

## Researcher Discovers Genetic Link to Language Disorder

A gene that has been associated with dyslexia now has been linked to another persistent disability that first surfaces in childhood - Specific Language Impairment.

A recently published study led by Mabel Rice at the University of Kansas is the first to report that a variant in the gene KIAA0319 is a likely culprit in Specific Language Impairment. Children with Specific Language Impairment, which affects about 7 percent of 5- to 6-year-olds, have no other developmental disorders, hearing loss or brain injuries but are late to begin talking. When they do talk, they use simpler sentence structure and



tion disorders and reading delays - are, in all likelihood, related.

"We've come to realize that language really sets the platform for reading to emerge and to thrive," Rice said. "Without a solid language system, it's much harder to get reading going."

immature grammar. Some also develop reading problems.

The finding is important because it shows that genes can affect language development and that other problems - such as speech produc-

Rice and a team of researchers from across the globe studied 322 individuals, including children with Specific Language Impair-

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### KU Study Leads to Language Measurement Device

A landmark KU study on how children acquire vocabulary led a Boulder, Colo., company to develop a device that records and analyzes communication between young children and parents, according to a Jan. 6 Chicago Tribune article.

According to the Tribune, the co-founder of Infuture Inc., Terrance Paul, credited the \$16 million development of LENA (Language Environment Analysis) to the book "Meaningful Differences in the Everyday Experience of American Children," by Betty Hart, professor emeritus, Bureau of

Child Research and the late Todd Risley, former professor in the Department of Applied Behavioral Science and senior scientist at the Life Span Institute.

The 1995 book was based on a 10-year study of 42 children from late infancy to age 3 (and their families) that quantified the dramatic differences in the number of words that children knew by 3. They showed that children who heard more language from early infancy through age 3 had substantially larger vocabularies at age 3 compared to children did not hear as much language in their

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ment, their parents and other family members. Participants completed diagnostic tests to determine the presence of Specific Language Impairment behavioral traits. Their genetic code was then scanned to identify mutations that family members had in common.

They found that variations in KIAA0319 had a strong effect on Specific Language Impairment traits, dyslexia and speech sound disorders - problems that persist throughout adulthood.

"It's an exciting time because we're beginning to see discoveries that have been 10 years in the making," Rice said.

Rice said that scientists know that Specific Language Impairment runs

in families so the identification of a specific gene will contribute to improved diagnosis and treatment of language, reading and speech disorders. She emphasized that families should know that although Specific Language Impairment traits can be inherited, early intervention can offset its impact on language development and reading.

Rice is the director of the Center for Biobehavioral Neurosciences in Communication Disorders and the Fred and Virginia Merrill Distinguished Professor of Advanced Studies. She is affiliated with the Life Span Institute at KU.

By [Mary-Margaret Simpson](#)  
Published February 2010 in KU Features.

<http://www.features.ku.edu/rice/>

## BNCD INVESTIGATOR HIGHLIGHT

Michael Vitevitch is an associate professor in Psychology and an affiliated scientist with KU's Life Span Institute, one of the largest research and development programs in the nation for the prevention and treatment of developmental disabilities. Vitevitch's work, published in the April 2008 issue of the Journal of Speech-Language-Hearing Research, suggests that when one part of our language network breaks down, the system has the ability to reroute itself.

"Think of the diagram of flights you see in an in-flight magazine," Vitevitch said. "In bad weather, one or two airports may be shut down but the entire system doesn't come to a halt. You can take out parts of the system but other parts pick up the slack." A cognitive psychologist, Vitevitch has long studied the mental lexicon — how words are stored and retrieved in the human brain. Though a dictionary approaches words alphabetically, research suggests that the brain organizes words differently — by sound, by word

meaning or by a combination of sound and meaning.

Vitevitch's research is currently funded by the National Institutes of Health— National Institute of Deafness and Other Communication Disorders. He is an expert in research of language and speech, speech perception, and cochlear implants.



Michael Vitevitch, Ph.D.

## 12 Tips to Help Your Child Talk

- Talk to your child when you are playing together.
- Have fun with nursery rhymes and songs, especially those with actions.
- Encourage your child to listen to different sounds, such as cars, animals, the telephone.
- Gain your child's attention when you want to talk together.
- Encourage your child to communicate in any way, not just through words.



- Increase vocabulary by giving choices, e.g. "Do you want orange or black currant?"
- Talk about things as they happen, e.g. when you are both unpacking the shopping bags.
- Listen carefully and give your child time to finish talking. Take turns to speak.
- Always respond in some way when your child says something.
- Help your child to use more words by adding to what is said, e.g. if they said "ball" you might say, "Yes, throw me the ball."
- If your child says something incorrectly, say it back the right way, e.g. "Goggy bit it." "Yes, the dog bit it, didn't he?"
- Try and have a special time with your child each day to play with toys and picture books.

Royal College of Speech & Language Therapists, 'Help Your Child To Talk,' July 2002

## Upcoming Events for Parents and Kids!

### Sertoma Schiefelbusch Communication Camp

The Sertoma-Schiefelbusch Communication Camp is a collaborative effort between the Sertoma Club and the Schiefelbusch Speech-Language-Hearing Clinic at The University of Kansas. The Communication Camp brings together children ages 4-10 years of age with and without communication challenges to explore their world and improve their communication skills while participating in camp activities. The camp is staffed by students and faculty from the Schiefelbusch Speech-Language-Hearing Clinic.

When: June 28, 2010

Time: 9 am to noon / 1 pm -4 pm

Where: Douglas County Fairground, Building 21.

For more information, visit: <http://www.sph.ku.edu/Clinics/SchClinic/> or

Contact: [jwegner@ku.edu](mailto:jwegner@ku.edu)

### 2010 KU Summer Camps

When school's out, camps are in session. KU is the place to be in the summer, with a wide variety of camps, both academic and athletic, for students of all ages.

For more information, including activities, enrollment schedules, and fees, please contact the individual camp programs listed on <http://www.camps.ku.edu/>.

### Baby & Toddler Sing and Sign Class

Classes are available for children between the ages of 6-18 months and 18-36 months and their grown-ups. Participants will learn new songs, signs, and much more!

When: every Wednesday, Thursday, and Saturday morning in April

Where: Shawnee Mission Medical Center or St. Luke South Hospital

Visit <http://www.babysingandsign.com/new/classDescription.htm> for specific class times and locations

### Research Participation Opportunity

Do you have trouble understanding your child's speech? Does your child have difficulty learning new words?

The purpose of this research project is to examine word learning by preschool children with language or speech sound delays. We want to determine how the organization of words and sounds affects children's ability to learn new words and to develop effective vocabulary teaching strategies.

Ages: 4-5 year old children with (1) language delays or (2) speech sound delays

Time commitment: 5 weekly sessions lasting 45- to 60-minutes. Sessions will be scheduled at your convenience in a suitable location (e.g., your home, nearby library, KU campus)

Benefits: free speech-language evaluation with report; small prizes for your child; compensation for travel expenses

If you want to know more about this study,

Contact: Word & Sound Learning Lab; 785-864-4873; [wrdrng@mail.ku.edu](mailto:wrdrng@mail.ku.edu)

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homes. The differences persisted through the third grade according to a follow up study by Hart and KU researchers Dale Walker, Charles Greenwood and Judith Carta.

The study showed that the amount of language a child hears in its first three years meant having a larger vocabulary at age 3 and predicted later school readiness, spoken language, early literacy and achievement level.

All of the KU researchers are associated with the Juniper Garden's Children's Project located in Kansas City, Kan., one of the 12 centers of the

Life Span Institute.



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<http://www.oread.ku.edu/2008/february/18/language.shtml>



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**About this Newsletter:**

The BNCD newsletter is designed to keep you informed about the ongoing research projects that are being conducted by BNCD researchers at the University of Kansas. Participants who have been part of recent research projects conducted by BNCD researchers, parents who have expressed interest in participating in future research, and individuals from organizations such as schools and daycare centers that have an interest in BNCD studies will receive this newsletter from time to time to keep them up-to-date about the research activities at the BNCD. If you do not wish to receive future newsletters, please call or e-mail the BNCD to have your name removed from our list. Research at the BNCD is supported in part by grant number 5 P30 DC05803 from the National Institute on Deafness and other Communication Disorders (NIDCD) at the University of Kansas.

**Springtime Puzzle Search!**

Unscramble each word. Then use the marked letters to solve the second puzzle.

- FSOWREL   
6 5 9
- RANI   
16 4
- WRAM   
10
- SUYNN   
12
- SRGAS   
2
- PYAL   
15
- TEIK   
17 3
- GARNDE   
8 7
- NGFIIHS   
11 14 1 18 19
- TPUIL   
13

v     
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

*Created with Discovery Channel School's PuzzleMaker.*