The Tongue-Tied Toddler
Facilitator's Guide

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Topic: Language Delay

Abstract:
Speech delay is the most common presenting developmental concern in early childhood. Primary care clinicians are frequently the first to be consulted when language skills do not emerge on schedule. They should know how to conduct a brief office screening, and when referral to a specialist is indicated. Clinicians should have a working knowledge of community resources for evaluation and treatment. This case presents the story of a 2½ - year-old boy whose parents are concerned about delayed speech. Clinicians will learn how to conduct an initial assessment and develop a treatment plan.

Goal:
To give clinicians a basic understanding of evaluation and office management of speech and language delay.

Objectives:
By the end of the session, learners will be able to:
1. Recognize the common presentations of speech and language delay in young children.
2. List an appropriate differential diagnosis for a toddler with delayed language.
3. Discuss the diagnostic assessment and treatment plan for a child with language delay.

Prerequisite Case:
"When to Watch, When to Refer, When to Reassure" (Using the Denver II)

Related Case:
"Will David Catch Up?" (Global Delay)
"Finding New Friends?" (Down Syndrome)
"Jose's New Family" (Atypical Behaviors)

Themes: Child Development and Behavior

Key Words: Developmental delay, language delay, speech delay, special needs, disabilities

Bright Future Core Concepts:
While all of the Core Concepts are included in each case, this particular case can be used to highlight communication, partnership, advocacy, and prevention/health promotion.

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Materials Provided:

- Facilitator's Guide
- 3-part Case Narrative: Part I, Part II, Epilogue
- Handout #1: Denver-II
- Handout #2: Joey's Audiogram
- Handout #3: Early Intervention and School Referral
- Handout #4: Language Disorders
- Bibliography

Facilitator Preparation:

Facilitators should thoroughly review this guide and the other materials provided. Become familiar with the national Individuals with Disabilities Education Act (IDEA), and obtain a copy of the special education law of your own state. What rights do students and parents have in getting an assessment and access to special services?

Suggested Format for a One Hour Session:

We anticipate that case facilitators will modify implementation of the case session to best fit their educational setting and learners. For detailed recommendations on case facilitation, please see the chapter entitled, "A Brief Guide to Facilitating Case-Discussion," found in *The Case Teaching Method; and Growth in Children and Adolescents* (book 1 of this series).

Introduction: Speech and language delay is the most common form of developmental delay, occurring in up to 5-10% of preschoolers. *Speech delay* refers to a delay in expressive language skills only, while *language delay* refers to lag in both receptive and expressive skills. Parents are more likely to notice speech delay in their child, but clinicians must be careful to assess both speech and language abilities. Parent concerns are often highly predictive of developmental problems in young children. By utilizing open-ended screening questions, like those suggested in *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*, the clinician will often uncover significant developmental and behavioral concerns that will guide further assessment during well child visits.

Introduce the case title and the session goal. Explain that this will be an interactive case discussion and not a lecture. Distribute Part I of the case and ask one or more of the participants to read it aloud.

Part I

Mrs. Smith brings Joey, a 2 ½ year old, into your office for a well child care visit.

You begin by asking, "*Do you have any questions or concerns about Joey*?"
"*I'm a little concerned about his speech. He seems to be a bit behind other kids his age. At first, I thought it was just because he's a boy. My brother didn't start talking until he was three, and then he began speaking in sentences. But when I went to his playgroup the other day, I noticed the other children were talking a lot more. Joey hardly says anything*," she replies.

"*How does Joey communicate what he wants*?" you ask.
"*He points to things, or sometimes will say a single word like 'milk' or 'juice.' He gets frustrated and angry when we don't understand what he wants."*

"*What do you think Joey understands*?" you continue.
"*He seems to understand just about everything, but doesn't talk very much. Maybe he's just tongue-tied*!" she responds.

A review of his medical record reveals that Joey was the full term product of his G1P0 mother, with birth weight of 7lbs. 4oz. and Apgar scores of 8 and 9. Other than a mild case of jaundice, there were no problems in the perinatal period. As an infant, there were no difficulties with feeding or sleep. He began babbling at six months, but didn't speak his first word until fifteen months. By eighteen months, he could say "*mama*," "*dada*," and "*juice*." Presently, his mother states he uses approximately ten words, but doesn't combine them.

Following this reading, ask all participants *"So what do you think about this case? What would you like to focus on during our discussion today*?" List agenda items on a blackboard or flipchart. Then use the questions below to guide the discussion. Remember that the key to successfully leading a small group is facilitation of the discussion rather than lecture. Draw as many participants as possible into the discussion. Allow silences while group members think about questions. Present material from the discussion guide only when needed to complement or redirect the group discussion.

Guiding Questions for Discussion:

What are the normal language milestones for a 2½ year old child? By two and a half years of age, a child should have a large expressive vocabulary (over 200 words), use two or three word combinations to communicate, use "no" and express a question through rising intonation. In terms of receptive language, a child should be able to follow two-step (unfamiliar) commands, point to body parts when asked, and demonstrate understanding of simple prepositions (e.g., "under" the table, "on top of" the chair). Despite parental reports that a child "understands everything" many children with language delay may rely on visual or situational cues for understanding. Parents may unknowingly break commands into single steps or repeat directions frequently.

Some simple mnemonics to remember language milestones include the following:

Age	Use of language	Intelligibility
1 year	Single words	1/4 (25%)
2 years	2-word combinations	2/4 (50%)
3 years	Phrases	3/4 (75%)
4 years	Sentences	4/4 (100%)

In other words, a 2 year old's speech will be about 50% intelligible to strangers.

What is your differential diagnosis at this point? Your differential should include the following:

- Language delay/disorder
- Hearing loss
- Global developmental delay/mental retardation
- Pervasive developmental disorder/autism

- Genetic syndromes
- Impoverished environment/neglect

Later birth order, or being a twin, does not cause language delay despite common perceptions that this is the case. Parents may report, "*His brother always talks for him*." Similarly, "laziness" is not a cause of language delay, as children will communicate if they are able to. Having a frenulum short enough to prevent tongue protrusion, often referred to as being "tongue-tied," rarely affects speech and never causes true language delay.

The data on language development in bilingual environments is controversial. However, in general, bilingual children should not have delays in overall language development although they may not fully separate the two languages until age 3.

What else would you like to know? Given the differential diagnosis, you should determine if Joey's delay is confined to speech and language, or includes other areas of development. A complete developmental history, and screening with the Denver II, will help make this determination. Children with mental retardation would be more likely to manifest global delays, while children with PDD/Autism will have atypical behaviors and marked deficits in social interaction skills. Clinicians should also screen for risk factors associated with language delay, including prematurity, perinatal infection, maternal drug/alcohol use, exposure to toxic substances (lead) and recurrent otitis media with conductive hearing loss. Problems with early feeding and persistent drooling may indicate oral motor dysfunction. This will affect speech development, but not receptive language. The history should also include a thorough psychosocial assessment of the family, to exclude the possibility of environmental deprivation or parental neglect, and a family medical history for developmental delay, learning disorders, seizures, or other CNS pathology.

What should be included in your physical examination at this visit? Physical examination should include measurement of height, weight, and head circumference. The clinician should perform a full head and neck exam including pneumatic otoscopy (evidence of chronic ear infections, middle ear fluid), assessment of oral anatomy (e.g., cleft palate), and a complete neurological exam. Skin examination is important to identify lesions suggestive of neurocutaneous disorders, such as neurofibromatosis (café-au-lait spots) and tuberous sclerosis (ash-leaf spots). Clinicians should also look carefully for dysmorphic features. Some common genetic syndromes are associated with language delay, for example:

- Down Syndrome (up-slanted palpebral fissures, epicanthal folds, flattened face and occiput, hypotonia, protruding tongue, single palmar crease)
- Klinefelter Syndrome (hypogenitalism, hypogonadism, long limbs, tall slim stature)
- Fragile X (large head, prominent long ears, long face and chin, hyperextensible joints)
- Velocardiofacial Syndrome (small stature, cleft palate, prominent nose with squared nasal route, long face, microcephaly)

What further studies might you consider? All children with suspected language delay should have a *formal hearing test* to rule out any hearing loss contributing to the language delay. Clinical impressions of hearing ability are often inaccurate. Children with more

mild hearing loss may use visual cues to aid comprehension and thus not appear "hearing impaired." Hearing loss, particularly before age 5 years, impacts significantly on language development. Even fluctuating, mild to moderate conductive hearing loss related to serous otitis media may affect acquisition of language in the younger child. There are several types of tests available:

- **Tympanometry**: assesses ear drum mobility and middle ear pressure; helpful in diagnosing middle ear effusion; *does not assess hearing.*
- **Brainstem evoked auditory response**: electrophysiologic test used to assess sensorineural hearing loss; examines hearing over all components of the neural pathway, requires sedation
- **Behavioral audiometry**: may be used in children 6 months and older; visual reinforcement technique where sound presented in sound room, reinforcement (often a toy or puppet) appears if infant or child correctly turns to sound source
- **Pure tone audiometry**: may be used in children 3 years and older; evaluates hearing over the range of frequencies most critical for speech (250 - 8000 Hz); headphones used to assess hearing in each ear separately.

Lead testing should be performed if not already done. Other diagnostic studies should be ordered only when there are specific clinical indications. Blood and urine tests for perinatal infections or metabolic disorders should be obtained if there are physical anomalies, loss of skills, failure to thrive, or recurrent vomiting. Chromosome analysis and genetic consultation are indicated when dysmorphic features are seen on physical examination. EEGs and neuro-imaging studies are generally not useful unless there are focal neurologic findings or a small or large head size.

Distribute Part II of the case and have participant(s) read it aloud. Distribute Handout #1: Denver II.

Part II

A further check of Joey's medical record reveals a normal blood lead and complete blood count, and that he has had 2-3 visits per year for otitis media. You review previous results of the Denver II Developmental Screening Test and determine that Joey sat at 6 mos. and walked at 13 mos. You elicit further history from Joey's mother.

He could pick up cereal pieces at 9 mos., and his mother describes a pincer grasp at age one year. Joey played "*Peek-a-boo*" at 6 mos., and would sit with his Dad and flip through a book at 18 mos. In his playgroup, he will play alongside other children, and shares reluctantly.

You decide to re-administer the Denver II. *(See Handout #1.)*

On physical exam, Joey is at the 50th percentile for height and weight, and the 75th percentile for head circumference. He has no dysmorphic features, his tympanic membranes show mild scarring and there is clear fluid behind both. His palate is intact, and he has no caries and no difficulty with tongue protrusion.

Your careful neurological exam reveals an alert and active toddler who is a bit unhappy after your ear exam, but is easily consoled by his mother. He holds your reflex hammer, and taps his mother's knee in imitation of you. His only verbalizations are "*Mama*" and "*no*," but he does point at numerous objects, and appears to follow simple commands ("*Give Mommy your shoe*"). Muscle strength, tone, and reflexes are all normal.

You send him for audiometry/tympanometry.

Distribute Handout #2: Joey's Audiogram.

What is your assessment of Joey at this time? Developmental history reveals that Joey's motor and social milestones have been achieved on time, but Joey's language development has been delayed. The Denver II shows one "caution" in Personal-Social (i.e., wash and dry hands) and no concerns in Fine Motor-Adaptive or Gross Motor. The Language section, however, is quite concerning. Joey has numerous "failures" (e.g., combining words, point to or name picture, identify body parts) in both expressive and receptive language. The only physical finding of note is scarred tympanic membranes with a middle ear effusion. He has no findings suggestive of a chromosomal abnormality and his growth is normal. The audiogram shows mild conductive hearing loss using behavioral audiometry in sound field (SF). It is often difficult to complete separate ear testing using headphones in children under age 3. Therefore, testing is usually done in a sound field that gives results for the better ear. Hearing is tested across several frequencies and a normal hearing level is 20 decibels or less. Thus the finding of a 30-decibel level across frequencies indicates a mild hearing loss (indicated by "SF"). With bone conduction (indicated by the arrows), the hearing improves to normal (10db), indicating that this is a conductive rather than sensorineural hearing loss. Tympanometry indicates middle ear dysfunction. However, Joey's hearing is not impaired to a degree that would likely explain the magnitude of his language delay. The fact that Joey was playful and interactive with you during the physical examination suggests good social skills development despite his delayed language. These findings do not suggest a diagnosis of global delay, PDD/Autism, or a genetic syndrome. The most likely diagnosis is language delay, with hearing impairment as a potential complicating factor.

What is your plan? Joey needs a complete speech and language evaluation. This can be obtained through a children's medical center or local Early Intervention Program (EIP). As the Denver II is a screening test, you may decide to refer Joey for a comprehensive developmental assessment as well. This could include both language and cognitive testing. Delayed speech and language are the most common presentations for most global developmental disorders.

Joey will need treatment for his middle ear effusion (MEE). Although management of MEE is controversial, a reasonable plan would be course of antibiotics followed by repeat testing in 6 weeks. Joey is at greater risk given his language delay so referral to an otorhinolaryngologist should be considered for persistent MEE.

In addition to further assessment, Joey should be referred for appropriate services:

- **Early Intervention** (under age 3 years)
- **Special Education** (age 3 and above)
- **Speech and Language therapy**

Distribute Handout #3 (taken from "Using the Denver Developmental Screening Test II: *When to Watch, When to Refer, When to Reassure*") and direct participants' attention to section on Early Intervention and School-Based Services.

What will you say to his mother? At this point you may wish to have learners "role-play" talking to Joey's mother. They should be optimistic, but realistic and emphasize the importance of early intervention to ensure the best outcome.

> *"I agree with your concerns about Joey's language development. Based on my screening today, he is behind in both his ability to communicate and in what he understands. I think we need a more thorough evaluation to clarify what is going on and start treatment. Joey is eligible for early intervention services. They can do more extensive speech and language testing and provide therapy to help his language develop. I am also concerned about his hearing loss. I don't think this is "the cause" of his language delay, but it could be making it worse. I want to give Joey an antibiotic for 2 weeks and then recheck his hearing in 3 weeks. I think there is every reason to be hopeful that Joey's language will improve with these treatments. However, we will have a better idea over time by monitoring his progress."*

Distribute the Bibliography page and Epilogue. Ask someone to read the Epilogue aloud.
Distribute Handout #4: Language Disorders.

Epilogue

Joey's middle ear effusion was treated with an antibiotic, and a follow-up hearing test was normal. His speech and language evaluation through the Early Intervention Program (EIP) showed mild receptive and expressive language delay. He began speech and language therapy once a week at home and twice a week in a group at the EIP. At age 3, he was referred to the Public School System for an evaluation and continuation of services. He has made significant progress, but remains at risk for language-based learning problems.

Refer back to group's learning agenda and summarize the key teaching points that were made. This will give the group a sense of accomplishment and emphasize the important messages. Suggest further sources of reading or other information if there are agenda items that were not covered in the discussion.

Independent Learning/Prevention Exercises: Facilitators may wish to assign "Independent Learning/Prevention Exercises" to the group, particularly if time constraints hinder the completion of the case. The following list includes suggestions to explore the available community resources that focus on Language Delay that can be integrated during or after the session. If the exercise is done in the absence of the facilitator, learners should take notes on their experience, then discuss with a faculty member for feedback.

1. Brainstorm with the group about how to tell parent to promote language development by reading more to their children/being more verbal/watching less TV.
2. Check out the web site, "Reach out and Read" (www.reachoutandread.org).

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Your careful neurological exam reveals an alert and active toddler who is a bit unhappy after your ear exam, but is easily consoled by his mother. He holds your reflex hammer, and taps his mother's knee in imitation of you. His only verbalizations are "*Mama*" and "*no,*" but he does point at numerous objects, and appears to follow simple commands ("*Give Mommy your shoe*"). Muscle strength, tone, and reflexes are all normal.

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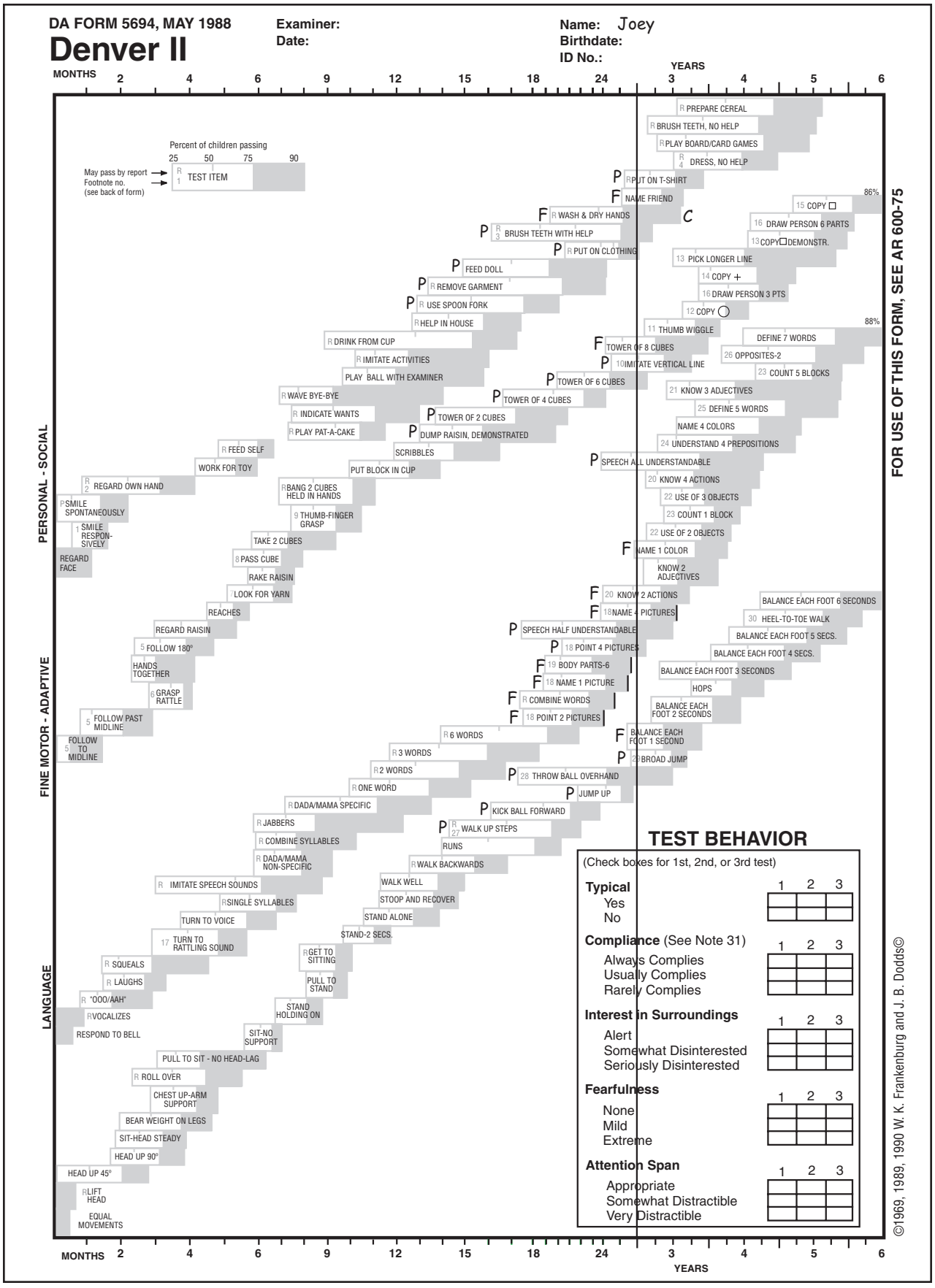
Handout #1: Denver II



The Tongue Tied Toddler
Handout #2: Joey's Audiogram

USE PLATE OR PRINT

MR. NO _____ DATE _____

PT. NAME Joseph Smith

PATIENT _____

ADDRESS _____

DATE OF BIRTH _____ B.C. NO. _____

M.A. NO. _____

DIV. _____ CLIN. _____ P.P. DR _____

REPORT OF AUDIOLOGICAL EVALUATION

DEPARTMENT OF OTOLARYNGOLOGY AND COMMUNICATION DISORDERS

DATE OF EXAM	REFERRED BY

SPEECH AUDIOMETRY

	SRT (dBHL)	SAT (dBHL)	MASK	WORD RECOGNITION %	WORD RECOGNITION dBHL	WORD RECOGNITION MASK
R						
L						
bone conduction ≤10						
S F		30				
tracked music at 50dBHL						

SPEECH AUDIOMETRY MATERIALS:
SRT (Speech Reception Threshold): _____
SAT (Speech Awaremess Threshold): _____
Word Recognition Test: _____
✔ Monitored Live Voice ___ Tape/CD ___ Male ___ Female

TEST METHODS FOR AUDIOGRAM:	RELIABILITY:
___ Conventional	✔ Good
___ Conditined Play Audiometry	___ Fair
✔ Visual Reinforcement udiometry	___ Poor
___ Behavioral Observation Audiometry	

ACOUSTIC IMMITTANCE MEASURES
ACOUSTIC REFLEX THRESHOLDS (dBHL)

PROBE EAR	STIM EAR (mode)	500 Hz	1 kHz	2 kHz
RIGHT	RIGHT (ipsi)			
	LEFT (contra)			
LEFT	LEFT (ipsi)			
	RIGHT (contra)			

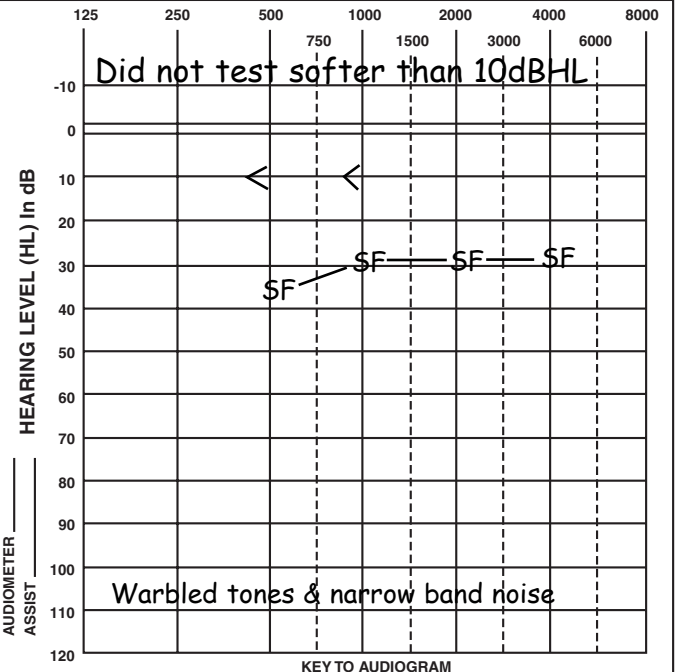
TYMPANOMETRY PROBE FREQ. (226 HZ) ___ Hz

EAR	EQUIV. CANAL VOL. (cc)	PEAK PRESSURE (daPa)	STATIC ADMITTANCE (mmho)	GRADIENT
RIGHT	.5			flat
LEFT	.5			flat

INTERPRETATION OF MIDDLE EAR MEASURES

Normal ear canal volumes c̄ no measurable eardrum mobility, consistent c̄ middle ear dysfunction

FREQUENCY IN HERTZ (Hz)



KEY TO AUDIOGRAM

	AIR CONDUCTION UNMASKED	AIR CONDUCTION MASKED	BONE CONDUCTION UNMASKED	BONE CONDUCTION MASKED	SOUND FIELD (NOT EAR SPECIFIC)	NO FESPONSE
RIGHT	○	△	<	E		
LEFT	×	□	>			
BOTH					S-F	

SUMMARY / RECOMMENDATIONS:

History: 2 1/2 year old. Hearing eval. to r/o hearing loss as contributing to speech-language delay.
Estimated expressive vocabulary of 10 words. Receptive language described as stronger.
Results: Mild conductive hearing loss for at least one ear, bilateral middle ear dysfunction.

AUDIOLOGIST'S SIGNATURE: _____

#16744-07

The Tongue Tied Toddler
Handout #3: Early Intervention and School Referral
Emily J. Davidson, MD

I. Early Intervention:

What are Early Intervention Programs (EIP)?
Early Intervention programs are designed to provide integrated developmental services for eligible children ages birth to three years. Early Intervention is administered by the Department of Public Health. Early Intervention programs have teams of professionals including: occupational and physical therapists, speech therapists, developmental educators, social workers, nurses and psychologists. The teams rely on an interdisciplinary (multiple disciplines working together) and transdisciplinary (members of the team cross discipline boundaries incorporating information from other team members into their work) models and strive to provide family focused care.

What are eligibility criteria?
1.The child has a known disabling physical or mental condition including but not limited to diagnosed chromosomal, neurological, metabolic disorders; visual or hearing impairment not corrected by medical intervention or prosthesis; or the presence of a delay in one or more areas of development, including cognitive development, physical development, vision, hearing, communication development, adaptive development, or psychosocial development.

OR

2. Any *four or more* risk factors from either of the two following lists are present:

Child Characteristics
*Birthweight <1200 grams
*Gestational age <32 weeks
*NICU admission more than 5 days
*Diagnosis of intrauterine growth retardation (IUGR) or small for gestational age (SGA)
*Weight or height <5% for age; weight for height <5%; weight for age dropped >2 major centiles in 3 mo for children <12 mo of age (or in 6 mo. for children 12-24 mo. of age)
*Chronic feeding difficulties
*Insecure attachment/interactional difficulties
*Blood lead levels > 15 mg/dl
*Suspected central nervous system abnormality
*Multiple trauma or losses

Family Characteristics
*Maternal age at child's birth <17 or maternal history of 3 or more births before age 20
*Parental chronic illness or disability affecting care giving ability
*Family lacking social supports
*Inadequate food, shelter, clothing
*Open or confirmed protective service case
*Substance abuse in the home
*Domestic violence in the home

Guideline:
Developmental delay by age and number of months delayed

AGE	DELAY
6 months	1.5 months
12 months	3 months
18 months	4 months
24 months, 30 months	6 months

Who can refer to EIPs?
Physicians, nurses, social workers, teachers, parents can all refer to Early Intervention.

How does one make a referral?
A referral should be make directly to the Early Intervention Program located near the family. A book listing the programs in your area should be available in every primary care setting. Referral should include the following information: names of child and parent(s), address, phone number (home and work), child's date of birth, primary care provider, other involved services, physicians, reason for referral, and insurance coverage.

What happens after a referral to an EIP?
Within 45 working days an assessment will take place and an Individualized Family Service Plan will be developed by the Early Intervention team along with family members. The IFSP documents the goals and resources of the family and the services that will be provided by Early Intervention.

How is Early Intervention funded?
EI evaluation and services are funded through the Department of Public Health, private insurance, and Medicaid.

II. School Services

Children with special needs are eligible for special services in the public school system. There are several relevant pieces of legislation:

Federal:
The Individuals with Disabilities Education Act (IDEA, formerly entitled the Education of the Handicapped Act, often referred to as P.L. 94-142) calls for a free public education for all children in the least restrictive environment which meets their learning needs.

Section 504 of the Rehabilitation Act of 1973 is the federal civil rights law that prohibits recipients of federal funds from discriminating against otherwise qualified disabled persons.

State:
State laws vary from state to state. As an example, in Massachusetts, Chapter 766 is the state version of the Federal law.

Who can refer to School Services?
Physicians, nurses, social workers, teachers, parents can make direct referrals.

How does one make a referral?
There is a formal process whereby any child may be referred to their local public school system for an evaluation to determine if there are any special learning needs. Parents must specifically request such an evaluation before the process can begin.

What happens after a referral to School Services?
Following the evaluation, the school staff meets with the parents to present the results and drafts an Individualized Educational Plan (IEP) if such needs are identified. The IEP includes an individual student learning profile, a list of objectives, and documentation of the specific services to be provided. Parents may then sign the plan, indicating their agreement and the services will start. Parents also have a right to dispute the results and request an outside opinion.

There are a number of models or prototypes for providing special education and the "least restrictive" environment which meets the child's needs is used. These prototypes range from services provided within a regular classroom, to some services given in a resource room, to all academics taught in a resource room or separate small classroom.

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Handout #4: Language Disorders

1. **Definition:** Language disorders are the most common developmental problems found in preschoolers (5-10% prevalence). They are a group of disorders characterized by a problem in development of any of component of speech or language, including comprehension, production, articulation and social interaction (pragmatics).

2. **Diagnosis:** Differential diagnosis includes hearing loss, mental retardation, and pervasive developmental disorders.
    - **a. History**: Risk factors include prematurity, perinatal infection, maternal drug/alcohol use, exposure to toxic substances (lead), and recurrent otitis media with conductive hearing loss. Problems with early feeding and persistent drooling may indicate oral motor dysfunction. A developmental history and screening with the Denver II help distinguish whether language delay is part of a more general developmental delay.
    - **b. Physical Examination** should include assessment of: growth parameters (including head circumference), full HEENT exam including pneumatic otoscopy (evidence of chronic ear infections, middle ear effusion) and assessment of oral anatomy (cleft palate), careful inspection for dysmorphic features, and a complete neurological exam.
    - **c. Other Examination**: All children with suspected language delay *must have formal audiologic testing***.** Clinical impressions of hearing ability are often inaccurate. Initial language screening can be completed by the physician using the Early Language Milestone Scale (2nd ed.).

      Refer for formal speech and language evaluation to document the degree of delay and plan intervention and therapy. Parent reports of "My child understands everything I say" may be misleading, as many children with language delays may use situational cues or visual clues (gestures) to help them understand.
3. **Treatment**
    - **a.** The mainstay of treatment is speech and language therapy. The type and degree of therapy should be based on individual ability and age.
    - **b.** The child should be referred to an Early Intervention Program or public school system depending on age.
    - **c.** Remedial services in reading and writing may be necessary in the school age child.
    - **d.** Behavioral therapy may help lessen misbehavior which is due to frustration with the inability to communicate. Counseling may be indicated if there is emotional distress, particularly in the older child.
    - **e.** Antibiotics may be indicated for chronic otitis media or middle ear effusion resulting on conductive hearing loss. In persistent cases, ENT referral may be warranted.

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Suggested Readings (Annotated):

Dixon SD. Two years: Learning the rules - language and cognition. In: Dixon SD, Stein MT, editors. *Encounters with Children: Pediatric Behavior and Development, Second edition.* Boston: Mosby Year Book; 1992. p. 247-262. This chapter begin with a case vignette of a 2-year-old, and includes a discussion of the normal course of both cognitive and language development. Variations in language development are discussed, as well as medical office assessment and anticipatory guidance.

Coplan JC. Normal speech and language development: An overview. *Pediatrics in Review* 1995;16(3):91-100. This is a comprehensive review article that covers normal development, epidemiology and common causes of speech and language delay. The article is written for pediatricians. Pathogenesis and pathophysiology of the problem are discussed. Clinical aspects of language delay, office management strategies, and prognosis are included.

Flax JF, Rapin I. Evaluating children with delayed speech and language. *Contemporary Pediatrics* 1998;15(10):164-172. This article is written for neurologically oriented practitioners. It covers normal language developmental milestones, "clinical pearls," a glossary of language terms, differential diagnosis and "red flags," when to refer and where. There is an emphasis on technical diagnostic terminology.

Additional Resources: Division for Children with Communication Disorders, The Council for Exceptional Children, 1920 Association Drive, Reston, VA 20191