

## Inside the Minds of Babies



Nurses hold newborn babies in Sidon, Lebanon, on October 31, the day the United Nations Population Fund estimated that the world reached 7 billion people

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JUNE SIMMS: This is SCIENCE IN THE NEWS, in VOA Special English. I'm June Simms.

MARIO RITTER: And I'm Mario Ritter. This week, we examine scientific findings about how intelligence develops in babies.

(MUSIC)

JUNE SIMMS: Not long ago, many people believed that babies only wanted food and to be kept warm and dry. Some people thought babies were not able to learn things until they were five or six months old.

Yet doctors in the United States say babies begin learning on their first day of life. The Eunice Kennedy Shriver National Institute of Child Health and Human Development is a federal government agency. Its goal is to identify which experiences can influence healthy development in people.

Researchers at the institute note that babies are strongly influenced by their environment. They say a baby will smile if her mother does something the baby likes. A baby learns to get the best care possible by smiling to please her mother

or other caregiver. This is how babies learn to connect and communicate with other people.

The researchers say this ability to learn exists in a baby even before birth. They say newborn babies can recognize and understand sounds they heard while they were still developing inside their mothers.

MARIO RITTER: Another study has suggested that low birth weight babies with no evidence of disability may be more likely than other children to have physical and mental problems.

American researchers studied almost five hundred boys and girls. They were born in, or admitted to, one of three hospitals in New Jersey between nineteen eighty-four and nineteen eighty-seven. At birth, each child weighed fewer than two thousand grams.

The boys and girls had an average age of sixteen at the time of the study. They were asked to complete intelligence and motor skill tests in their homes. Their test results were compared with those of other children their age.

The study found that the young people with low birth weight often had more problems with motion skills than others. These problems were more common among males, those with injured nerve tissue in the brain and those who had been given oxygen supplies for days as a baby.

(MUSIC)

JUNE SIMMS: Experts say the first three years of a child's life is the most intensive period of language and speech development. This is the time when the brain is developing. Language and communication skills are believed to develop best in an environment that is rich with sounds and sights. Also, the child should repeatedly hear the speech and language of other people.

The National Institutes of Health says evidence suggests there are important periods of speech and language development in children. This means the brain is best able to learn a language during this period. Officials say the ability to learn a language will be more difficult if these periods pass without early contact with a language.

MARIO RITTER: The first signs of communication happen during the first few days of life when a baby learns that crying will bring food and attention. Research shows that most children recognize the general sounds of their native language by six months of age. By that time, a baby usually begins to make sounds. These sounds become a kind of nonsense speech over time.

By the end of the first year, most children are able to say a few simple words. But they may not understand the meaning of their words. By eighteen months of age, most children can say eight to ten words. By two years, most children are able to make simple statements, or sentences. By ages three, four and five, the number of words a child can understand quickly increases. It is at this age that children begin to understand the rules of language.

(MUSIC)

JUNE SIMMS: Many children grow up in homes where more than one language is spoken. It is clear that understanding two languages can help children as they grow older. However, new studies are showing the more immediate effects of bilingualism on babies' brains.

Researchers at the University of Washington organized one of the studies. They measured brain activity to compare babies in bilingual families to those in monolingual homes, where one language was spoken. The information they gathered is helping to explain how the early brain listens to language and how listening can influence the brain.

MARIO RITTER:

The researchers studied babies who were between six and twelve months old. The babies were not yet saying words in any language. The youngest monolingual babies were able to recognize a difference between a language used at home and another language. But by ten to twelve months of age, the monolingual babies were not identifying the sounds of the second language, only the main language spoken in their home.

In comparison, the bilingual babies did not differentiate sounds of different languages spoken to them between the ages of six and nine months. But between ten and twelve months, they could identify the different sounds of both languages.

JUNE SIMMS: Another report suggests that the effects languages have on a young brain are a result of people speaking, and not from video or audio recordings. In fact, the American Academy of Pediatrics says parents of young children should limit the time youngsters spend watching television or videos. The group says that spending time in front of the television offers no educational benefit or help to children younger than two years old.

Many videos are created especially for young children. They are advertised as learning aides. But the American Academy of Pediatrics says there is little evidence that such videos have any beneficial effect on babies. In fact, the group

is warning that too much time in front of the television can in fact slow language development in children. Instead it suggests that parents limit the time babies spend watching video screens, including televisions and computers.

MARIO RITTER: The report was released last month at a meeting of the American Academy of Pediatrics. The warning is not as severe as one the Academy made in nineteen ninety-nine. At that time, parents were advised to completely avoid television viewing for children under two years old.

The group says it now recognizes that banning all screen time is probably unrealistic in an age where video technology is everywhere. What is more helpful for the development of young children, it says, is communication and activities with people. The AAP says having the television on, even if it is not being watched directly by young children, can cause a problem.

(MUSIC)

JUNE SIMMS: Another American study has shown the effect of early education on future learning abilities. The study followed more than one thousand three hundred children from birth through the ages of ten or eleven. It found that children who received higher quality care before starting school had better language skills by those ages than children who had lower quality care.

The study is called the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development. It is said to be the largest, longest lasting and most complete study of child care in the United States.

MARIO RITTER: The children included in the study were born around nineteen ninety-one in ten areas of the country. Researchers examined the quality and amount of child care the children received until they were four and one-half years old. Child care included any care provided by people other than the child's mother that lasted at least ten hours a week. This included any care given by fathers or other family members.

The researchers then examined each child's performance in school and social development. They also measured other influences, such as the quality of classroom education and parenting.

JUNE SIMMS: The researchers examined whether the developmental qualities that had been observed in young children were still present a few years later. They found that the older children who had received higher quality child care continued to show better ability in tests of language skills.

Researchers tested the children's ability to name objects shown in a series of pictures. The study confirmed that a link between high quality child care and better test results continued as the children grew older. It also found that the children's ability was not dependent on the amount of time they had spent in child care.

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MARIO RITTER: This SCIENCE IN THE NEWS was written by Brianna Blake. I'm Mario Ritter with June Simms, who was also our producer.

JUNE SIMMS: And I'm June Simms. You can find transcripts, MP3s, and podcasts of our programs at [voaspecialenglish.com](http://voaspecialenglish.com). Join us again next week for more news about science in Special English on the Voice of America.