

NANCY POTTER, PHD SPEECH & HEARING SCIENCES

Understanding Childhood Communication Disorders

What connection exists between galactosemia and apraxia? That is precisely what Nancy Potter, assistant professor of speech and hearing sciences, is discovering through her pioneering research of communication disorders in children with galactosemia.

Galactosemia is a rare genetic disorder that affects one in 53,000 people in the United States. Children with galactosemia cannot tolerate lactose, a complex sugar essential to the developing brain and nervous system. Lactose consists of glucose, a main source of energy for our bodies, and galactose, a building block for myelin, which is essential for the connection fibers in our brains.

“You and I can change glucose into galactose and galactose into glucose to adjust to our bodies’ needs,” Potter explains. “What happens to children with galactosemia is that their bodies can change glucose into galactose, but they have difficulty using the galactose and changing the excess back into glucose. So they develop abnormal myelin patterns in their brains, and galactose builds up in their bodies, becoming toxic to them.”

Potter is interested in these children because more than half of them have speech disorders, typically diagnosed as apraxia (the inability to plan and program the mouth and tongue movements needed for speech). Supported by funding from the National Institutes of Health, she has tested 33 children across the nation, using a battery of speech, language, cognitive, and motor tests. The goal of Potter’s study is to examine markers of apraxia and determine the nature and relationship of co-occurring speech, language, and motor disorders in children who have classic galactosemia.

Data from a pilot study suggests that the risk of language disorders occurring together with speech disorders may be up to five times greater in galactosemic children than in children whose speech disorders are of unknown origin.

Potter is working with researchers at WSU and across the nation to solve the unknowns of this complex disorder.

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