

PedsCases Podcast Scripts

This is a text version of a podcast from Pedscases.com on "**Speech and Language Delay**". These podcasts are designed to give medical students an overview of key topics in pediatrics. The audio versions are accessible on iTunes or at <u>www.pedcases.com/podcasts</u>.

Speech and Language Delay

Developed by Emily Fong and Dr. Lyn Sonnenberg for PedsCases.com. April 19, 2018

Introduction:

Emily: Hi everyone, my name is Emily Fong and I am a medical student at the University of Alberta. With me for this podcast is Dr. Lyn Sonnenberg, the Program Director for Developmental Pediatrics at the University of Alberta. Today we will be talking about an approach to Speech and Language Delays in the clinical setting. By the end of this presentation, we hope learners will be able to:

- 1. Define and differentiate between speech and language delay
- 2. Screen for speech and language delay
- 3. Diagnose speech and language delays, and
- 4. Apply potential interventions that can be used for a child with a speech and language delay.

Clinical Case:

Dr. Sonnenberg: Here's our clinical case: A twelve month old girl named Hania presents to your office for her well baby check. Upon review of her developmental milestones today, you confirm that she had typical speech and language milestones up until the age of six months, with turning to voice, cooing and non-specific babbling, then she became a lot quieter and is no longer babbling. She does not have any specific words at this time, but the family is not worried because they speak both English and Arabic with her at home and have heard that bilingual children are slower to meet their language milestones.

Definitions:

Emily: Alright, let's start with the definition. Dr. Sonnenberg, what is speech and language delay and what is the difference between the two?

Dr. Sonnenberg: Simply put, speech delay refers to a delay in the development of producing sound, known as phonology (**speech sound production**). A child with a speech delay may have stuttering or articulation challenges as an example. Language delay refers to the delay in the development or use of language. This can involve difficulty with **expressive language** – a child's ability to use language to share thoughts, difficulty with grammar, or



vocabulary, and **receptive language** – a child's ability to understand language and interpret non-verbal gestures or cues.

Emily: Ok let me see if I understand this correctly, speech relates to sound whereas language refers to content?

Dr. Sonnenberg: That's right, the two are often interchanged, but there is a difference. Can you give me an example of a child with a speech delay and not a language delay?

Emily: Since speech delay is related to the ability to produce sounds, how about a 2 year old that cannot say 'b' sounds?

Dr. Sonnenberg: Absolutely, that would be categorized as a speech delay. For the sake of simplicity we will refer to them together as speech and language delay throughout the rest of the podcast, but keep in mind the differentiation. Now before we proceed further, I think it is important that we talk about milestones, since the failure to meet a milestone at the appropriate age is how we define delay.

Milestones:

Emily: There must be many milestones for each stage in a child's development, what would you say are the important milestones that medical students should know?

Dr. Sonnenberg: Let's start at 6 months where the infants should be responding to voice and can express themselves by babbling. At 12 months (or **one** year), an infant should be able to understand **one** step commands such as "sit" or "come" and be able to say **one** word in addition to "mama" and "dada". This word can be a word approximation. At **two** years, the toddler should be able to understand **two** step commands such as "stand up and clap your hands", say **two** words combinations, usually a noun and verb, like "mommy, up", and speech should be 50% (one over **two**) intelligible. At **three** years, they should be able to understand **three** step commands, should at least be able to use **three** words combinations, and their speech should be 75% (**three** quarters) intelligible. When they become **four** years old, they speak in full sentences and their speech should be 100% (**four**/four) intelligible.

Emily: Ok now that we have learnt more about milestones, and the difference between speech and language delay, how common are speech and language delays?

Dr. Sonnenberg: Well it depends on which age group we are looking at. Amongst preschool-aged children, aged 2 to 4.5 years, literature has reported prevalence rates for language delay from 2-19%, with speech disorders, like stuttering or making the speech sound, from 1-14%.

Risk Factors:

Emily: Are there any risk factors?



Dr. Sonnenberg: Absolutely, children with hearing deficits or craniofacial abnormalities are at a higher risk as well as children who were prematurely or born with a low birthweight. A positive family history is present 20-40% of the time. For me as a clinician, having a family history of a "late talker" in the family is not reassuring, but rather increases the urgency for intervention even further.

Screening:

Emily: Let's say I am on a pediatric rotation and a 2 year old boy comes for a well-child checkup, are there any tools that I can use to screen for speech and language delay.

Dr. Sonnenberg: The milestones for speech and language development are generally used as a broad screening method in primary care settings, but are not as specific or sensitive as a tool. Instruments specifically examining communication include the McArthur Communicative Development Inventory, Ward Infant Language Screening Test and Early Language Milestone scale amongst others. Typically, primary care physicians use assessment tools that evaluate multiple developmental components and these include the Ages and Stages Questionnaire, the PEDS, and the Nippissing.

Red flags:

Emily: So what features in the developmental history would be most concerning for speech and language delay?

Dr. Sonnenberg: There are a few red-flags you should know, which would warrant further investigation. First off, if the child does not meet the indicated milestones mentioned earlier in this podcast then it is a cause for concern. Can you think of others?

Emily: Other red flags include a decrease in vocalization beyond 6 months, not turning to names or any words at 12 months, or having a vocabulary of less than 15 words at 18 months.

Dr. Sonnenberg: That's right. It is very important that when a speech and language delay is identified, that appropriate interventions are given in timely manner. If the delay is not properly addressed, children at preschool age with speech and language delay are at a higher risk for learning disabilities when they reach school age and may exhibit difficulties in reading and written language.

Emily: I have also read that continued speech and language-related underachievement in children have been associated with increased manifestation of behavior problems and poor psychosocial adjustment.

Dr. Sonnenberg: It is important to remember that speech and language delay may also be the first indication for an autism spectrum disorder for many children. It can also be attributed to a number of other conditions such as cerebral palsy, speech disorders such as apraxia and dysarthria, hearing loss, and intellectual disability.



Apraxia vs. Dysarthria:

Emily: Since you brought it up, Dr. Sonnenberg, what is the difference between apraxia and dysarthria?

Dr. Sonnenberg: Glad you asked! I must admit, they confuse me too. Apraxia and dysarthria are both classified under speech disorders. Apraxia is a motor condition where children have difficulty coordinating muscle movement and muscle groups for speech production. Dysarthria is a disruption in muscle control that often results in weakness.

Emily: Apraxia is a planning or programming problem, whereas dysarthria is a movement problem.

Interventions:

Now that we have spoken about screening, let's talk about potential interventions and treatments. Can you think of which professions should be involved?

Dr. Sonnenberg: Like all developmental conditions, it is really important to have an interdisciplinary approach. Children suspected of having speech and language delay should be referred to a speech language pathologist and an audiologist early, basically as soon as there is a concern either by physician or parent. Often speech language pathologists have a keen sense of these conditions and can help inform the physician and/or parent of concerns with an underlying diagnosis.

We like to say, "Speech language pathology, get audiology!" It is key not to forget about hearing, as you mentioned. With the speech language pathologist, the parent sets and works on goals. Usually these include teaching the child ways to understand spoken language, showing appropriate communicative behavior, and modeling for parents different strategies to encourage their child's communication. So when it comes to speech and language delay, the role of the physician would be to refer to both to the speech and language pathologist AND to an audiologist as soon as concerns are raised. There is never a reason to wait if there are any concerns. If a hearing impairment is present, the earlier a child can have sound amplification, the better his or her hearing outcomes will be.

Emily: Can you elaborate more on the role of parents in helping their child if they have a speech and language delay?

Dr. Sonnenberg: Parents can play a major role in their child's language development if delays are identified. Some of the strategies include maintaining eye contact with child and encouraging them to focus on the parents articulating different sounds or encouraging the child to vocalize their request as opposed to anticipating their need and offering. Can you think of others?

Emily: Perhaps if the parent makes a point to label each item and object while playing with the child and repeat the words frequently with emphasis, it can help the child connect words with objects and actions.



Multilingual Environments:

A question that I have relating to a child's home environment is whether being in a multilingual environment is a factor that contributes to speech and language delay?

Dr. Sonnenberg: That is a common misconception but a multilingual environment rich in communication does not cause delay. Children should still be able to meet <u>minimum</u> milestones, though they may not be flourishing in both languages.

Case Review:

Emily: So turning back to our case with Hania, I can see that I should be quite concerned about a hearing impairment, given that her babbling stopped at around 6 months. Given that she is twelve months old, she should have one specific word, in addition to mama and dada. These are both red flags: her sudden loss of babbling at six months AND not having specific words at 12 months. Her bilingual environment had initially reassured me that everything was fine with her speech and language milestones, but I realize now that her milestones should never be delayed. The first thing I should do is arrange for an urgent hearing assessment AND arrange for a referral to a speech and language pathologist for intervention. Time is of the essence as the crucial hearing areas of the brain need to be stimulated and the longer this takes to happen, the poorer the hearing outcomes will be.

Dr. Sonnenberg: Well done Emily. Suspected hearing loss is an urgent condition, and with this case in particular with such clear signs, it usually requires the physician calling an audiologist for a stat appointment and making sure the ball doesn't get dropped along the way.

Key Learning Points:

Since we are approaching the end of this podcast, let's review the learning objectives that we set.

Emily: Today we learned about speech and language delay, specifically the definition, screening methods, diagnosis, and potential interventions and treatments. The key take home messages are:

- 1. Speech is related to sound production where language is related to content
- 2. Milestones to remember are:
 - At 1 year: a child should speak 1 word, in addition to mama and dada and follow 1 step commands
 - At 2 years: 2 word combinations spoken, 2 step commands followed, and speech should be 1/2 intelligible
 - At 3 years: 3 word combinations, 3 step commands, 3/4 intelligible
 - At 4 years, 4 word combinations (or full sentences), 4 step commands, 4/4 intelligible



3. Waiting is never a good option. The physician's responsibility is early identification and getting the "ball rolling in the right direction" - for speech and language concerns, the speech language pathologist is a physician's best friend

Dr. Sonnenberg: AND "Speech language pathology? Get audiology!" The two referrals go hand in hand.

That concludes the end of our podcast, thank you so much for your time and for sharing your expertise with us Dr. Sonnenberg!

References

Bishop DV, Clarkson B. Written language as a window in to residual language deficits: a study of children with persistent and residual speech and language impairments. Cortex. 2003 Dec 31;39(2):215-37.

Catts HW, Fey ME, Tomblin JB, Zhang X. A longitudinal investigation of reading outcomes in children with language impairments. Journal of speech, Language, and hearing Research. 2002 Dec 1;45(6):1142-57.

Law J, Garrett Z, Nye C. Speech and language therapy interventions for children with primary speech and language delay or disorder. Campbell Collaboration; 2003.

McLaughlin MR. Speech and language delay in children. American family physician. 2011 May 15;83(10):1183.

Moharir M, Barnett N, Taras J, Cole M, Ford-Jones EL, Levin L. Speech and language support: how physicians can identify and treat speech and language delays in the office setting. Paediatrics & child health. 2014 Jan;19(1):13.

Nelson HD, Nygren P, Walker M, Panoscha R. Screening for speech and language delay in preschool children: systematic evidence review for the US Preventive Services Task Force. Pediatrics. 2006 Feb 1;117(2):e298-319.