

Research Brief

A SUMMARY OF A PUBLISHED ARTICLE

Social Approach and Autistic Behavior in Children with FXS

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FINDINGS FROM CAROLINA FRAGILE X PROJECT, A SERIES OF STUDIES CONDUCTED AT THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Social avoidance or social withdrawal is one of the most common behavioral abnormalities in individuals with fragile X syndrome (FXS). About 75% of males with the full mutation exhibit high levels of shyness and anxiety with 50% report the occurrence of panic attacks. Women with the full mutation also display high levels of shyness and social anxiety. Social avoidance does not, however, appear to be a universal reaction to all people and settings. Evidence suggests that individuals with FXS are generally interested in social interaction but experience anxiety and social withdrawal as a response to unfamiliar settings and people.

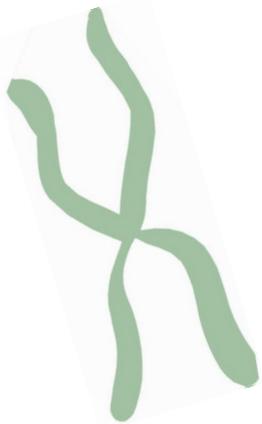
Autism has received attention within the FXS literature due to its high rate of co-occurrence with FXS. Up to 90 percent of children with FXS exhibit one or more autistic features, such as hand flapping, perseveration, self-injury, poor eye contact, and social avoidance, and 30–50% of males with FXS meet full criteria for autism disorder. The cause of autism in children with FXS is still unknown. However, researchers have examined potential predictors of autism in FXS and have reported that increased age, lower fragile X mental retardation protein (FMRP), more problem behavior, and lower adaptive behavior are associated with increased autistic behavior in children with FXS.

One of the important questions researchers are trying to answer is whether autism in FXS is the same as autism in persons without FXS, often called idiopathic autism. In

general, studies support that behavioral profiles of persons with FXS and autism are similar to those with idiopathic autism but there are not many studies in this area to have confidence that these associations are clear. For example, clinical evidence and parental report suggests that children with FXS are typically shy and socially avoidant when first meeting new people or when in an unfamiliar place; however, they “warm up” over time and are often very interested in people in general. In contrast, children with autism typically are not responsive to the social approaches of others and sometimes seem aloof or unaware of those around them which does not change over time. Despite these potential differences in social approach styles, this work has not been systematically studied in FXS, in part, because current measures specific one rating based on overall or global behavior patterns rather than allowing the measurement of behavioral change over time within a context.

The goals of this study were: (1) describe multiple measures of social approach in boys and girls with FXS, (2) examine how social approach varies across time, and (3) evaluate the relationship between social approach across time and autistic behavior in FXS.

Ninety-two males (average age 6.5 years) and 20 females (average age 4 years) with FXS participated in this study. Social approach was measured using a new measure called the Social Approach Scale (SAS) which includes



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| <ul style="list-style-type: none"> • Males and females with FXS displayed initial social avoidance that included avoidant eye contact, physical movement, and fearful facial expressions • Most males and females with FXS showed a significant change or “warming up” in their social approach over time with increased approach and positive interactions displayed after spending time with the examiner • Eye contact was more problematic and more distinct in reflecting social avoidance than physical movement or | <p>facial expressions across males and females with FXS</p> <ul style="list-style-type: none"> • A subgroup of males with FXS displayed little change in their social approach behaviors, and this was associated with elevated autistic tendencies • Males showed more social approach problems than females • Older males showed more social approach problems than younger males |
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3 scales: eye contact, facial expression, and physical movement. In this study, the 3 scales of the SAS are scored within the context of a research assessment with one measure taken within the first minute of the start of the assessment and a second measure taken at the end of the day after 3 – 4 hours of interaction had occurred. This allows the researchers to measure initial social approach as well as social approach after time interacting with the examiner has occurred.

Overall, findings from this study suggest that social approach behavior in children with FXS is affected by multiple factors, such as gender, age, duration of interaction, and autistic behavior. Males and females with FXS “warmed up” to examiners; however, this was more difficult for males with FXS as they got older. This may suggest that social avoidant behaviors increase over time as children age. Boys with FXS and high levels of autistic behavior displayed similar levels of approach during initial contact with the examiner to boys with FXS-only. However, boys with FXS and elevated autism features displayed little change in approach over time which contrasted with boys with FXS not having elevated autism features who increased social approach as the duration of time with the examiner increased. While we did not include a group of children with idiopathic autism in this study, the patterns of social approach in our subgroup of FXS with elevated autistic behavior is consistent with reports of social interactions of children with idiopathic autism suggesting that these two groups share a similar social approach profile.

These findings demonstrate that although children with FXS without autism may initially appear socially withdrawn, they tend to “warm up” to new situations and people over time. However, children with both fragile X and autism may require unique social interventions, compared to children with FXS alone. This is important when considering diagnostic determination as clinicians need to be aware of how the behavior of children with FXS varies over time to allow their assessment to take these factors into consideration. For example, measures of social approach in FXS should reflect both initial and sustained personal interaction contexts rather than just global indicators to be sensitive to the unique social approach style that appears to characterize males and females with FXS.

More recent work by the researchers of this study indicates that the social approach of boys with FXS and elevated autistic behavior is distinguished from typically developing age-matched boys and boys with FXS only (not elevated autistic behavior). Also, they report blunted cortisol (stress hormone) change is associated with boys with FXS and elevated autistic behavior which parallels the behavioral observations of little change in social approach over time. These results may also help guide future researchers in understanding the complex spectrum of social behavior abnormalities in children with FXS and autism, leading to improved diagnostic and treatment efforts for children and families affected by these disorders.

This research summary is based on the following published article: Roberts JE, Weisenfeld LA, Hatton DD, Heath M, Kaufmann WE. Social approach and autistic behavior in children with fragile X syndrome. *Journal of Autism and Developmental Disorder*. 2007; 37 (9): 1748-1760. This summary was prepared by the Fragile X Research Registry. If you have any questions or would like to contact the researchers of this study, please send an email to info@FragileXRegistry.org.