

### Educational Implications

With persons who have fragile X syndrome, sensory processing, behavioral characteristics, cognitive levels, and speech-language skills all seem to interact and affect each other. Many persons with fragile X syndrome have some cognitive weaknesses. Their overall potential may be lower than that of their peers and siblings. They still have patterns of strengths and weaknesses in their development and may do very well with certain types of learning.

Children with fragile X syndrome often have many positive behavioral characteristics. They are described as sweet and loving, with a strong desire for social interactions. Children with fragile X often have good senses of humor and enjoy jokes and humorous situations. Children with fragile X also often have a variety of behavioral challenges. Behavioral challenges are one of the main areas listed on checklists for the identification of persons with fragile X syndrome.

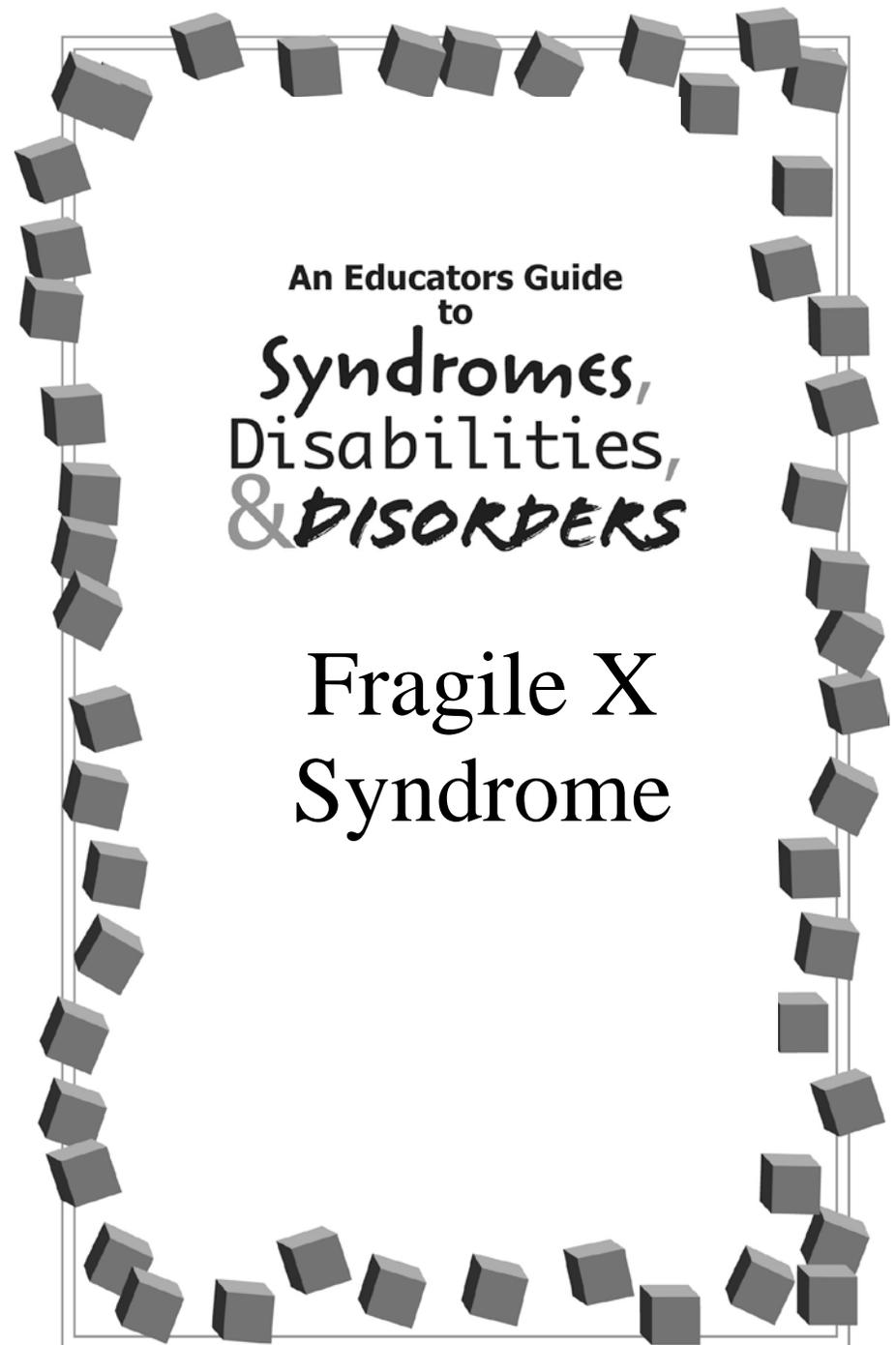
Anxiety in both boys and girls manifests itself in various ways. Some persons with fragile X become very worried about changes in routine or upcoming stressful events (e.g., fire drills, assemblies). This is often referred to as "hypervigilance". Parents often report that their children stiffen up when angry or upset, becoming rigid and very tense. Sometimes, they simply tighten up their hands. Tantrums may be a result of anxiety and a feeling of being overwhelmed. Crowds and new situations may cause boys to whine, cry, or misbehave, in attempts to get out of the overwhelming settings.

### Resources

Braden, Marcia, et. al. **Lesson Planning Guide for Students with Fragile X Syndrome: A Practical Approach for the Classroom.** NFXF, 2007. See: <http://www.fragilex.org/html/lessonplanningguide.htm>

<http://www.fragilex.org/html/resources2.htm>

<http://www.fraxa.org/>



### *Symptoms or Behaviors*

- Mental retardation
- Hyperactivity
- Short attention span
- Tactilely defensive
- Hand-flapping
- Hand-biting
- Poor eye contact
- Perseverative speech
- Sensitivity to loud noises
- Inability to control anger
- Overemotional
- Impulsiveness
- Severe temper tantrums
- Depression
- Very slurred or broken speech
- To the degree possible, provide a calm, quiet classroom environment, with breaks in a “safe” refuge away from distractions.
- Seat student as near to front and side as possible to reduce distractive stimuli.
- Use small-group or one-to-one instruction when teaching novel tasks.
- Explore use of calming strategies in concert with an occupational therapist trained in sensory integration.
- Give ample time for processing and alternative methods of responding.
- Simplify visually presented materials to eliminate a cluttered or excessively stimulating format.
- Use technological adaptations, such as the computer, for writing assignments.
- Provide a visual schedule to prompt transitions.
- Use manipulatives, visual material, videos, and models.
- Provide social skills lessons and have typical peers model appropriate behaviors.
- Provide completion or closure for activities and lessons.
- Capitalize on strengths in modeling, memory, simultaneous learning and associative learning.
- Use indirect questioning rather than direct, e.g., fill in the blank/cloze technique.
- Utilize “cloze” techniques (fill-in blanks) to help facilitate executive function skills.
- Use backward chaining—ask the student to finish up a task after you begin it.
- Provide visual cues—such as color coding, numbering, and arrows—to help organize tasks.
- Use reinforcement such as “high fives” rather than hugs or pats on the back (close physical contact tends to over-stimulate children with FXS).

### *Instructional Strategies and Classroom Accommodations*