Fragile X Syndrome and Down Syndrome: Language Profiles in Children

Joanne Roberts, Elizabeth Hennon, Kathleen Anderson, Anne Edwards, Cheryl Malkin, Elizabeth Barnes, Julia Jurgens, Lauren Moskowitz, Stephen Hooper, Lauren Nelson, Young Eun Chang, & Jan Misenheimer

FPG Child Development Institute, The University of North Carolina at Chapel Hill

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Abstract

Background

Fragile X Syndrome is the leading inherited cause of mental retardation, while Down Syndrome is the most common occurring genetic cause of mental retardation. Both boys with FXS and boys with DS have moderate degrees of mental retardation, with speech and language delays. Do boys with FXS differ from mental-age matched boys with fragile X syndrome (FXS) (3 to 14 years) with differing levels of autistic characteristics, 34 boys with Down syndrome (DS) (4 to 15 years), and 42 typically developing (TD) mental-age matched boys (2 to 6 years). All boys were tested annually one to four times using standardized tests. The boys with FXS and DS had greater delays and a slower rate of growth for both receptive and expressive vocabulary and speech production than did the TD boys after controlling for nonverbal cognitive level. Differences for receptive and expressive vocabulary and speech production between the boys with DS and FXS depended on the levels of autistic characteristics in the boys with FXS.

Study Questions

1. Do boys with FXS differ from mental-age matched TD boys in their extent of delay or rate of growth of receptive vocabulary, expressive vocabulary, and/or speech production? How much do they differ?

2. Do boys with FXS differ from mental-age matched boys with DS in their extent of delay or rate of growth of receptive vocabulary, expressive vocabulary, and/or speech production? How much do they differ?

3. Within boys with FXS, do levels of autistic characteristics influence the extent of delay or rate of growth of receptive vocabulary, expressive vocabulary, and/or speech production? What is that relationship?

Results

Conclusions

The boys with FXS and DS had greater delays and a slower rate of growth for both receptive and expressive vocabulary and speech production than did the TD boys after controlling for nonverbal cognitive level. Differences for receptive and expressive vocabulary and speech production between the boys with DS and FXS depended on the levels of autistic characteristics in the boys with FXS.