Fragile X syndrome

Other names	Martin-Bell syndrome,[1]; Escalante syndrome
	Fragx-2.jpg
Specialty	Medical genetics, pediatrics, psychiatry
Symptoms	Intellectual disability, long and narrow face, large ears, flexible fingers, large testicles[1]
Complications	Autism features, seizures[1]
Usual onset	Noticeable by age 2[1]
Duration	Lifelong[2]
Causes	Genetic (X-linked dominant)[1]
Diagnostic method	Genetic testing[2]
Treatment	Supportive care, early interventions[2]
Frequency	1 in 4,000 (males), 1 in 8,000 (females)[1]

Fragile X syndrome (FXS) is a genetic disorder.[1] Symptoms often include mild to moderate intellectual disability.[1] The average IQ in males is under 55.[3][4] Physical features may include a long and narrow face, large ears, flexible fingers, and large testicles.[1] About a third of those affected have features of autism such as problems with social interactions and delayed speech.[1] Hyperactivity is common and seizures occur in about 10%.[1] Males are usually more affected than females.[1]

Fragile X syndrome is inherited in an X-linked dominant pattern.[1] Women with a premutation have an increased risk of having an affected child.[1] It is typically due to an expansion of the CGG triplet repeat within the Fragile X mental retardation 1 (FMR1) gene on the X chromosome.[1] This results in not enough of the fragile X mental retardation protein (FMRP), which is required for the normal development of connections between neurons.[1] Diagnosis requires genetic testing to determine the number of CGG repeats in the FMR1 gene.[5] Normal is between 5 and 40 repeats, fragile X syndrome occurs with more than 200, and a premutation is said to be present when an intermediate number of repeats occurs.[1] Testing for premutation carriers may allow for genetic counseling.[5]

There is no cure.[2] Early intervention is recommended as it provides the most opportunity for developing a full range of skills.[6] These interventions may include special education, speech therapy, physical therapy, or behavioral therapy.[2][7] Medications may be used to treat associated seizures, mood problems, aggressive behavior, or ADHD.[8] Fragile X syndrome is estimated to occur in 1.4 in 10,000 males and 0.9 in 10,000 females.[9]

Signs and symptoms

Prominent characteristics of the syndrome include an elongated face, large or protruding ears, and low muscle tone.

Most young children do not show any physical signs of FXS.[10] It is not until puberty that physical features of FXS begin to develop.[10] Aside from intellectual disability, prominent characteristics of the syndrome may include an elongated face, large or protruding ears, flat feet, larger testes (macroorchidism), and low muscle tone.[11][12] Recurrent otitis media (middle ear infection) and sinusitis is common during early childhood. Speech may be cluttered or nervous. Behavioral characteristics may include stereotypic movements (e.g., hand-flapping) and atypical social development, particularly shyness, limited eye contact, memory problems, and difficulty with face encoding. Some individuals with fragile X syndrome also meet the diagnostic criteria for autism.

Males with a full mutation display virtually complete penetrance and will therefore

almost always display symptoms of FXS, while females with a full mutation generally display a penetrance of about 50% as a result of having a second, normal X chromosome.[13] Females with FXS may have symptoms ranging from mild to severe, although they are generally less affected than males.

Physical phenotype

- Large, protruding ears (both)
- Long face (vertical maxillary excess)
- High-arched palate (related to the above)
- Hyperextensible finger joints
- Hyperextensible ('double-jointed') thumbs
- Flat feet
- Soft skin
- Postpubescent macroorchidism (large testicles in men after puberty)[14]
- Hypotonia (low muscle tone)[15]

Ref: https://en.wikipedia.org/wiki/Fragile_X_syndrome