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More talking, longer sentences help babies' brains

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Credit: CDC.gov

The sooner parents start explaining the world to their baby, the better.

That does not mean flash cards for tots, or merely pointing out objects: "Here's an orange. That's a bowl."

New research shows that both how much and how well parents talk with babies and toddlers helps tune the youngsters' brains in ways that build crucial language and vocabulary skills—a key to fighting the infamous word gap that puts poor children at a disadvantage at an even younger age than once thought.

The idea is to connect words and meaning, so the brain becomes primed to learn through context: "Let's put the orange in this bowl with the banana and the apple and the grapes."

"You're building intelligence through language," is how Stanford University psychology professor Anne Fernald explains it.

And forget dumbed-down baby talk: Longer, more complex sentences are better.

"The advice I give mothers is to have conversations with your babies," said Erika Hoff, a psychology professor at Florida Atlantic University. "Children can hear lots of talk that goes over their head in terms of the meaning, and they still benefit from it."

The research, presented Thursday and Friday at a meeting of the American Association for the Advancement of Science, comes amid a growing push for universal preschool, to help disadvantaged youngsters catch up.

But it also begs the question of whether children from low-income, less educated families need earlier intervention, such as preschool that starts at age 3 instead of 4, or higher quality day care or even some sort of "let's talk" campaign aimed at new parents to stress talking, singing and reading with tots even before they can respond. That can be difficult for parents working multiple jobs, or who may not read well or who simply don't know why it's important.

Scientists have long known that before they start kindergarten, children from middle-class or affluent families have heard millions more words than youngsters from low-income families, leaving the poorer children with smaller vocabularies and less ready to succeed academically. Fernald said by some measures, 5-year-olds from low-income families can lag two years behind their peers in tests of language development, an achievement gap that's difficult to overcome.

Brain scans support the link, said Dr. Kimberly Noble of Columbia

University Medical Center. Early experiences shape the connections that children's brains form, and kids from higher socioeconomic backgrounds devote more "neural real estate" to brain regions involved in language development, she found.

How early does the word gap appear? Around age 18 months, Stanford's Fernald discovered when she compared how children mentally process the language they hear. Lower-income kids in her study achieved at age 2 the level of proficiency that more affluent kids had reached six months earlier.

To understand why language processing is so important, consider this sentence: "The kitty's on the bench." If the youngster knows the word "kitty," and his brain recognizes it quickly enough, then he has can figure out what "bench" means by the context. But if he's slow to recognize "kitty," then "bench" flies by before he has a chance to learn it.

Next, Fernald tucked recorders into T-shirts of low-income toddlers in Spanish-speaking households to determine what they heard all day—and found remarkable differences in what's called child-directed speech. That's when children are spoken to directly, in contrast to television or conversations they overhear.

One child heard more than 12,000 words of child-directed speech in a day, while another heard a mere 670 words, she found. The youngsters who received more child-directed speech processed language more efficiently and learned words more quickly, she reported.

But it's not just quantity of speech that matters—it's quality, Hoff cautioned. She studied bilingual families and found that whatever the language, children fare better when they learn it from a native speaker. In other words, if mom and dad speak Spanish but aren't fluent in

English, it's better for the child to have a solid grounding in Spanish at home and then learn English later in school.

Next, scientists are testing whether programs that teach parents better ways to talk to tots really do any good. Fernald said preliminary results from one of the first—a program called Habla Conmigo that enrolls low-income, Spanish-speaking mothers in San Jose, California—are promising.

Fernald analyzed the first 32 families of the 120 the program will enroll. Mothers who underwent the eight-week training are talking more with their toddlers, using higher-quality language, than a control group of parents—and by their second birthday, the children have bigger vocabularies and process language faster, she said Thursday.