KU RESEARCHER FINDS MOST, BUT NOT ALL, LATE-TALKING TODDLERS CATCH UP

The world’s largest study to date on language emergence has shown that 80 percent of children with language delays at age 2 will catch up by age 7. But this also means that for one in five late-talking toddlers, language delays persist.

The findings are part of a 10-year multiple-study research project directed by Mabel Rice, the Fred and Virginia Merrill Distinguished Professor of Advanced Studies and director of the Center for Biobehavioral Neurosciences in Communication Disorders at the Life Span Institute at the University of Kansas. Funding for Rice’s research comes from the National Institute on Deafness and Other Communication Disorders, one of the National Institutes of Health, and totals nearly $6 million.

Since 2002, Rice has worked with colleagues at Curtin University in Perth, Australia, to study the language development of single and twin children in the western part of the country. Their goal is to pinpoint possible environmental, neurodevelopmental or genetic risk factors in children with Specific Language Impairment.

Published in the April issue of the Journal of Speech, Language and Hearing Research, the most recent project showed that a late start doesn’t necessarily predict ongoing language problems. Beginning with a study of 1,766 toddlers, the researchers found that boys are three times as likely as girls to be late-talking toddlers. Yet when the children were 7 years of age, no differences were found between girls and boys.

“Obviously some kind of mechanism kicks in for the boys,” Rice said. “Between the age of 2 and 7, they actually learn language faster than girls. After age 7, boys and girls stay on the same trajectory.”

Rice thinks the findings give a mixed message to parents worried about their child’s language development.

“For children who are still late talkers in school, it is important to provide early intervention and enrichment,” Rice said. “Parents should contact a speech pathologist if they have any concerns.”

According to Rice, by age 2, children should have a vocabulary of about 50 words and be starting to combine those words in two- or three-word sentences. A child with Specific Language Impairment (Late Talkers, Continued on page 2)

SPEECH AND LANGUAGE DEVELOPMENTAL MILESTONES

Speech and language are tools that humans use to communicate or share thoughts, ideas, and emotions. Language is the set of rules, shared by the individuals who are communicating, that allows them to exchange those thoughts, ideas, or emotions.

The most intensive period of speech and language development for humans is during the first three years of life, a period when the brain is developing and maturing. These skills appear to develop best in a world that is rich with sounds, sights, and consistent exposure to the speech and language of others.

There is increasing evidence suggesting that there are "critical periods" for speech and language development in infants and young children. The ability to learn a language will be more difficult, and perhaps less efficient or effective, if these critical periods are allowed to pass without early exposure to a language.

However, children can vary in their development of speech and language. As research has shown, there is a natural progression or "timetable" for mastery of these skills for each language. The milestones are identifiable skills that can serve as a guide to normal development. Typically, simple skills...
Look for a genetic basis of Specific Language Impairment.

Rice said the children in the data pool in western Australia are similar to Kansas children, both ethnically and socioeconomically. Rice's studies are, in fact, using the largest language data pool ever collected that is representative of Kansas families.

Rice is one of the 146 scientists from 20 academic departments affiliated with the Life Span Institute at KU. The Life Span Institute is one of the largest research and development programs in the nation for the prevention and treatment of developmental disabilities. The institute includes 13 centers and more than 140 programs and projects located on the Lawrence campus and KU Medical Center in Kansas City, Kan., and in Overland Park and Parsons.

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Discovering ways to identify language problems early and how best to correct them long has fascinated Mabel Rice, director of the child language doctoral program, the Merrill Advanced Studies Center, and the BNCD at KU.

Among the many research programs she has pursued during the past three decades, Rice has tracked the development of about 400 children -- many of whom are Kansans -- for 10 years, since their language problems were diagnosed around the age of 3 or 4. It is the largest longitudinal record of children with specific language impairment in the United States. The study, which involves top researchers from Iowa, England and Australia, has helped determine how language problems affect children as they age.

"Eventually, the children with language acquisition problems do move beyond that particular problem, but then there are others," said Rice, who earned her doctorate in speech pathology at KU in 1978. "The language problem creates the impression that the children are socially immature, although their social awareness is much like their peers."

Among her accomplishments, Rice developed a diagnostic test that helps educators and speech therapists determine which children have language impairments. She has examined the effects of television on children's language skills, and she serves as a children's language consultant for the hit Nickelodeon television program "Dora the Explorer." She also is studying the possible causes of language disability, which may lead to a discovery about genetic influences.

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need to be reached before the more complex skills can be learned. There is a general age and time when most children pass through these periods. These milestones help doctors and other health professionals determine when a child may need extra help to learn to speak or to use language.

The following are just a few of the important landmarks which are commonly reached at each age level:

**Birth to 5 Months:** Turns its head towards a sound source and watches your face when you speak.

**6-11 Months:** Begins to babble (says “ba-ba-ba” or “ma-ma-ma”), tries to communicate by actions or gestures, and tries to repeat your sounds.

**12-17 Months:** Points to objects, pictures, or family members, and tries to imitate simple words.

**18-23 Months:** Points to simple body parts such as “nose,” understands simple verbs such as “eat” or “sleep,” and says 8 to 10 words (pronunciation may still be unclear).

**2-3 Years:** Understands 50 words and is able to say 40 words at 24 months, and begins to use more pronouns such as “you” and “I.”

**3-4 Years:** Identifies colors, strangers are able to understand much of what is said, uses most speech sounds but may distort some of the more difficult sounds such as l, r, sh, ch, z, and th (which may not be fully mastered until age 7 or 8), and answers simple questions such as “What do you do when you are hungry?”.

**4-5 Years:** Understands complex questions and uses some irregular past tense verbs such as “ran” or “fell.”

**5 Years:** Understands time sequences (what happened first, second, third, etc.), engages in conversation, and uses compound and complex sentences.

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