Cystic Fibrosis (CF)

Very Elevated Immunoreactive Trypsinogen (IRT) with Zero Variants Detected

Provider Next Steps

This week, you should take the following recommended actions:

- **Contact** family to notify them of the newborn screening (NBS) result and assess symptoms;
- **Evaluate** infant (poor weight gain, poor feeding, abdominal pain, constipation, and/or frequent foul-smelling greasy stools, cough, wheezing, and/or congestion. Arrange immediate consultation with a cystic fibrosis (CF) center if symptomatic; and
- **Arrange** for sweat test once medically stable and when clinically appropriate. Find contact information for accredited CF Centers on the provided resource list.

If you have questions about the NBS result or your next steps, please call **(512) 298-9696**.

Clinical Summary

CF is an autosomal recessive disorder caused by specific cystic fibrosis transmembrane conductance regulator (CFTR) gene variants. CFTR variants affect the secretory glands, including those that make mucus and sweat.
Individuals with a very elevated IRT with zero mutations detected **still have a minimal risk for CF in the absence of detected variants NOT included on the Texas NBS Panel that has 60 most common CF mutations and four additional variants.** IRT can be elevated for several reasons, most importantly CF.

Individuals with only one variant in the CFTR gene are considered carriers. A CF carrier is healthy and does not have CF. Because the Texas NBS panel includes the 60 most common CF mutations and four additional variants, it is possible that a second CFTR variant exists that was not identified by the variant panel.

Individuals with two CFTR variants have CF or CFTR-related metabolic syndrome (CRMS). Children with CF experience poor weight gain, have abnormal stooling (constipation or frequent foul-smelling greasy stool), have abdominal pain, and need medical intervention as soon as possible. Individuals with CRMS have less severe CF symptoms, including mild respiratory problems, sinusitis, pancreatitis, or infertility. Most individuals with CRMS are asymptomatic and some can develop signs and symptoms later in life. Children with CRMS should have regular check-ups at a CF center to monitor for CF conversion.

False Positives

Zero mutations or zero variants **does not** mean the risk for CF is zero.

Differential Diagnosis

A VERY elevated IRT with zero CFTR variants are primarily associated with:

- CF carrier;
- CF; and
- CFTR-related metabolic syndrome (CRMS).

Cystic fibrosis is found in all races and ethnicities.

Review with Family

Discuss this result with the family. Share the FACT sheet with the family. Educate family about signs, symptoms, and need for follow-up with a CF Center.

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Family Discussion Points

- Since Texas NBS only tests for the 60 of the most common CF mutations with four additional variants, explain the **importance of a SWEAT TEST** to confirm or rule out a diagnosis;
- Babies with CF do better if diagnosed and treated as early as possible;
- CF is a genetic disease that primarily causes thick, sticky mucus and can impact breathing and how food is digested; and
- For current information on CF, including testing, making a diagnosis, caring for a child with CF, and living with CF, please visit the CF Foundation website at cff.org. Avoid web searches on other sites that may provide inaccurate or outdated information.