

# Pharmacogenetic Testing for CYP2D6

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## What is pharmacogenetic testing?

**Pharmacogenetic testing** is a type of DNA test that uses your **genetic profile** (information about your specific genes) to predict how your body will respond to specific medications. Your provider may recommend pharmacogenetic testing to help identify what medication or medication dose might work best for you.

## What is CYP2D6?

**CYP2D6** (sip-two-d-six) stands for cytochrome P450 2D6, which is a substance in your body that helps to activate (turn-on) or inactivate (turn-off) certain medications you may take. The ability of CYP2D6 to activate or inactivate medications varies between different people based on their DNA. About 1 in 50 (2%) people have **fast CYP2D6 activity**, meaning their body can activate or inactivate certain medications more quickly, while about 1 in 5 (20%) of people have **slow or very slow CYP2D6 activity**, meaning their bodies take more time to activate or inactivate certain medications.

## How is the testing done?

There are several methods to obtain a DNA sample, including through a blood draw, saliva (spit) collection, or cheek swab. Your provider will share the specific method for your test with you. After collecting the sample it is sent to a clinical laboratory that evaluates your DNA and identifies the CYP2D6 activity you likely have.

## **How will my provider use the test result?**

Your provider will use the result to determine which medications are most likely to work well for you. Some examples of medications that can be personalized based on the CYP2D6 pharmacogenetic test include:

- Atomoxetine (Strattera)
- Amitriptyline (Elavil)
- Fluvoxamine (Luvox)
- Nortriptyline (Pamelor)
- Ondansetron (Zofran)
- Tamoxifen (Nolvadex)

## **Your provider will attempt to determine your treatment based on:**

- Your CYP2D6 pharmacogenetic test result
- Your other medications and conditions
- The medications your provider is considering prescribing

## **Treatments you could benefit from include:**

- A different medication
- A lower dose of that medication
- A higher dose of that medication

## **What should I do with the test result?**

Your providers at Michigan Medicine will be able to view this test result to help determine the best medications for you. If you see providers at other institutions let them know that you have been tested for CYP2D6 and share your result with them so that they can also use this information to personalize your medications.

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