



Language

Does talking to a baby influence brain development?

Yes! Most babies learn language as a result of hearing it: hundreds of hours of conversation between a baby and his parents and other caregivers shape the developing language areas of the brain.

At birth, babies can perceive many more speech sounds than adults - too many, in fact. The more you talk to babies, the better they can focus on only the sounds of their native language. The experience of hearing speech sounds strengthens some neural pathways at the expense of others. Between six and twelve months babies begin to lose some ability to detect differences in the speech sounds of a foreign language, but at the same time they become better at detecting the sounds of their native language.

Does having the radio on bother babies?

Although babies can hear fairly well by six months, they are poor at distinguishing sounds in a noisy environment and so have a harder time knowing which sounds to pay attention to. Therefore, an environment free of continuous background noise is best for conversation between a care provider and baby.

Music can be a great tool for teaching language, but only when it is used as the focus of attention. "Background" music is generally not recommended (except for lullabies and other quiet nap time melodies) since it makes it more difficult for babies to hear the sounds of your voice. Select certain times of the day for playing games with music (singing, dancing, clapping) and allow other times to focus on conversation between you and the baby.

When can babies understand what we say to them?

Before six months, babies can recognize familiar words, but will understand few of them. The link between sound and meaning begins in the second six months, perhaps reflecting early maturation of language areas in the brain. (Language areas located near the junction of the temporal and parietal lobes of the cerebral cortex.)

While a six month old will not understand the meaning of all your words, he thoroughly enjoys the sound of your voice in partnership with his. When you talk to a baby, give him plenty of time to respond with his own babbling sounds such as baba, dada, and madabagada. By about 8-10 months of age, you will see signs that he is beginning to understand your words. When, for example, you ask, "Where's the Kitty?" he will respond by looking around for the kitty.

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Babies in the older end of this range will also begin to follow simple directions such as "Give me the ball". Such "receptive language," or, understanding what others are saying, emerges before babies speak their own first words, but is a very important step in language development.

How does looking and recognizing pictures help language and literacy learning?

What an exciting moment when a baby first shows an interest in pictures by looking, patting, pointing or cooing at them! This is a very important learning leap for young babies and is an important early literacy skill. Looking at and recognizing pictures in a book are beginning skills that eventually lead to language, reading and writing development. Research has shown that exposure to books and stories from a very early age gives children the building blocks they need to develop into readers and writers.

Judith Shickedanz, a researcher and educator, describes four different categories of early literacy skills. "Looking and recognizing" pictures is one of those categories. Long before school age, children learn about books and stories by actively listening and interacting with books. When a baby points to pictures in a book, she is letting you know that she understands something about symbols - that words and pictures represent things and ideas. She is beginning to understand that the picture of the dog represents a real dog. Her motivations to learn about and use symbols grow as she learns that this is how she can make her needs known and let people know what she is thinking. Picture symbols are easier for a young child to learn about than words, but that will come as a baby grows and develops her knowledge of symbols. Babies typically learn the most realistic symbols such as photos first and then progress to understanding more abstract symbols like line drawings and letters. That is why learning to identify pictures is important, because it is related to learning the symbol system of words.

Remember too that a baby will be motivated to interact with books and stories if she associates them with positive interactions with caregivers. A baby will continue to learn that books and stories can be comforting, fun and interesting. These positive feelings may motivate a baby to want more and more interactions with books and stories! Positive feelings about books and motivation to communicate are critical to language and literacy learning.

Children communicate in many different ways. Gestures such as pointing, looks, vocalizations and crying are all messages that a baby is sending about what he wants or needs. As a baby develops, he will begin to learn that symbols - like words and pictures - are ways to communicate too. This is an important learning leap in language and literacy development.



What you can do:

- Make sure you don't have too much noise going on around you all the time. Keep the television, background music and radio off. It doesn't have to "be quiet" for the infant, just allow for the natural noise of children to be the sounds in the room.
- Don't "plan" for the infant to "learn to talk". Your voice and the interactions you provide create an environment in which the infant will begin to understand the connection between sounds and words.
- Look at and read or tell a story from a book with pictures. This is best to do when an infant is calm, and you are able to just relax for a moment and share a nurturing, learning experience. Don't worry about finishing the book, babies rarely make it cover to cover.
- Take a break yourself. If the infant is tired of doing too much, pick her up and have her rest on your lap. You might want to read a book or a magazine out loud. She might not understand the words or the pictures, but your voice, your words, and what you are doing are "having an effect on the developing brain!"

How come some of my toddlers are using a lot of words and others are using only a few? Is this related at all to their brain development?

Toddlers vary greatly in their paths to understanding and using language. The number of words a toddler uses between 18 to 24 months of age is related to many factors, such as whether the toddler is a boy or a girl, outgoing or shy, part of a small or large family, just to name a few. (For a more detailed account of factors that influence variations in language development see Baron, 1992.)

Indeed, individuals who care for toddlers know that it is not unusual for many (though not all) girls to be ahead of boys in their use of words and expressive language skills. Likewise, it is not surprising to find that toddlers who are more social and outgoing may use more words and be more "talkative" than toddlers who are quiet or shy. Another factor that may influence how many words a toddler uses is whether he is an only child-and thus in a family of adults who talk with him a lot-or one of many children who experiences less direct adult conversation or whose siblings "talk for him."

Toddlers who cannot clearly hear the speech and language that surrounds them may also produce fewer words. Thus it is important to be aware of the hearing of infants and toddlers in your care. Frequent ear infections and even a mild hearing loss may lead to language delays. If you suspect a hearing problem share your concerns with the family. They can seek advice from their pediatrician or family practitioner.



Keeping all of the mentioned factors in mind, and realizing that they are just a few of many variations in toddlers' language experiences and environments, can help us better understand why we see so much variety among toddlers in their use of words.

Somewhere between 18 to 24 months most toddlers say around 50 words. Some toddlers say more words earlier and some may not produce 50 words until closer to 24 months, yet all are within a range of "normal" development. The important thing is that you notice an increase every month in the number of words a toddler says. If you suspect a language delay share your concerns with the toddler's family. When there is concern of a possible language delay it should be checked out immediately. Early identification of language difficulties or delays can lead to intervention that provides support for developing language and communication skills.

Shortly after a toddler begins using about 50 words, a vocabulary explosion occurs. He or she begins adding several new words to his/her spoken vocabulary every day. Interestingly, researchers have noticed that this vocabulary explosion occurs at about the same time as an increase in the number of synapses (connections between brain cells) in an important language center of the brain known as Wernicke's area. (Wernicke's area plays an important role in understanding the meanings of words, and in most people is located on the left side of the cerebral cortex.)

Another advance you may notice during the 18 to 24 month period is when toddlers begin putting two words together, such as "more cookie" and "fall down." There is a wide time range in when different toddlers begin to do this. While most start combining words somewhere between 18 to 24 months, some begin doing so as early as 14 to 15 months and others as late as 24 to 26 months. Once again, any concerns should be evaluated.

Your role as a care provider who listens to and talks with toddlers continues to be very important during this 18 to 24 month period. It appears that the amount of language that is used in conversation with children during toddlerhood influences their rate of verbal language development. Research suggests that talking with toddlers influences the growth of vocabulary. The more words a toddler hears while engaged in "conversations" with her care providers, the larger her vocabulary will be and the faster it will continue to grow.

It is important to understand that children's brains continue to be maximally open to learning language until at least four or five years of age, so even if an 18-to 24-month-old toddler is saying very few words, there is still plenty of time for early intervention and a stimulating verbal environment to influence his or her developing language skills. Be observant of whether the toddler understands what is said to him and what he is asked to do (receptive language), and whether he continues to produce new words on a steady basis



What you can do:

- Take the time to listen to your toddlers. Toddlers' speech can be difficult to understand and slow to come out. Be tolerant and try to really understand what they are saying. Encourage their expression and don't speak for them.
- Talk with your toddlers. One of the most important things you can do with your toddlers is to be an active language partner.
- Make a special effort to talk with your toddlers who are shy or quiet, even if it means you are taking part in a one-sided conversation. Act as if the toddler is your partner. Describe what the toddler is doing. Keep the door to conversation open for your budding partner.
- Repeat, expand or restate what the toddler says. This lets the toddler know that you are listening and trying to understand what he says.
- Read to your toddlers every day.
- Tell stories from your culture, history, and family experiences. Toddlers love to hear stories whether told or read to them.
- Use language play with your toddlers: rhymes, finger plays, poems, and songs that you read, recite, or make up.

Is it okay for a toddler of this age to be exposed to two different languages - to be bilingual? Is learning to speak two languages at once okay for his brain and language development?

Young children's brains are very open to the sounds and patterns of language. Toddlers are indeed capable of learning two languages simultaneously as long as they are in a consistent relationship with a nurturing care provider who speaks each language. This does not mean that an individual provider necessarily needs to be bilingual. It means, for example, that the care provider may speak Spanish to the toddler when engaged in her care - and Mom and Dad have agreed that this is what they want. Likewise, Mom and Dad will speak in English when they interact with their toddler, or Mom may speak English and Dad may speak Spanish. Consistency is the key. The toddler needs a reliable language partner when speaking and learning each particular language.

In today's world bilingualism is a skill to be valued and supported when it is the goal of the toddler's family. Infants are quite capable of learning two languages from birth. They begin life with the ability to hear the differences among the sounds of many languages. Any "foreign" sounds a child continues to hear reinforce the brain connections used to process them, so he will retain the ability to perceive and produce them. By 2-3 years, toddlers are very capable of using each language with different people in different contexts - for example, speaking Spanish with the care provider and English with Mom and Dad, or speaking English with Mom and Spanish with Grandma.



A key requirement for language learning is that it takes place in the context of a nurturing relationship. Furthermore, while the brain is especially open to the different languages at this age, it is not necessarily easy to learn more than one language, nor does it mean that the learning will take place overnight. Many factors influence how well and quickly a toddler will become bilingual, including the strength of the parents' motivation to make the child bilingual, the amount of time the child spends in the care of each language partner, how secure the toddler feels in having her needs met, and how well the care provider and toddler are able to communicate in the given language.

Remember: a toddler exposed to two languages is dealing with two very different systems of communication. While she is capable of doing this, her progress in each may appear a bit slower than if she were communicating in only one language.

What you can do:

- Communicate with the family about their goals for language learning.
- Remember that language is strongly tied to culture and has a great influence on how the toddler experiences and understands his world.
- Communicate with the toddler during your nurturing activities such as diaper changes and dressing- talk to him, respond to him, and listen to what he has to say.
- Share with the toddler the culture of your language while embracing and supporting the culture of his native language. For example, sing songs and recite poems in your language, but also welcome the songs and poems of her language even if you do not speak it. You could do this by inviting a family member to your home or center to sing or read a story or poem in the toddler's language.
- Watch for signs that you are understanding and clearly communicating with one another. Imagine yourself in a situation where you cannot understand what is said to you. You want to be sure your toddlers are not put in situations where they cannot understand what you are saying to them.
- Allow time for the toddler to practice and communicate and be prepared that language development may take a little longer when the toddler is dealing with two language systems.

Will playing loud rap music affect a toddler's brain?

Toddlers love music. Clearly the type of music they like - rap, country, classical, pop, etc. - is going to be linked to their experience with music. This experience of music will vary from family to family, culture to culture, and one geographical region to another.



There is no evidence that any one particular type of music is best for the developing brain. If a child likes a particular type of music, you will know it by the smiles and pleasure conveyed, the movement of his body to the beat and rhythm, and by his singing along when the music has words. All of these activities promote healthy emotional, social, physical, motor, cognitive, and language development and provide good experiences for the developing brain.

You do want to take special note of the word loud music. Music that is played too loud can cause damage to the ears and lead to hearing loss. This would not be in the best interests of the developing brain or for that matter any area of development. Always be certain that music is played at moderate volume - children should still be able to hear other people speaking as they listen to the music. Also be careful about playing music continually throughout the day. A continuous background of music makes it more difficult for your budding conversationalists to focus on the sounds and words of language - a most important activity at this 2-3 year-old age.

Finally, with any kind of music, as with TV, books, or other media, it is important to consider the appropriateness of the content. Some songs may contain words or themes that may not be appropriate or in the best interest of young children.

What you can do:

- Set aside specific times of the day for playing and listening to music - avoid having music run continuously.
- Play music at a moderate volume - you should not have to shout over the music for toddlers to hear you.
- Talk to parents about the kinds of music their toddlers listen to at home and find out what they seem to like.
- Use music that has appropriate content for 2-3 year-olds.
- Play a variety of music. Toddlers love to sing, move and dance - this allows them to experience a variety of tempos, rhythms and beats.
- Have some basic music instruments available for toddlers to use along with the music such as rhythm sticks and shakers.