

Gene Test for Medicines: Patient/Parent Information

Throughout this document, references to "You" and "Your" may stand for either an adult patient or for the parents or legal guardians of a pediatric patient.

What are genes?

Genes are pieces of DNA that we inherit from our parents. Genes provide the instructions to make our bodies look and work as they do.

What do genes have to do with medicines?

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 react to medicine.

1. 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.
2. 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.
3. Some gene differences won't let certain medicines work in the body at all. This means a different medicine may work better.

What is this gene test called?

The gene test being considered for you is called a pharmacogenetic test. It is easier to call it a PG test.

Is the PG test required?

Most PG tests are optional. A few new medicines are designed for people with certain cancers or infectious diseases. A PG test of a tumor or a person's blood may be needed to know if a medicine will work. Most times you can be treated with standard medicine doses without this PG test. Make sure you understand why your doctor is recommending a PG test for you.

What do you need for the PG test?

About ½ teaspoon of your blood is needed for the PG test. It is also possible to do the test on scrapings from the inside of your cheek. Special brushes are needed to obtain the cheek scrapings.

Why do you want to do a PG test?

A PG test can be done before or after a medicine is given to you.

Before a medicine is given:

A PG test may help your doctor choose the medicine and dose that will work best for you.

After a medicine is given:

A PG test may help the doctor understand why you are having problems with a medicine. The test may also help your doctor decide if a different dose or different medicine should be tried.

What are the potential benefits of a PG test?

- The test may improve the chances that the medicine will help you as intended.
- The test may lower the chance of severe side effects from the medicine.
- The PG test for the medicine may only need to be done once in a lifetime. The test looks at common gene differences. If the common gene differences are found in your blood, then the test will not need to be repeated.
- The gene tested today may be important for medicines that you need in the future.

What are some of the limitations of the PG test?

- The test only looks at common gene differences. This means if the test does not find any of the common gene differences, you could still have one or more rare gene differences. The test will not detect rare gene differences. Some of these rare differences might affect how you react to the medicine.
- Gene differences are only one of many factors that can affect how you react to medicine. A few examples of other factors are your age, weight, other medicines and illnesses. Your doctor will need to consider these factors along with the PG test results.

Is there anything else I should know about the PG test?

In the future, some of these common gene differences may be found to be associated with other medical conditions.

The test results may be important for other family members. Biologic brothers, sisters and parents may have one or more of the same tested genes in common.

How much does the PG test cost?

The cost of the PG test depends on many factors. Insurance companies usually cover the costs of genetic tests that are used to guide medical management. Insurance companies vary in their coverage policies. It is wise to ask them directly whether or not they will cover the cost of PG testing.

How long does it take to get the test results?

Test results on a blood sample will be ready in 2 business days. Test results on a sample of cheek scrapings will be ready in 4 business days.

How will I learn about the test results?

The doctor or nurse will discuss the test results. The doctor will receive a report from the laboratory. The report will describe how your doctor can adjust your medicine based on your test results.

Will the gene result be in the medical records?

Yes. Cincinnati Children's strictly follows HIPAA guidelines to protect medical information.

What will happen to my sample?

Your DNA from the blood sample may be stored for up to two years in case future tests are needed. Neither your sample nor DNA will be used for research purposes.