisk indicate risk for progressive change in hearing levels, requiring more frequent monitoring of hearing.

Question 3. What were the results of the final newborn hearing screening?

Pass, Missed/not done, Did not pass/referred, or Unknown

Listen for risk factor. If results were “Did not pass or referred,” “Unknown,” or “Missed”: Refer child for follow-up hearing services. A child who has not passed two hearing screenings should be referred to pediatric audiology.

- To locate services, go to: www.doh.wa.gov/hearingscreening
- Results of newborn hearing screening are valid for one year.

Question 4. Has your child had any ear infections?

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No, Yes, or Don't Know

Listen for risk factors. If the answer is yes, how many ear infections?

Risk Factor: **Recurrent, chronic middle ear infections** can cause fluctuating hearing levels that can result in speech and language delays.

Question 5. Has your child ever seen an eye doctor (i.e., optometrist or ophthalmologist)?

No, Yes, or Don't Know

Listen for risk factor. If the answer is yes, describe in the parent's or caregiver's own words.

Question 6. How would you describe your child's birth?

Was your baby full-term or premature?

If baby was premature, number of weeks:

Were there complications before, during, or immediately after the birth?

No or Yes

Did your baby spend time in neonatal intensive care (NICU), etc.?

No, Yes, or Don't Know

Listen for risk factors and note any of the following responses. Remember that items with an asterisk indicate risk for progressive change in hearing levels, requiring more frequent monitoring of hearing.

1. **NICU stay, any length, especially if infant required:** Extra-corporeal membrane oxygenation (ECMO)*, assistance with breathing, exposure to "loop diuretics" or to ototoxic medications (e.g., gentamicin, streptomycin), and/or had neurological complications (e.g., periventricular leukomalacia (PVL) or seizures).
2. **Perinatal asphyxia (oxygen deprivation)** or hypoxic ischemic encephalopathy (HIE) increases risk for cortical visual impairment (CVI) and elevated hearing thresholds.
3. **Hyperbilirubinemia (extreme jaundice)**, especially with transfusion, increases risk for sensorineural deafness. If untreated, brain damage and visual issues can result.
4. **In-utero infections** such as herpes, rubella, syphilis, cytomegalovirus (CMV)*, toxoplasmosis, or Zika.
5. **Aminoglycosides administered for more than 5 days** (e.g., gentamicin, amikacin, tobramycin, streptomycin, kanamycin) can cause side effects including deafness, vestibular toxicity, and loss of visual function.

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Question 7. Has the baby been diagnosed with a syndrome or genetic disorder?

No, Yes, or Don't Know

Listen for risk factor. If the answer is yes, note the name of the syndrome.

Risk Factor: More than 400 **syndromes or genetic disorders** are associated with atypical hearing and/or vision. Examples include: Alport, CHARGE, Down syndrome Fetal Alcohol Syndrome, Goldenhar, Hurler, Jervell Lange-Nielson, Norrie, Pendred, Refsum, Trisomy 13, Usher, and Waardenburg.

Question 8. Since birth, has the baby had any serious infections such as bacterial or viral meningitis, or encephalitis?

No, Yes, or Don't Know

Listen for risk factors: If the answer is yes, describe in the parent's or caregiver's own words.

Risk Factor: **Serious infections**, especially herpes virus and varicella, hemophilus influenza, and pneumococcal meningitis are associated with atypical hearing and vision.

Question 9. Since birth, has the child suffered significant head trauma (accidental or non-accidental), or non-fatal drowning with brain damage due to lack of oxygen?

No, Yes, or Don't Know

Listen for risk factors. If the answer is yes, describe in the parent's or caregiver's own words.

Risk Factors:

Injury to the eye can cause damage to eye structures including retinal detachment. Injury to the mastoid (area of skull behind the ear) can cause deafness.

Brain damage from trauma or oxygen deprivation can cause vision or hearing processing disorders.

Question 10. Since birth, has the child undergone treatment for cancer?

No or Yes

Listen for risk factors. If the answer is yes, describe in the parent's or caregiver's own words.

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Risk Factors: Some **chemotherapeutic drugs** (e.g., platinum-based drugs such as cisplatin, carboplatin) and radiation can damage the inner ear. Radiation also can injure eye structures and vestibular systems.

Include any additional notes and comments if needed.

II. Developmental Skills Checklist Related to Vision and Hearing in Young Children

Skills listed below relating to vision and hearing were selected from *The Carolina Curriculum for Infants and Toddlers*, 3rd edition (2004); *Developmental Assessment of Young Children-2* (DAYC), 2nd edition (2013); and *Hawaii Early Learning Profile* (HELP) (1994).

Each item references at least one of these three tools, along with the developmental area: Language = Lang; Receptive = Rec; Expressive = Exp; Communication = Com; Comprehension = Comp; Vocabulary = Vocab; Conversation = Conv; Cognitive = Cog; Personal/Social = Per/Soc; Social-Emotional = SE; Fine Motor = FM.

VISION: Does the Child. . .

VISION: AT BIRTH TO 12 MONTHS OLD:

1. Establish eye contact for at least a few seconds. (From the Carolina Cog 5a; DAYC SE 3; HELP Soc 4) Yes or No
2. Turn head or move eyes to visually explore surroundings. (From the DAYC Cog 1; HELP Cog 5) Yes or No
3. Watch an object moved slowly through his or her line of vision. (From the DAYC Cog 4; HELP Cog 31) Yes or No
4. Look back and forth between two objects. (DAYC Cog 5) Yes or No
5. Turn and look toward a noise. (DAYC Rec Lang 6; HELP Cog 10)
6. Try to reach out and grasp at toys or other objects. (Carolina FM 18g; HELP FM 16) Yes or No

VISION: BY 12 TO 24 MONTHS OLD:

1. Imitate facial expressions, actions, and sounds. (DAYC SE 19)
2. Look at pictures in a book (may pat or point to pictures). (DAYC Cog 21)
3. Place small object into container (e.g., a raisin into a small bottle). (DAYC Cog 25; HELP FM 84)
4. Imitate scribbling. (DAYC Cog 26; HELP FM 73)
5. When asked, point to five or more familiar persons, animals, or toys. (DAYC Rec 13)

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6. Follow directions about placing one item “in” and “on” another. (Carolina Cog 10n; DAYC Rec 14)

VISION: BY 24 TO 36 MONTHS OLD:

1. Recognize when another person is happy or sad. (Carolina Per/Soc 2t; DAYC SE 35).
2. Look at picture book with adult, may name or point to simple objects. (DAYC Cog 29)
3. Stack six to seven blocks. (DAYC Cog 32)
4. Imitate activities using substitute object to represent real one. (Carolina 21-24m; DAYC Cog 33)
5. Match five or more objects to a corresponding picture. (DAYC Cog 34; HELP Cog 107)
6. Point to 15 or more pictures of common objects when they are named. (Carolina Cog/Comm 10b; DAYC Rec 19)
7. Point to five or more common objects described by their use (e.g., “Show me what you eat with”). (DAYC Rec 21; HELP Cog 125)

HEARING: Does the Child. . .

HEARING AT BIRTH TO 12 MONTHS OLD:

1. React to loud noise by blinking, moving limbs, or stopping movement. (DAYC Rec 2)
2. Awaken or quiet to parent’s voice. (HELP Cog 18)
3. Turn to the direction from which name is being called. (Carolina Comm: Verb Comp 13b)
4. Show understanding of words (with no visual cues or gestures) by appropriate behavior or gesture. (HELP Lang 26)
5. Vocalize repetitive consonant-vowel combinations. (Carolina Cog/Com – Concepts/Vocab: Exp 11a)
6. Show shoes, other clothing, or object on request. (Carolina Cog/Com – Concepts/Vocab: Rec 10b)

HEARING: BY 12 TO 24 MONTHS OLD:

1. Imitate facial expressions, actions, and sounds. (DAYC SE 19)
2. Actively search for source of sound when sound is not visible. (Carolina Cog/Com 12k)
3. Respond to “where” questions. May point, state location, or go get ball. (Carolina Com/Conv 14ll; DAYC Rec 12)
4. When asked, will point to five or more familiar persons, animals, toys. (DAYC Lang/Rec 13)
5. Use expressive vocabulary of 15-20 words. (HELP Lang 50)
6. Use two-word sentences. (HELP Lang 57)

HEARING: BY 24 TO 36 MONTHS OLD:

1. Quietly listen to story, music, movie, or TV. (DAYC SE 29; HELP Cog 140)
2. Sing familiar songs with adult. (DAYC SE 30)

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3. Produce the following sounds clearly: p, b, m, k, g, w, h, n, t, d. (HELP Lang 65)
4. Use expressive vocabulary of 50+ words. (HELP Lang 69)
5. Use intelligible words about 80% of the time. (HELP Lang 98)
6. Point to five or more common objects described by their use (e.g., “Show me what you eat with”). (DAYC Rec 21)

Initial Screening Date:

Your Initials:

Annual Screening Date #1:

Annual Screening Date #2:

Annual Screening Date #3:

III. Observations: What to Look For (Things that May Signal a Vision or Hearing Concern in Young Children)

Associated with Vision (Check things observed):

Differences in How Eyes Look:

1. Drooping eyelid
2. One eye slightly higher or lower than the other eye
3. Obvious differences in the size, shape or structure of the eyes
4. Pupil of the eye is not round, clear, or black
5. Iris appears abnormal
6. White of the eye is red and sore looking
7. Eyes are watery even when baby is not crying

Unusual Eye Movements:

1. Eyes move in jerky way back and forth, or up and down (“nystagmus”)
2. Eyes do not move together
3. Eye turns inward or outward after 4 to 6 months old

Unusual Gaze or Head Positions:

1. Tilts or turns head in certain way when looking at an object
2. Holds object close to eyes
3. Seems to be looking beside, under, or above the person or object
4. Is very sensitive to bright light and squints, closes eyes, or turns away from it
5. Gazes directly into bright light

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Absence of Visual Behaviors:

1. No face-to-face eye contact by 3 months
2. Does not blink when touched at bridge of nose
3. Does not look at objects, or follow moving objects, by 3 months

Associated with Hearing (Check things observed):

Differences in How Face or Ears Look:

1. Oral facial clefting
2. Cleft lip and/or palate
3. Head or neck have malformations
4. Ears are malformed, or very small, or there may be no opening
5. Skin tags or pits near ear
6. Frequent earaches or ear infections
7. Discharge from the ears

Unusual Listening Behaviors:

1. Few or inconsistent responses to sounds
2. Does not seem to listen
3. Does not turn when name is called
4. Notices certain types of sounds more than others
5. Does not make a lot of different sounds
6. Voice sounds different; can't make certain speech sounds
7. Is behind in talking (no spoken words at 15 months; fewer than 50 words at 24 months)

Other Behaviors:

1. Pulls on ears or puts hands over ears
2. Breathes through mouth
3. Cocks head to one side

Summary Form Addressing Vision and Hearing Concerns

Parent/Caregiver Interview

- A. The parent or caregiver has concerns about the child's vision and/or hearing at this time:
No or Yes

If yes, the concern is related to the child's:

Vision, Hearing, and/or Speech-Language (need to rule out hearing loss)

- B. Describe the concerns regarding the child's hearing or vision skills development:
- C. Note factors in family or medical history that might indicate higher risk for hearing and/or vision concerns:

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Results of final newborn hearing screening: Pass, Did not pass or referred, Missed or not done, or Unknown.

Results of prior evaluation by eye care professional, optometrist or ophthalmologist:

I. Developmental Skills Checklist (Describe any skills of concern for child's age)

A. Vision Related

B. Hearing Related

II. Observations (Describe observations that might indicate higher risk for vision and/or hearing concerns)

Follow-up Plan

Child was referred to ESIT with prior diagnosis: Deaf/Hard of Hearing (DHH), Blind/Low Vision (BLV), Deafblind (DB).

Family was referred to appropriate specialty services as documented in the IFSP: DHH, BLV, and/or WSDS/DB consultation.

1. We have no concerns regarding the child's vision or hearing at this time, based on results of the TPA. Yes or No.
2. We have identified high risk factors, signs, and/or observations for: Vision (Yes or No), or Hearing (Yes or No).

Note: These concerns and a follow-up plan will be addressed in the IFSP. Action taken and results will be discussed at the six-month review.

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Follow-up option recommended:

Referral for further evaluation by a pediatric ophthalmologist or optometrist (Yes or No),

Referral for further evaluation by a pediatric audiologist (Yes or No),

following approval of primary care physician if needed.

Signature of Parent/Caregiver:

Date:

Signature of FRC/Service Provider:

Date:

Copy to: Primary Care Provider, parents, file

Child's Name:

Birthdate:

Parent/Caregiver Name:

Parent/Caregiver Phone:

FRC/Service Provider Name:

Primary Care Physician Name:

The Three-Pronged Approach was developed by Washington Sensory Disabilities Services for ESIT. For more information, go to www.wsds.wa.gov and select "Request Support."

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