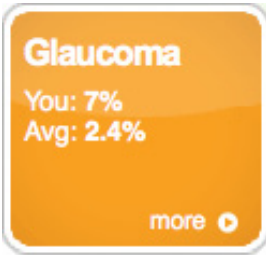


Navigenics Health Compass: Sample genetic counseling session with a patient

Case History: 50 year-old female identified as having a 3-fold increased risk for glaucoma

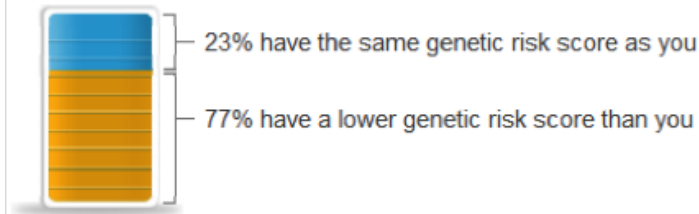


Patient: I'd like to discuss my results for glaucoma. How do I make sense of them?

Genetic Counselor (GC): Let's review the information in your report. We'll begin with your Health Compass Overview page. The box for Glaucoma indicates that your estimated lifetime risk, based on the genetic marker we tested, is 7%, which compares to 2.4% – the average lifetime risk for a female.

Let's click on the box and go to the "Summary page." The figure at the top provides another way to look at your risk compared to a sample population. Here, we see that 23% have the same genetic risk score as you. 77% have a lower genetic risk score than you.

Here's another way to look at your risk. In a sample population:



* Our sample population comes from the International HapMap Project, the largest publicly available database of human genome variation. It consists of 60 Americans with European ancestry.



Now, let's scroll down the page to the pie chart. This pie chart shows that both genetic and environmental (or non-genetic) factors play a role in the development of glaucoma. In fact, based on studies of identical twins, we know that about 87% of the risk and about 13% from genetic factors. To provide a more thorough assessment of your risk for glaucoma, it is important to consider family history and other potential risk factors.

For example, do you have a personal or family history of glaucoma or blindness? What is your ancestry?

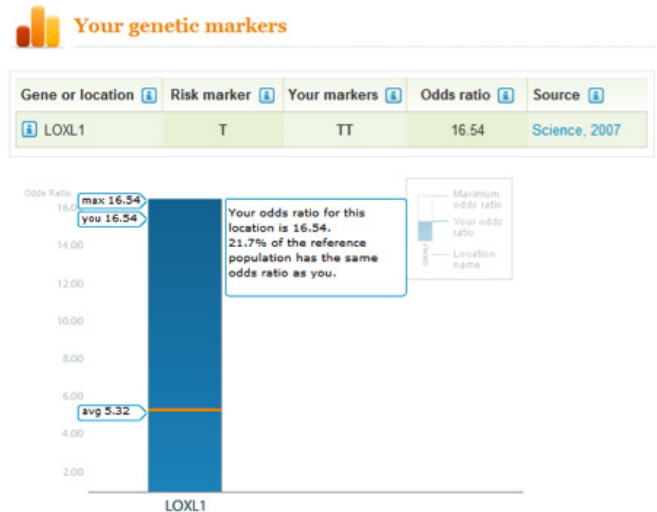
- African Americans have higher risk than Caucasians.
- Have you had hypertension, eye injury, heavy steroid use, myopia, or diabetes.

Patient: No, there is no personal or family history that I am aware of and I don't have any of the risk factors you mentioned. How does your test determine that I am at increased risk?

GC: To answer your question, let's take a look at the Your DNA page. Scroll down to the section, What we found for glaucoma.

We looked at a place in your DNA code where a one-letter difference raises your odds of exfoliation glaucoma. At this location, there are two markers, for a total of two possible risk markers. You have both of the risk markers we looked for. As we look at the table, we see that at this particular location on your genome, we looked for the risk marker T. It's possible to have 0, 1, or 2 copies of T. In your case, you inherited 2 copies, one from your mother and one from your father. The table also shows your odds ratio

– how much your odds of developing the condition are increased based on your genetic markers: The higher the number, the greater the increase. For instance, an odds ratio of 3.0 means that you have three times the odds of developing the condition. An odds ratio of 1.0 means you have no risk markers. We can also click on the link, "Show graphic version." This shows the odds ratio as a bar chart. When we mouse over the blue bar, we see your odds ratio as well as the average odds ratio and the maximum odds ratio.



Patient: So, does this mean that I will definitely develop glaucoma?

GC: No. It means that your genetic risk is higher than that of the general population, but as we discussed, both genetic and environmental factors contribute to the development of the condition. Knowing your genetic risk can lead to early screening and possible treatment, increased awareness, and lifestyle changes that may lower your risk for developing this condition.

Patient: What should I do next?

GC: We've compiled some helpful information for you on the What you can do page. First, we recommend that you discuss your concerns with your doctor, who can do an initial assessment of symptoms and refer you to an ophthalmologist or a qualified optometrist for baseline glaucoma screening tests (see Sharing results with your doctor). Remember to tell your doctor if you are taking medications that cause or worsen eye pressure or glaucoma symptoms like corticosteroids (e.g., prednisone). This page also includes information about promising and preliminary prevention measures that may affect eye pressure, such as limiting caffeine intake and getting regular exercise.

Patient: Where can I get more information about glaucoma?

GC: We encourage you to visit the About glaucoma page, which provides more detailed information about the condition, and the "More information" page, which includes information about clinical trials, support groups, and additional resources.

One additional important point is that as researchers discover new genetic risk markers and preventive strategies for glaucoma, we will automatically update your results for one year (this is included in your Navigenics service). We encourage you to revisit your results when they are updated and recontact us if you or your doctor have additional questions.