

# Genetic Insights: quick reference guide for healthcare providers

This guide is intended to facilitate a discussion between a provider and their patient.

## Genetic Insights test results: **ATM-associated hereditary cancer**

### Key results

A variant called c.7271T>G (p.Val2424Gly) associated with an increased risk of breast cancer in females was found in the *ATM* gene.

### Next steps

#### Clinical recommendations

*Genetic Insights is a screening test and not intended for diagnosis. A follow-up genetic test should be performed in a clinical setting before any other action is taken.*

*Refer your patient to a genetic counselor specializing in hereditary cancer.*

*Genetic counselors can provide counseling on the implications of this test result and next steps for your patient.*

#### Resources

##### Ready to order?

Check with your institution and/or patient's insurance about the preferred testing laboratory.

Blueprint Genetics® offers hereditary cancer testing. To confirm this test result, **targeted variant testing** for the variant identified is available. You can order a confirmation test here: [Blueprint Genetics/TVT](https://www.blueprintgenetics.com/TVT)

##### Have questions?

Call **1.866.GENE.INFO** (1.866.436.3463) to speak to a specialized Quest genetic counselor or geneticist available to healthcare providers to discuss test selection and results.

Your patient can schedule a 1-on-1 remote genetic counseling session through their online Genetic Insights Cancer Risk Report at no additional cost.

To find a genetic counselor with expertise in hereditary cancer practicing in your patient's area for an in-person session, please visit [FindAGeneticCounselor.NSGC.org](https://www.findageneticcounselor.org)

#### Patient conversation starters:

Patient conversation starters summarize the preceding information in plain language to support meaningful conversations between you and your patient.

[FindAGeneticCounselor.NSGC.org](https://www.findageneticcounselor.org)

Your Genetic Insights test is a screening test. The next step is to have your result confirmed with a second genetic test.

It's also important that you talk with a genetic counselor. Genetic counselors are experts in genetics and can help you understand this result and potential next steps.

You can access a genetic counselor through your online Genetic Insights dashboard at no additional cost to you, and we can discuss a referral to a local genetic counselor.

Visit [QuestDiagnostics.com/Genetic-Health-Screening](https://www.questdiagnostics.com/Genetic-Health-Screening) for more information about this test.

## What is *ATM*-associated hereditary cancer?

The DNA variant c.7271T>G (p.Val2424Gly) in the *ATM* gene is associated with a higher lifetime risk of breast cancer in females, often with an earlier age of onset than the general population.<sup>1</sup>

In females with the c.7271T>G (p.Val2424Gly) *ATM* variant, the chance of developing breast cancer by age 70 may be as high as 69%, much higher than the typical lifetime chance of 13%.<sup>2,3</sup>

Other DNA variants in the *ATM* gene have been associated with increased risks of ovarian, prostate, pancreatic, and other cancers. More data is needed to understand the risks of these cancers in people with the c.7271T>G (p.Val2424Gly) variant.<sup>4</sup>

Other DNA variants in the *ATM* gene have been associated with an increased risk of breast cancer in females, however the risk is likely not as high as in people with the c.7271T>G (p.Val2424Gly) variant.<sup>2</sup>

People with a confirmed *ATM* DNA variant are recommended to undergo more frequent cancer screening, typically starting at earlier ages than in the general population.<sup>2</sup>

*See the Management options section for more detail.*

---

## What this result means for family members

Family members may have the same DNA variant. The DNA variant was most likely inherited from a parent. Full siblings and children have a 50% chance of having this variant.

In people with a confirmed DNA variant in the *ATM* gene, cascade genetic testing for other family members 18 years and older may help inform their risks and screening protocols.<sup>1,2</sup> A genetic counselor can help determine the most appropriate testing options.

It is also important to note that if 2 people, each with 1 *ATM* variant, have children together, each child has a 1 in 4 chance of having a serious condition called ataxia-telangiectasia.<sup>2</sup>

Therefore, it is strongly recommended that people share their results with their biological relatives and reproductive partners.

### Patient conversation starters:

There is a particular DNA variant that may appear in the *ATM* gene. Females with this specific DNA variant have a higher than typical chance of developing breast cancer.

People with this DNA variant should have screenings earlier in life and more often than typical. This increases the chance that if cancer develops, it's detected as early as possible.



### Patient conversation starters:

DNA variants in the *ATM* gene can be inherited or passed down from parents to their children. A specific variant was identified in your screening.

Your close relatives, like your parents, full siblings, and children, have a 50% (or 1 in 2) chance of having the same DNA variant. Other relatives might also have the same DNA variant.

Also, if 2 people who both have an *ATM* DNA variant have children together, then each of their children would have an increased chance (1 in 4) of having a serious but rare condition that affects the muscles and immune system.

Sharing these results with your family members and reproductive partners is important so they can decide if they want to have genetic testing.

## Management options

There are options for cancer risk management for people with a DNA variant in the *ATM* gene. Clinical guidelines from the National Comprehensive Cancer Network® (NCCN®) for people with a confirmed *ATM* DNA variant and no personal history of an associated cancer include<sup>2</sup>:

Cancer Type	Guidelines for people with 1 <i>ATM</i> DNA variant
<i>Breast (assigned female at birth)</i>	Annual mammogram starting at 40 years (or earlier based on family history)  Consideration of breast MRI with contrast starting at age 30-35 years (or earlier based on family history)  Discuss risk-reducing options based on family history
<i>Ovarian</i>	Discuss options based on family history
<i>Pancreatic</i>	Consider pancreatic cancer screening based on family history
<i>Prostate</i>	Unknown or insufficient evidence for screening or management beyond standard guidelines

### Patient conversation starters:

It's recommended that people with a DNA variant in the *ATM* gene have cancer screenings earlier and more often than typical. This way, cancer is more likely to be caught in the early stages when it's most treatable.

If your test result is confirmed, it's important to work with the right specialists—like a medical oncologist and a geneticist—to find cancer screening and risk-reducing options that are right for you.

See NCCN for complete recommendations. Guidelines and recommendations may change over time.

If the test result is confirmed, local centers for excellence in hereditary cancer should be consulted for further clinical management.

## Additional resources

The following advocacy groups have additional information and resources about *ATM*-associated hereditary cancer:

**Facing Our Risk of Cancer Empowered (FORCE):** [FacingOurRisk.org](http://FacingOurRisk.org)  
**Foundation for Women's cancer:** [FoundationForWomensCancer.org](http://FoundationForWomensCancer.org)  
**Susan B. Komen Foundation:** [Komen.org](http://Komen.org)



## References

1. National Comprehensive Cancer Network®. NCCN Clinical Practice Guidelines in Oncology: Genetic/Familial High-Risk Assessment: Breast, Ovarian, and Pancreatic (Version 3.2023). Accessed February 15, 2023. [www.nccn.org](http://www.nccn.org)
2. van Os NJ, Roeleveld N, Weemaes CM, et al. Health risks for ataxia-telangiectasia mutated heterozygotes: a systematic review, meta-analysis and evidence-based guideline. *Clin Genet*. 2016;90(2):105-117. doi:10.1111/cge.12710
3. National Cancer Institute. Cancer Stat Facts: Female Breast Cancer. Accessed December 15, 2022. <https://seer.cancer.gov/statfacts/html/breast.html>
4. Southey MC, Goldgar DE, Winqvist R, et al. PALB2, CHEK2 and ATM rare variants and cancer risk: data from COGS. *J Med Genet*. 2016;53(12):800-811. doi:10.1136/jmedgenet-2016-103839

This information is not a substitute for medical advice, diagnosis, or treatment. The diagnosis or treatment of any disease or condition may be based on personal history, family history, symptoms, a physical examination, laboratory test results, and other information considered important by a healthcare provider.

Individuals should talk with a healthcare provider about the meaning of genetic test results and before stopping, starting, or changing any medication or treatment.

Genetic Insights is a test developed and performed by Quest Diagnostics. The test results are not diagnostic and do not determine overall chances of developing a disease or health condition. The tests are not cleared or approved by the US Food and Drug Administration.

## QuestDiagnostics.com

Quest, Quest Diagnostics, any associated logos, and all associated Quest Diagnostics registered or unregistered trademarks are the property of Quest Diagnostics. All third-party marks —® and ™—are the property of their respective owners. © 2023 Quest Diagnostics Incorporated. All rights reserved. M11998 4/2023