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CARRIER SCREEN

What is Walker-Warburg syndrome, *FKTN*-Related?
Walker-Warburg syndrome (WWS), *FKTN*-related is an inherited disease characterized by muscle, brain, and eye abnormalities. It involves defects in the protein fukutin, which is believed to add chains of sugars to proteins involved in connecting the internal and external structure of cells, protecting muscle fibers, and development of the nervous system. The symptoms are due to abnormal cell structure and function, particularly in the brain, eyes, and muscles.[1] WWS, *FKTN*-related is the most severe disease within a group of inherited muscle disorders known as alpha-dystroglycanopathies. WWS, *FKTN*-related is also known as muscular dystrophy-dystroglycanopathy, type A4.[2]

What are the symptoms of Walker-Warburg syndrome, *FKTN*-Related and what treatment is available?
Walker-Warburg syndrome, *FKTN*-related is a disease that is present at birth, and symptoms progress throughout an individual's life. Symptoms may include[3]:

- Hypotonia (low muscle tone)
- Muscle weakness
- Eye abnormalities that can cause blindness
- Brain abnormalities, including cobblestone lissencephaly
- Hydrocephalus (fluid in the brain)
- Mental retardation
- Seizures

There is no cure for WWS. Treatment includes supportive care for symptoms, such as medications for seizures, feeding tubes, and surgical intervention for hydrocephalus. Most individuals do not live beyond three years of age. [3]

How is Walker-Warburg syndrome, *FKTN*-related inherited?
Walker-Warburg syndrome, *FKTN*-related is an autosomal recessive disease caused by mutations in the *FKTN* gene.[2] An individual who inherits one mutation is a "carrier" and is not expected to have related health problems. An individual who inherits two copies of the mutation c.1167dupA (p.F390fs), included on the Inheritest Carrier Screen, one from each parent, is expected to be affected with Walker-Warburg syndrome. Other *FKTN* mutation combinations may result in other forms of alpha-dystroglycanopathies.[4]

If both members of a couple are carriers, the risk of having an affected child is 25% in each pregnancy; therefore, it is especially important that the reproductive partner of a carrier be offered testing.

Who is at risk for Walker-Warburg syndrome, *FKTN*-related?
Walker-Warburg syndrome, *FKTN*-related can occur in individuals of all races and ethnicities. In the Ashkenazi (Eastern European) Jewish population, the carrier frequency is estimated to be 1 in 79.[5]

Having a relative who is a carrier or is affected can increase an individual's risk to be a carrier. Consultation with a genetics health professional may be helpful in determining carrier risk and appropriate testing.

What does a positive test result mean?
If a gene mutation is identified, an individual should speak to a physician or genetics health professional about the implications of the result and appropriate testing for the reproductive partner and at-risk family members.

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What does a negative test result mean?
A negative result reduces, but does not eliminate, the possibility that an individual carries a gene mutation. The likelihood of being a carrier is also influenced by family history, medical symptoms, and other relevant test results.

Where can I get more information?
- Cure CMD: www.curecmd.org
- Muscular Dystrophy Association - USA (MDA): www.mda.org
- Congenital Muscular Dystrophy International Registry (CMDIR**):** www.cmdir.org

References

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