

What Patterns of Strengths and Weaknesses in Cognition are Seen in Boys?

Many boys and men with fragile X syndrome have deficits in cognitive development, ranging from mild to severe. Men who are carriers, with only a premutation, generally have normal intelligence.

Cognitive strengths among males with fragile X include verbal labeling and single word vocabulary. Receptive (listening) vocabulary may be higher than expressive (speaking). Vocabulary for subjects of interest may also be higher than would be expected based upon overall scores.

Visual matching and visual perception tasks with meaningful information (e.g. puzzles with a known picture, as opposed to abstract block designs) are often strengths. Visual cueing is often a powerful learning strategy for boys with fragile X, and whole images, such as pictures, logos, or words can often be recognized well.

Memory for situations and for favorite TV shows, videos, and songs is excellent in many boys. Boys and men with fragile X are often wonderful mimics, memorizing tone as well as words. Success with memory tasks seems to be strongly influenced by the meaningfulness and complexity of the information presented.

Weaknesses are usually seen in higher level thinking and reasoning skills. Complex problem solving, cause and effect questions, and other abstract tasks are often areas of deficit. Visual-motor and visual construction tasks with abstract items (such as bead sequencing and block designs) are often areas of weakness.

Quantitative skills are also often a weakness for both males and females with fragile X. Arithmetic abilities may be weaknesses because of visual-spatial problems and poor concepts of quantity and number.



On adaptive functioning scales, many males score well on adaptive living items, indicating good abilities to learn self-care and household management skills, while scoring more poorly on socialization and communication items.

[Gail Harris-Schmidt](#), Ph.D., CCC-SLP
Saint Xavier University
Chicago, Illinois