



# Your *CYP2C9* Genetic Test Results and What They Mean

*CYP2C9*: Poor Metabolizer #601



# Common differences in the *CYP2C9* gene can affect how you respond to some medicines

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We recently tested you for the *CYP2C9* gene. This info sheet explains the test, your results, and what your doctor may do with that information.

Genes are pieces of DNA that provide instructions to make our bodies look and work as they do. Some genes affect the way medicines work in the body. When comparing a group of people, there can be slight differences in each gene's structure. These differences can affect how people respond to medicine.

Some gene differences might make it harder for the body to get rid of some medicines. This means that usual doses of the medicine could give some people unexpected side effects. Some gene differences can cause the body to use up a medicine too fast. This means that normal doses won't work as well and the person may need higher doses. Some gene differences won't let certain medicines work in the body at all. This means a different medicine may work better.

**What we tested:** We tested a gene called Cytochrome P450 2C9 (abbreviated *CYP2C9*). This gene makes an enzyme that breaks down or metabolizes medicines in the body. Breaking down a medicine can either make it work as intended or make it stop working. It's common to have slight variations in the *CYP2C9* gene that affect how enzymes work. Depending on these variations, people will fall into one of three possible groups:

1. **Poor metabolizers** – The *CYP2C9* enzyme has very little activity. Poor metabolizers break down some medicines very slowly and are likely to need different doses than normal metabolizers or need a different medication.

2. **Intermediate metabolizers** – The CYP2C9 enzyme has reduced activity. Intermediate metabolizers break down some medicines slower and may need more close monitoring of side effects when starting or increasing dosing of certain medications.
3. **Normal metabolizers** – The CYP2C9 enzyme has normal activity and breaks down medications as expected.

## Your result indicates you are a CYP2C9 poor metabolizer.

Several medications could be affected, the following are among those broken down fully or partially by the CYP2C9 enzyme:

Non-Steroidal Anti-Inflammatory Drugs (NSAIDs): Celecoxib, Ibuprofen, Meloxicam, Lornoxicam, and Flurbiprofen.

Other medications: Phenytoin, Warfari

Some of the medications listed above, namely the “NSAIDs,” can be purchased at your local pharmacy or grocery store. Consider talking to your provider about all medications that might be affected by these results. Do not make any changes to your medications without talking to your doctor first. It is important to tell your doctor all the medicines and supplements you are taking.

Research continues to be done on what medicines are affected by genetic test results. For more details about which medicines are broken down by CYP2C9, please go to [www.cincinnatichildrens.org/gps](http://www.cincinnatichildrens.org/gps) or [www.pharmgkb.org](http://www.pharmgkb.org).

If you have questions about your pharmacogenetic test results from CCHMC, call 513-636-4474 or email [gpsconsult@cchmc.org](mailto:gpsconsult@cchmc.org).

*Questions about individual health concerns or specific treatment options should be discussed with your physician. Revised October 2023*



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