

Talking to babies boosts their brain power, studies show

Children whose parents speak to them least fare worst in language tests, lagging behind by up to six months at age two

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A newborn baby. Photograph: Alamy

Reading bedtime stories to babies and talking to them from birth boosts their brain power and sets them up for success at school, researchers say.

Studies on babies and toddlers found that striking differences emerged in their vocabularies and language processing skills as early as 18 months old.

Children whose parents spoke to them least came out worst in language tests, and at 24 months old some lagged behind their contemporaries by up to six months. The handicap often stayed with the children and influenced how well they did at school over the next six years.

Prof Anne Fernald, a developmental psychologist at Stanford University, said chatting with infants helped them grasp the rules and rhythms of language at an early age and provided them with a foundation to build up an understanding of how the world worked.

Repetition helped children to remember words, while learning relationships between words, such as "the horse pulls the cart", helped them to construct a picture of the world that paid dividends when they reached school age.

"You need to start talking to them from day one," Fernald said at the American Association for the Advancement of Science annual meeting in Chicago. "You are building a mind, a mind that can conceptualize, that can think about the past and the future."

Fernald described a series of experiments in which she tested children's language processing skills. In one of the tests, babies and toddlers sat on their parents' laps in front of a computer that displayed pictures of a baby and a dog side by side.

The researchers used slow-motion video cameras to record how quickly the children shifted their gaze from the wrong image to the right one when told to "look at the baby" or "look at the doggy". Half of the time they were already looking at the right image.

The test measured the children's ability to process language information. In the youngest children there was a pause before they looked at the right picture. But as their language skills developed, they shifted their gaze much faster, until they fixed on to the right image before the word baby or dog had been finished.

In one study, Fernald found that the slowest children were 200 milliseconds slower to find the right picture than the fastest ones. The different speeds were down to how much their parents talked with them. When parents chatted more with infants, their children's language processing improved and they learned new words more swiftly.

Though the difference in performance was marginal, it had a striking effect on the children's readiness for school, with some children being more than two years behind others in verbal and memory skills by the age of five.

Fernald said children developed language best when their parents or carers involved them in conversations around things the children found interesting. She said plonking a child in front of the TV or giving them an iPad to play with was no substitute for a conversation that centred on the child and their interests, and might even have damaging effects on the children's language development.

"Parents who talk more to their kids are more likely to realise their developmental potential," Fernald said. "You are obligated to feed them, wash them, and clothe them. Talk to them while you are doing it. We are not saying quit your job and home school them."

Prof Erika Hoff, a developmental psychologist at Florida Atlantic University, said parents should not restrict their conversations to simplistic baby talk. Rich and complex language, with

adjectives and subordinate clauses, helped them to learn the complex structure of language. "Children cannot learn what they don't hear," she said.

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