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Familial dysautonomia

What is familial dysautonomia?

Familial dysautonomia is an inherited disease characterized by altered sensitivity to pain and temperature, poor blood pressure regulation, recurrent lung infections, lack of tears, and digestive and kidney problems. The signs and symptoms associated with familial dysautonomia are the result of abnormal development and survival of cells in the nervous system. The disease affects nerve cells that control involuntary actions such as digestion, breathing, and regulation of blood pressure, and nerve cells that control sensation such as perception of pain. Familial dysautonomia is also known as hereditary sensory and autonomic neuropathy type III and Riley-Day syndrome.[1]

What are the symptoms of familial dysautonomia and what treatment is available?

Familial dysautonomia is usually diagnosed soon after birth and symptoms include:[1,2]

- Insensitivity to pain and temperature changes
- Frequent lung infections
- Heart, circulation, and kidney problems
- Digestive problems
- Poor bone quality and increased risk of fractures
- Spinal curvature
- Lack of tears
- Learning disabilities affecting about one third of children
- Autonomic crises (vomiting, sweating, blotchy skin, increased heart rate, raised blood pressure) in almost half of patients
- Low muscle tone leading to delayed motor milestones such as walking
- Broad, unstable gait in older patients progressing to loss of the ability to walk

About half of all individuals with familial dysautonomia do not live past 30 years of age.[3] Treatment includes supportive care for symptoms.[2]

How is familial dysautonomia inherited?

Familial dysautonomia is an autosomal recessive disease caused by mutations in the *IKBKAP* gene.[1] An individual who inherits one copy of an *IKBKAP* gene mutation is a carrier and is not expected to have related health problems. An individual who inherits two *IKBKAP* mutations, one from each parent, is expected to be affected with familial dysautonomia.

If both members of a couple are carriers, the risk for 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 familial dysautonomia?

Familial dysautonomia occurs most commonly in the Ashkenazi (Eastern European) Jewish population and is extremely rare in other populations[3]. In the Ashkenazi Jewish population, the incidence of familial dysautonomia is approximately 1 in 3700[2] and the carrier frequency is 1 in31.[4]

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 genetic health professional about the implications of the result and appropriate testing for the reproductive partner and at-risk family members.

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?

Dysautonomia Foundation: http://www.familialdysautonomia.org

Familial Dysautonomia Now Foundation: http://www.fdnow.org

Familial Dysautonomia Hope Foundation: http://www.fdhope.org

References

1. Genetics Home Reference. Familial Dysautonomia: http://ghr.nlm.nih.gov/condition/familial-dysautonomia. Accessed March 13, 2012.
2. Shohat M and Halpern GJ. Familial dysautonomia. Available at http://www.ncbi.nlm.nih.gov/books/NBK1180/. Accessed: Feb 8, 2012.
3. Lehavi O *et al.* Screening for familial dysautonomia in Israel: Evidence for higher carrier rate among Polish Ashkenazi Jews. *Genet Test* 2003; 7(2):139-142.
4. Scott S *et al*. Experience with carrier screening and prenatal diagnosis for 16 Ashkenazi Jewish genetic diseases. *Hum Mut*. 2010; 31: 1-11.