Genetics Uncoded:

**FACTS ABOUT LONG CHAIN 3-HYDROXYACYL-COA DEHYDROGENASE DEFICIENCY**

AKA | LCHAD deficiency, Trifunctional protein deficiency, type 1, Long-chain 3-hydroxyacyl-coenzyme A dehydrogenase deficiency, Long-chain 3-OH acyl-CoA dehydrogenase deficiency

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**What Your Test Results Mean**

Testing results indicate that you are a carrier of long chain 3-hydroxyacyl-CoA dehydrogenase deficiency (LCHAD). Carriers typically show no symptoms of LCHAD; however, carriers are at an increased risk of having a child with LCHAD. Risk for the current or future pregnancies is dependent on your partner’s carrier status. Carrier testing of your partner is recommended in addition to consultation with a genetic counselor.

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**Long Chain 3-hydroxyacyl-CoA Dehydrogenase Deficiency Explained**

LCHAD deficiency is an inherited metabolic disorder that prevents the body from converting certain types of fats into energy. LCHAD deficiency is usually diagnosed in infancy or early childhood, when the affected individual presents with symptoms such as vomiting, low blood sugar, lack of energy, muscle weakness, liver problems, and failure to thrive. Partially metabolized fatty acids and accumulate in body tissues and cause organ damage if the disease goes untreated. This puts affected individuals at a higher risk for heart and breathing problems, comas, and seizures. The symptoms are especially noticeable when the individual goes for a long time between meals, suffers from a viral infection, or engages in intense exercise. Thus, it is important to ensure that children with LCHAD deficiency eat frequent meals, preferably high in carbohydrates and low in fats. Management is typically overseen by a group of metabolic specialists. Women whose fetuses have LCHAD deficiency are at an increased risk for pregnancy complications and should consult their doctor.

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**How the Genetics Work**

LCHAD is an autosomal recessive metabolic disorder caused by mutations in the HADHA gene. In general, individuals have two copies of the HADHA gene. Carriers of LCHAD deficiency have a single mutation in one copy of the HADHA gene while individuals with LCHAD deficiency have mutations in both copies of their genes, one inherited from each parent. Risk for two carriers to have a child with the disorder is 25%.

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**Recommended Next Steps**

Carrier testing of your partner is recommended in addition to consultation with a genetic counselor for more detailed risk assessment.

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**Questions?**

Contact us at (855) 776-9436 to set up an appointment to discuss your results in more detail with a NxGen MDx genetic counselor.