Your IFNL3 Genetic Test Results and What They Mean

IFNL3: Unfavorable Response to PEG Interferon-Alpha-Based Regimens

Pharmacogenomic Testing Overview

Pharmacogenomic (PGx) testing looks at how your genes affect your response to certain medications. Genes are pieces of DNA that provide instructions to make our bodies look and work as they do. Some genes affect the way medications work in the body. When comparing a group of people, there can be slight differences in the structure of each person's genes. These differences can affect how people respond to medications.

Some gene differences might make it harder for the body to get rid of some medications. This means that the usual dose of the medication may cause unexpected side effects. Some gene differences can cause the body to use up a medication too fast. This means that normal doses will not work as well, and the person may need higher doses. Some gene differences will not let certain medications work in the body at all. This means a different medication may work better. Some gene differences increase your chances of side effects to medications. This means that you may need to avoid certain medications.

This gene test may have been part of a panel of genes or a single gene test. The results and affected medications described below may not be relevant to your current care, but could be in the future.

About the IFNL3 Gene

The test we did was for a gene called the Interferon Lambda 3 (abbreviated IFNL3). Variations in the IFNL3 gene can impact how well certain antiviral medications work in our bodies, specifically the medications PEG-interferon alpha and ribavirin, which can be used to treat the hepatitis C virus. Certain genetic variants in IFNL3 make individuals more likely to respond or not respond to these antiviral medications when being treated for the hepatitis C virus. Depending on these genetic variations, people are considered to have a Favorable Response or Unfavorable Response genotype. However, recent advances in hepatitis C viral treatment have led to several other medication options that are not impacted by the IFNL3 gene.

Your IFNL3 result puts you in the unfavorable response group. In people who have the unfavorable response genotype for IFNL3, they are less likely to respond well to PEG-interferon

alpha and ribavirin containing treatment regimens for the hepatitis C virus compared to individuals with the favorable genotype. There are now several other treatment options for the hepatitis C virus that would be better choices for you. Your healthcare provider will look at several clinical factors before deciding what antiviral treatments to use.

The following medications interact with IFNL3:

Hepatitis C Antiviral medications (used to treat the hepatitis C virus infections): PEG-interferon alpha, PEG-interferon 2a and 2b, ribavirin

Do not make any adjustments to your medications without first speaking to your healthcare provider.

Because your genes stay the same even as you age, it is important for you to share this result with your other doctors and pharmacists outside Children's Mercy. This result may affect how doctors prescribe medications throughout your life.

More Information

- Research continues to be done on what medications are affected by genetic test results. For more details about the IFNL3, please go to www.clinpgx.org.
- If you have questions about your pharmacogenetic test results or specific treatment options, discuss them with your healthcare provider or call 816-601-3360 to schedule an appointment at the Children's Mercy GOLDILOKs Clinic.
- If interested in volunteering for pharmacogenetic research, please contact the Children's Mercy Research Institute at pharmacogeneticsresearch@cmh.edu.

Revised October 2025