



BRCA1/BRCA2 (Selected Variants)

The following pages provide examples of
Frequently Asked Questions (FAQs)
from the report.

These FAQs are based on six report outcomes:

Female

- [Variants not detected](#)
- [Variant detected \(BRCA1\)](#)
- [Variant detected \(BRCA2\)](#)

Male

- [Variants not detected](#)
- [Variant detected \(BRCA1\)](#)
- [Variant detected \(BRCA2\)](#)

Variants not detected (female)

What does this test do?

This test looks for 44 variants in the BRCA1 and BRCA2 genes linked to certain hereditary cancers.

Females with the genetic variants included in this test have a greatly increased risk for breast and ovarian cancer. Males with these genetic variants have an increased risk for male breast cancer and may also have an increased risk for prostate cancer. In addition, variants in the BRCA1 and BRCA2 genes may be associated with an increased risk for pancreatic cancer and potentially other cancers.

This test does not include all possible genetic variants that may increase a person's risk of developing breast, ovarian, prostate, pancreatic, or other cancers.

What does this test **not** do?

This test does not diagnose any type of cancer or any other health conditions. Only a healthcare professional can do that.

This test should not be used to make medical decisions. Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.

This test does not tell you if you have cancer or if you will definitely develop cancer in the future.

This test does not take into account other risk factors for breast, ovarian, prostate, pancreatic, and other cancers, such as personal and family health history. Thus, this test does not provide a complete assessment of your overall risk of developing these cancers.

This test does not include all possible genetic variants that may increase your risk of developing cancer. More than 4,000 variants in the BRCA1 and BRCA2 genes have been linked to hereditary breast, ovarian, prostate, and pancreatic cancer. Variants in other genes have also been linked to these hereditary cancers.

Who is at risk for breast, ovarian, prostate, and other cancers?

A person's risk of developing breast, ovarian, prostate, and other BRCA-related cancers depends in part on their sex assigned at birth.

- **Breast cancer:** Everyone is at risk of developing breast cancer. However, breast cancer risk is much higher in people whose sex assigned at birth is female than in people whose birth sex is male.
- **Ovarian cancer:** Everyone with ovaries is at risk of developing ovarian cancer. This includes cisgender women, transgender men, non-binary individuals who have ovaries, and intersex individuals who have ovaries. People without ovaries — including cisgender men and transgender women — are not at risk.
- **Prostate cancer:** Everyone with a prostate is at risk of developing prostate cancer. This includes cisgender men, transgender women, non-binary individuals who have a prostate, and intersex individuals who have a prostate. People without a prostate — including cisgender women and transgender men — are not at risk.
- **Pancreatic cancer:** Everyone is at risk of developing pancreatic cancer. This means that people of all birth sexes and genders are at risk.

The impact of genetics and other factors on cancer risk has been studied primarily in cisgender individuals, and the risk estimates provided in this report are based on those studies. Risk estimates are not as well understood for transgender, non-binary, and intersex people, partly due to a lack of research on the potential impacts of certain interventions, environmental factors, and social factors. For example, gender-affirming hormone therapies may impact breast, ovarian, and prostate cancer risk. Likewise, gender-affirming surgery that removes breast tissue is likely to reduce breast cancer risk, but exact risk estimates are not currently available. As new research is conducted, we hope that we will be able to provide more tailored information for transgender, non-binary, and intersex people.

In this report, we use the word "female" to refer to people whose sex at birth is female and who have ovaries, and "male" to refer to people whose birth sex is male and who have a prostate. We made this decision as a way of highlighting that BRCA-related cancer risks depend on which reproductive organs a person has. But we recognize that being categorized by birth sex may be an uncomfortable experience for some people, and we do not mean to delegitimize anyone's gender identity.

For this report, the interpretation of your genetic result depends on the birth sex you reported in your account settings.

The report says this report does **not** include the majority of BRCA1 and BRCA2 variants found in people of most ethnicities. What does this mean?

There are more than 4,000 variants in the BRCA1 and BRCA2 genes, and most of those variants are not included in this report.

The ability of this report to identify people with a BRCA1 or BRCA2 variant varies by ethnicity. For example, about 90% of people of Ashkenazi Jewish descent with a BRCA1 or BRCA2 variant have one of three specific variants included in this report (BRCA1 c.68_69del, BRCA1 c.5266dup, or BRCA2 c.5946del). The variants in this report account for a much smaller proportion of cancer-related BRCA1 and BRCA2 variants found in people of other ethnicities, including about 30-40% among African Americans, people of European descent, and people of Hispanic or Latino descent; about 5-25% among people of East Asian descent; and up to 35% among people of South Asian descent.

Although the variants included in this report may be more or less common in different populations, the effect of BRCA1 and BRCA2 variants on a person's cancer risk is well understood in people of many ethnicities. This means that, regardless of ethnicity, people with a BRCA1 or BRCA2 variant have an increased risk of developing certain cancers. Females with a variant have a greatly increased risk of developing breast and ovarian cancer and may have an increased risk for pancreatic cancer and potentially other cancers. Males with a variant have an increased risk of developing male breast cancer and may have an increased risk for prostate cancer, pancreatic cancer, and potentially other cancers.

Where can I learn more about cancer, support groups, and other resources?

You can learn more about breast and ovarian cancer from the following resources:

- American Cancer Society
- Breastcancer.org
- Susan G. Komen
- National Ovarian Cancer Coalition
- FORCE: Facing Our Risk of Cancer Empowered (for hereditary breast and ovarian cancer)

You can learn more about male breast cancer and prostate cancer from the following resources:

- American Cancer Society
- Prostate Cancer Foundation
- Breastcancer.org
- HIS Breast Cancer Awareness
- Susan G. Komen

You can learn more about pancreatic cancer from the following resources:

- American Cancer Society
- Pancreatic Cancer Action Network

If you have questions about your results or how they might affect you or your family, a genetic counselor may be able to help. Learn more about genetic counseling.

You can review the BRCA1/BRCA2 (Selected Variants) tutorial [here](#).

My report says **zero variants** were detected. What does this mean?

This means you do not have any of the genetic variants we tested. However, it does not mean your cancer risk is reduced. You could still have a variant that is not included in this test. In addition, most cases of cancer are not caused by inherited genetic variants, so factors such as lifestyle, environment, and family history are also important.

The genetic variants we tested account for only a small percentage of breast and ovarian cancer cases. So even though you don't have any of the variants we tested, you still have a risk of developing breast and ovarian cancer.

About 1 in 8 females develops breast cancer during their lifetime, and 1 in 80 develops ovarian cancer. The risk is higher for people with a family history of breast or ovarian cancer.

Other factors can also affect your risk of developing breast and ovarian cancer, even if you do not have any genetic variants. Learn more about other factors.

My report says **zero variants** were detected. Does this mean I'm not at risk of developing breast and ovarian cancer?

No. Females with zero variants detected still have a risk of developing breast and ovarian cancer. You could still have a variant that is not included in this test; more than 4,000 variants in the BRCA1 and BRCA2 genes have been linked to hereditary breast

and ovarian cancer. In addition, most cases of cancer are not caused by inherited genetic variants, so factors such as lifestyle, environment, and family history are also important. So even though you don't have the variants we tested, you still have a risk of developing breast cancer, ovarian cancer, and other cancers.

About 1 in 8 females will develop breast cancer during their lifetime, and 1 in 80 will develop ovarian cancer. The risk is higher for people with a family history of breast or ovarian cancer.

Other factors can also affect your risk of developing breast and ovarian cancer, even if you do not have any genetic variants. Learn more about other factors.

It is important to continue with any cancer screenings your healthcare provider recommends. Learn more about cancer screening.

My report says **zero variants** were detected, but I have a personal or family history of breast or ovarian cancer. What does this mean for me?

Females with a family history of breast or ovarian cancer have a higher risk of developing these cancers themselves.

You do not have any of the genetic variants we tested. But there are more than 4,000 variants in the BRCA1 and BRCA2 genes associated with a greatly increased risk for breast and ovarian cancer. Our test only includes 44 of those variants. Variants in other genes have also been linked to hereditary breast and ovarian cancer, and non-genetic factors also influence the risk of developing these cancers. Learn more about other factors.

It is important to discuss your personal or family history of cancer with a healthcare professional, who can help you determine if additional genetic testing is appropriate. Genetic counseling can also help you understand your results and your options for additional testing. Learn more about genetic counseling.

My report says **zero variants** were detected. What are some things I could do?

Your genetic result means you do not have any of the genetic variants we tested. However, because these genetic variants only account for a small percentage of breast and ovarian cancer cases, your result doesn't give you much new information about your risk for these cancers.

There are many other genetic and non-genetic factors that can affect your risk, which this test does not take into account. Learn more about other factors.

It is important to continue with any cancer screenings your healthcare provider recommends. Learn more about cancer screening.

Talk to a healthcare professional if:

- You have a personal or family history of breast cancer, ovarian cancer, or any other type of cancer.
- You think you might have breast cancer, ovarian cancer, or any other type of cancer.
- You have questions about other risk factors you may have.

Variant detected (BRCA1, female)

What does this test do?

This test looks for 44 variants in the BRCA1 and BRCA2 genes linked to certain hereditary cancers.

Females with the genetic variants included in this test have a greatly increased risk for breast and ovarian cancer. Males with these genetic variants have an increased risk for male breast cancer and may also have an increased risk for prostate cancer. In addition, variants in the BRCA1 and BRCA2 genes may be associated with an increased risk for pancreatic cancer and potentially other cancers.

This test does not include all possible genetic variants that may increase a person's risk of developing breast, ovarian, prostate, pancreatic, or other cancers.

What does this test **not** do?

This test does not diagnose any type of cancer or any other health conditions. Only a healthcare professional can do that.

This test should not be used to make medical decisions. Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.

This test does not tell you if you have cancer or if you will definitely develop cancer in the future.

This test does not take into account other risk factors for breast, ovarian, prostate, pancreatic, and other cancers, such as personal and family health history. Thus, this test does not provide a complete assessment of your overall risk of developing these cancers.

This test does not include all possible genetic variants that may increase your risk of developing cancer. More than 4,000 variants in the BRCA1 and BRCA2 genes have been linked to hereditary breast, ovarian, prostate, and pancreatic cancer. Variants in other genes have also been linked to these hereditary cancers.

Who is at risk for breast, ovarian, prostate, and other cancers?

A person's risk of developing breast, ovarian, prostate, and other BRCA-related cancers depends in part on their sex assigned at birth.

- **Breast cancer:** Everyone is at risk of developing breast cancer. However, breast cancer risk is much higher in people whose sex assigned at birth is female than in people whose birth sex is male.
- **Ovarian cancer:** Everyone with ovaries is at risk of developing ovarian cancer. This includes cisgender women, transgender men, non-binary individuals who have ovaries, and intersex individuals who have ovaries. People without ovaries — including cisgender men and transgender women — are not at risk.
- **Prostate cancer:** Everyone with a prostate is at risk of developing prostate cancer. This includes cisgender men, transgender women, non-binary individuals who have a prostate, and intersex individuals who have a prostate. People without a prostate — including cisgender women and transgender men — are not at risk.
- **Pancreatic cancer:** Everyone is at risk of developing pancreatic cancer. This means that people of all birth sexes and genders are at risk.

The impact of genetics and other factors on cancer risk has been studied primarily in cisgender individuals, and the risk estimates provided in this report are based on those studies. Risk estimates are not as well understood for transgender, non-binary, and intersex people, partly due to a lack of research on the potential impacts of certain interventions, environmental factors, and social factors. For example, gender-affirming hormone therapies may impact breast, ovarian, and prostate cancer risk. Likewise, gender-affirming surgery that removes breast tissue is likely to reduce breast cancer risk, but exact risk estimates are not currently available. As new research is conducted, we hope that we will be able to provide more tailored information for transgender, non-binary, and intersex people.

In this report, we use the word "female" to refer to people whose sex at birth is female and who have ovaries, and "male" to refer to people whose birth sex is male and who have a prostate. We made this decision as a way of highlighting that BRCA-related cancer risks depend on which reproductive organs a person has. But we recognize that being categorized by birth sex may be an uncomfortable experience for some people, and we do not mean to delegitimize anyone's gender identity.

For this report, the interpretation of your genetic result depends on the birth sex you reported in your account settings.

The report says this report does **not** include the majority of BRCA1 and BRCA2 variants found in people of most ethnicities. What does this mean?

There are more than 4,000 variants in the BRCA1 and BRCA2 genes, and most of those variants are not included in this report.

The ability of this report to identify people with a BRCA1 or BRCA2 variant varies by ethnicity. For example, about 90% of people of Ashkenazi Jewish descent with a BRCA1 or BRCA2 variant have one of three specific variants included in this report (BRCA1 c.68_69del, BRCA1 c.5266dup, or BRCA2 c.5946del). The variants in this report account for a much smaller proportion of cancer-related BRCA1 and BRCA2 variants found in people of other ethnicities, including about 30-40% among African Americans, people of European descent, and people of Hispanic or Latino descent; about 5-25% among people of East Asian descent; and up to 35% among people of South Asian descent.

Although the variants included in this report may be more or less common in different populations, the effect of BRCA1 and BRCA2 variants on a person's cancer risk is well understood in people of many ethnicities. This means that, regardless of ethnicity, people with a BRCA1 or BRCA2 variant have an increased risk of developing certain cancers. Females with a variant have a greatly increased risk of developing breast and ovarian cancer and may have an increased risk for pancreatic cancer and potentially other cancers. Males with a variant have an increased risk of developing male breast cancer and may have an increased risk for prostate cancer, pancreatic cancer, and potentially other cancers.

Where can I learn more about cancer, support groups, and other resources?

You can learn more about breast and ovarian cancer from the following resources:

- American Cancer Society
- Breastcancer.org
- Susan G. Komen
- National Ovarian Cancer Coalition
- FORCE: Facing Our Risk of Cancer Empowered (for hereditary breast and ovarian cancer)

You can learn more about male breast cancer and prostate cancer from the following resources:

- American Cancer Society
- Prostate Cancer Foundation
- Breastcancer.org
- HIS Breast Cancer Awareness
- Susan G. Komen

You can learn more about pancreatic cancer from the following resources:

- American Cancer Society
- Pancreatic Cancer Action Network

If you have questions about your results or how they might affect you or your family, a genetic counselor may be able to help. Learn more about genetic counseling.

You can review the BRCA1/BRCA2 (Selected Variants) tutorial [here](#).

My report says **one variant** was detected in the BRCA1 gene. What does this mean?

This means you have one of the genetic variants we tested.

Females with a BRCA1 variant have a greatly increased risk of developing breast cancer and ovarian cancer. They also have an increased risk for early-onset breast cancer (before age 45) and multiple breast cancers, and may also develop ovarian cancer at an earlier age. In addition, they may have an increased risk for pancreatic cancer.

However, this result does not mean you have developed or definitely will develop any of these cancers.

It is important to discuss this result with a healthcare professional. Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.

People with one BRCA1 variant are also considered carriers for a condition called Fanconi anemia group S. They do not have the condition themselves, but their children may be at risk if both parents are BRCA1 carriers. Consider talking with a genetic counselor if you are thinking about having children. Learn more about genetic counseling.

What does **greatly increased risk** mean?

A "greatly increased risk" means that, based on your genetic result for this test, your chances of developing breast and ovarian cancer are much higher than average. Studies have found that 45-85% of females with a BRCA1 variant develop breast cancer, compared to about 13% for the general population. Similar studies have found that about 39-46% of females with a BRCA1 variant develop ovarian cancer, compared to 1-2% for the general population. See Scientific Details for more information.

People with a BRCA1 variant may also have an increased risk for pancreatic cancer. We cannot provide a numerical risk estimate because the risk for pancreatic cancer is not as well understood in people with your genetic result.

It is important to share this result with a healthcare professional.

My report says that females with a BRCA1 variant have a **45-85% chance** of developing breast cancer and a **39-46% chance** of developing ovarian cancer. What do those percentages mean? And why is there such a large range?

A 45-85% chance of developing breast cancer means that, out of 100 females with a BRCA1 variant, between 45 and 85 will develop breast cancer by the age of 70.

A 39-46% chance of developing ovarian cancer means that, out of 100 females with a BRCA1 variant, between 39 and 46 will develop ovarian cancer by the age of 70.

Many studies have looked at variants in the BRCA1 and BRCA2 genes, and these studies report somewhat different risk estimates. Some of these differences may be due to other factors besides the BRCA1 and BRCA2 variants. For example, females with a BRCA1 or BRCA2 variant who have a family history of breast or ovarian cancer have a higher chance of developing these cancers themselves. Because the group of participants included in each study is different, the risk estimates may be different as well.

Your exact risk of developing breast and ovarian cancer depends on many factors, including family history, lifestyle, and genetic factors not included in this test. A healthcare professional can help you get a more precise estimate of your risk.

My report says that BRCA1 and BRCA2 variants may potentially be associated with an increased risk for other cancers. What does this mean?

Research is ongoing to determine whether having a BRCA1 or BRCA2 variant may increase risk for cancers besides those mentioned in the report. For example, some

research suggests that BRCA1 and BRCA2 variants may increase risk for melanoma, but other studies are inconclusive. A healthcare professional can use your personal and family health history — along with your genetic result for this report — to help you better understand your risk for other cancers.

What does it mean that people with one BRCA1 variant are carriers for a condition called Fanconi anemia group S?

This result does not mean that you have Fanconi anemia group S. But your result may be relevant for your family.

Fanconi anemia group S is a genetic condition characterized by physical differences, developmental delay, and an increased risk for cancer.

People with one BRCA1 variant do not have Fanconi anemia group S but are considered carriers. This condition is extremely rare and requires inheriting specific BRCA1 variants from both parents. If you are considering having children, talk to a genetic counselor to learn more about what this result may mean for your family.

My report says **one variant** was detected in the BRCA1 gene. What are some things I could do?

This result is associated with a greatly increased risk of developing breast and ovarian cancer. People with your result may also have an increased risk for pancreatic cancer. It is important to share this result with a healthcare professional, such as a doctor or genetic counselor.

Professional guidelines recommend that females with your genetic result undergo more rigorous cancer screenings and consider certain medications and surgeries that can reduce the risk for cancer. Learn more about cancer screening and prevention.

For more information about what to think about and possible next steps, see this help article.

It is important to discuss your result with a healthcare professional. **Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.**

How could my result affect my family?

Since you share DNA with your family members, they may also be interested in your result. If you are thinking about talking to family members about your results, see this article for a discussion of things to consider before having the conversation.

Because you have one variant, it is expected that:

- Each of your children has a 50% chance of inheriting this variant from you.
- One of your parents has this variant.
- Each of your siblings has a 50% chance of having this variant.

Because the variant we detected is associated with an increased cancer risk in both males and females, your adult family members may wish to learn more about their cancer risk. They can talk with a healthcare professional, such as a doctor or genetic counselor, to help them decide if genetic testing is right for them. Learn more about genetic counseling.

People with one BRCA1 variant are also considered carriers for a condition called Fanconi anemia group S. They do not have the condition themselves, but their children may be at risk if both parents are BRCA1 carriers. If you are considering having children, talk to a genetic counselor to learn more about what this result may mean for your family.

I have questions about my results. Who should I talk to?

It's normal to have questions or concerns after viewing this report. Some people feel anxious, upset, or worried about their risk or risk for their family members. Others simply want to understand their results better or talk to someone about what they can do. Genetic counselors can help. Genetic counselors are healthcare professionals with special training in genetics and genetic testing. Learn more about genetic counseling.

For more information about what to think about and possible next steps, see this help article.

It is important to talk with a healthcare professional about your result and options.

Variant detected (BRCA2, female)

What does this test do?

This test looks for 44 variants in the BRCA1 and BRCA2 genes linked to certain hereditary cancers.

Females with the genetic variants included in this test have a greatly increased risk for breast and ovarian cancer. Males with these genetic variants have an increased risk for male breast cancer and may also have an increased risk for prostate cancer. In addition, variants in the BRCA1 and BRCA2 genes may be associated with an increased risk for pancreatic cancer and potentially other cancers.

This test does not include all possible genetic variants that may increase a person's risk of developing breast, ovarian, prostate, pancreatic, or other cancers.

What does this test **not** do?

This test does not diagnose any type of cancer or any other health conditions. Only a healthcare professional can do that.

This test should not be used to make medical decisions. Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.

This test does not tell you if you have cancer or if you will definitely develop cancer in the future.

This test does not take into account other risk factors for breast, ovarian, prostate, pancreatic, and other cancers, such as personal and family health history. Thus, this test does not provide a complete assessment of your overall risk of developing these cancers.

This test does not include all possible genetic variants that may increase your risk of developing cancer. More than 4,000 variants in the BRCA1 and BRCA2 genes have been linked to hereditary breast, ovarian, prostate, and pancreatic cancer. Variants in other genes have also been linked to these hereditary cancers.

Who is at risk for breast, ovarian, prostate, and other cancers?

A person's risk of developing breast, ovarian, prostate, and other BRCA-related cancers depends in part on their sex assigned at birth.

- **Breast cancer:** Everyone is at risk of developing breast cancer. However, breast cancer risk is much higher in people whose sex assigned at birth is female than in people whose birth sex is male.
- **Ovarian cancer:** Everyone with ovaries is at risk of developing ovarian cancer. This includes cisgender women, transgender men, non-binary individuals who have ovaries, and intersex individuals who have ovaries. People without ovaries — including cisgender men and transgender women — are not at risk.
- **Prostate cancer:** Everyone with a prostate is at risk of developing prostate cancer. This includes cisgender men, transgender women, non-binary individuals who have a prostate, and intersex individuals who have a prostate. People without a prostate — including cisgender women and transgender men — are not at risk.
- **Pancreatic cancer:** Everyone is at risk of developing pancreatic cancer. This means that people of all birth sexes and genders are at risk.

The impact of genetics and other factors on cancer risk has been studied primarily in cisgender individuals, and the risk estimates provided in this report are based on those studies. Risk estimates are not as well understood for transgender, non-binary, and intersex people, partly due to a lack of research on the potential impacts of certain interventions, environmental factors, and social factors. For example, gender-affirming hormone therapies may impact breast, ovarian, and prostate cancer risk. Likewise, gender-affirming surgery that removes breast tissue is likely to reduce breast cancer risk, but exact risk estimates are not currently available. As new research is conducted, we hope that we will be able to provide more tailored information for transgender, non-binary, and intersex people.

In this report, we use the word "female" to refer to people whose sex at birth is female and who have ovaries, and "male" to refer to people whose birth sex is male and who have a prostate. We made this decision as a way of highlighting that BRCA-related cancer risks depend on which reproductive organs a person has. But we recognize that being categorized by birth sex may be an uncomfortable experience for some people, and we do not mean to delegitimize anyone's gender identity.

For this report, the interpretation of your genetic result depends on the birth sex you reported in your account settings.

The report says this report does **not** include the majority of BRCA1 and BRCA2 variants found in people of most ethnicities. What does this mean?

There are more than 4,000 variants in the BRCA1 and BRCA2 genes, and most of those variants are not included in this report.

The ability of this report to identify people with a BRCA1 or BRCA2 variant varies by ethnicity. For example, about 90% of people of Ashkenazi Jewish descent with a BRCA1 or BRCA2 variant have one of three specific variants included in this report (BRCA1 c.68_69del, BRCA1 c.5266dup, or BRCA2 c.5946del). The variants in this report account for a much smaller proportion of cancer-related BRCA1 and BRCA2 variants found in people of other ethnicities, including about 30-40% among African Americans, people of European descent, and people of Hispanic or Latino descent; about 5-25% among people of East Asian descent; and up to 35% among people of South Asian descent.

Although the variants included in this report may be more or less common in different populations, the effect of BRCA1 and BRCA2 variants on a person's cancer risk is well understood in people of many ethnicities. This means that, regardless of ethnicity, people with a BRCA1 or BRCA2 variant have an increased risk of developing certain cancers. Females with a variant have a greatly increased risk of developing breast and ovarian cancer and may have an increased risk for pancreatic cancer and potentially other cancers. Males with a variant have an increased risk of developing male breast cancer and may have an increased risk for prostate cancer, pancreatic cancer, and potentially other cancers.

Where can I learn more about cancer, support groups, and other resources?

You can learn more about breast and ovarian cancer from the following resources:

- American Cancer Society
- Breastcancer.org
- Susan G. Komen
- National Ovarian Cancer Coalition
- FORCE: Facing Our Risk of Cancer Empowered (for hereditary breast and ovarian cancer)

You can learn more about male breast cancer and prostate cancer from the following resources:

- American Cancer Society
- Prostate Cancer Foundation
- Breastcancer.org
- HIS Breast Cancer Awareness
- Susan G. Komen

You can learn more about pancreatic cancer from the following resources:

- American Cancer Society
- Pancreatic Cancer Action Network

If you have questions about your results or how they might affect you or your family, a genetic counselor may be able to help. Learn more about genetic counseling.

You can review the BRCA1/BRCA2 (Selected Variants) tutorial [here](#).

My report says **one variant** was detected in the BRCA2 gene. What does this mean?

This means you have one of the genetic variants we tested.

Females with a BRCA2 variant have a greatly increased risk of developing breast cancer and ovarian cancer. They also have an increased risk for early-onset breast cancer (before age 45) and multiple breast cancers, and an increased risk for pancreatic cancer.

However, this result does not mean you have developed or definitely will develop any of these cancers.

It is important to discuss this result with a healthcare professional. Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.

People with one BRCA2 variant are also considered carriers for a condition called Fanconi anemia group D1. They do not have the condition themselves, but their children may be at risk if both parents are BRCA2 carriers. Consider talking with a genetic counselor if you are thinking about having children. Learn more about genetic counseling.

What does **greatly increased risk** mean?

A "greatly increased risk" means that, based on your genetic result for this test, your chances of developing breast and ovarian cancer are much higher than average. Studies have found that 45-85% of females with a BRCA2 variant develop breast cancer, compared to about 13% for the general population. Similar studies have found that about 10-27% of females with a BRCA2 variant develop ovarian cancer, compared to 1-2% for the general population. See Scientific Details for more information.

People with a BRCA2 variant also have an increased risk for pancreatic cancer. We cannot provide a numerical risk estimate because risk for pancreatic cancer is not as well understood in people with your genetic result.

It is important to share this result with a healthcare professional.

My report says that females with a BRCA2 variant have a **45-85% chance** of developing breast cancer and a **10-27% chance** of developing ovarian cancer. What do those percentages mean? And why is there such a large range?

A 45-85% chance of developing breast cancer means that, out of 100 females with a BRCA2 variant, between 45 and 85 will develop breast cancer by the age of 70.

A 10-27% chance of developing ovarian cancer means that, out of 100 females with a BRCA2 variant, between 10 and 27 will develop ovarian cancer by the age of 70.

Many studies have looked at variants in the BRCA1 and BRCA2 genes, and these studies report somewhat different risk estimates. Some of these differences may be due to other factors besides the BRCA1 and BRCA2 variants. For example, females with a BRCA1 or BRCA2 variant who have a family history of breast or ovarian cancer have a higher chance of developing these cancers themselves. Because the group of participants included in each study is different, the risk estimates may be different as well.

Your exact risk of developing breast and ovarian cancer depends on many factors, including family history, lifestyle, and genetic factors not included in this test. A healthcare professional can help you get a more precise estimate of your risk.

My report says that BRCA1 and BRCA2 variants may potentially be associated with an increased risk for other cancers. What does this mean?

Research is ongoing to determine whether having a BRCA1 or BRCA2 variant may increase risk for cancers besides those mentioned in the report. For example, some

research suggests that BRCA1 and BRCA2 variants may increase risk for melanoma, but other studies are inconclusive. A healthcare professional can use your personal and family health history — along with your genetic result for this report — to help you better understand your risk for other cancers.

What does it mean that people with one BRCA2 variant are carriers for a condition called Fanconi anemia group D1?

This result does not mean that you have Fanconi anemia group D1. But your result may be relevant for your family.

Fanconi anemia group D1 is a condition characterized by birth defects, a decreased production of blood cells, and an increased risk for infections and cancer.

People with one BRCA2 variant are carriers for Fanconi anemia group D1. They do not have the condition themselves, but they can pass a variant on to their children. A child must inherit a BRCA2 variant from each parent in order to have this condition. If your partner has a BRCA2 variant, each of your children may have a 25% chance of having Fanconi anemia group D1. Learn more about Fanconi anemia group D1 at Facing Our Risk of Cancer Empowered.

My report says **one variant** was detected in the BRCA2 gene. What are some things I could do?

This result is associated with a greatly increased risk of developing breast and ovarian cancer. People with your result also have an increased risk for pancreatic cancer. It is important to share this result with a healthcare professional, such as a doctor or genetic counselor.

Professional guidelines recommend that females with your genetic result undergo more rigorous cancer screenings and consider certain medications and surgeries that can reduce the risk for cancer. Learn more about cancer screening and prevention.

For more information about what to think about and possible next steps, see this help article.

It is important to discuss your result with a healthcare professional. **Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.**

How could my result affect my family?

Since you share DNA with your family members, they may also be interested in your result. If you are thinking about talking to family members about your results, see this article for a discussion of things to consider before having the conversation.

Because you have one variant, it is expected that:

- Each of your children has a 50% chance of inheriting this variant from you.
- One of your parents has this variant.
- Each of your siblings has a 50% chance of having this variant.

Because the variant we detected is associated with an increased cancer risk in both males and females, your adult family members may wish to learn more about their cancer risk. They can talk with a healthcare professional, such as a doctor or genetic counselor, to help them decide if genetic testing is right for them. Learn more about genetic counseling.

People with one BRCA2 variant are also considered carriers for a condition called Fanconi anemia group D1. They do not have the condition themselves, but they could pass the variant on to their children. A child must inherit a BRCA2 variant from each parent in order to have this condition. If your partner also has a BRCA2 variant, each of your children may have a 25% chance of having Fanconi anemia group D1. A genetic counselor can help you determine if additional testing may be appropriate.

I have questions about my results. Who should I talk to?

It's normal to have questions or concerns after viewing this report. Some people feel anxious, upset, or worried about their risk or risk for their family members. Others simply want to understand their results better or talk to someone about what they can do. Genetic counselors can help. Genetic counselors are healthcare professionals with special training in genetics and genetic testing. Learn more about genetic counseling.

For more information about what to think about and possible next steps, see this help article.

It is important to talk with a healthcare professional about your result and options.

Variants not detected (male)

What does this test do?

This test looks for 44 variants in the BRCA1 and BRCA2 genes linked to certain hereditary cancers.

Females with the genetic variants included in this test have a greatly increased risk for breast and ovarian cancer. Males with these genetic variants have an increased risk for male breast cancer and may also have an increased risk for prostate cancer. In addition, variants in the BRCA1 and BRCA2 genes may be associated with an increased risk for pancreatic cancer and potentially other cancers.

This test does not include all possible genetic variants that may increase a person's risk of developing breast, ovarian, prostate, pancreatic, or other cancers.

What does this test **not** do?

This test does not diagnose any type of cancer or any other health conditions. Only a healthcare professional can do that.

This test should not be used to make medical decisions. Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.

This test does not tell you if you have cancer or if you will definitely develop cancer in the future.

This test does not take into account other risk factors for breast, ovarian, prostate, pancreatic, and other cancers, such as personal and family health history. Thus, this test does not provide a complete assessment of your overall risk of developing these cancers.

This test does not include all possible genetic variants that may increase your risk of developing cancer. More than 4,000 variants in the BRCA1 and BRCA2 genes have been linked to hereditary breast, ovarian, prostate, and pancreatic cancer. Variants in other genes have also been linked to these hereditary cancers.

Who is at risk for breast, ovarian, prostate, and other cancers?

A person's risk of developing breast, ovarian, prostate, and other BRCA-related cancers depends in part on their sex assigned at birth.

- **Breast cancer:** Everyone is at risk of developing breast cancer. However, breast cancer risk is much higher in people whose sex assigned at birth is female than in people whose birth sex is male.
- **Ovarian cancer:** Everyone with ovaries is at risk of developing ovarian cancer. This includes cisgender women, transgender men, non-binary individuals who have ovaries, and intersex individuals who have ovaries. People without ovaries — including cisgender men and transgender women — are not at risk.
- **Prostate cancer:** Everyone with a prostate is at risk of developing prostate cancer. This includes cisgender men, transgender women, non-binary individuals who have a prostate, and intersex individuals who have a prostate. People without a prostate — including cisgender women and transgender men — are not at risk.
- **Pancreatic cancer:** Everyone is at risk of developing pancreatic cancer. This means that people of all birth sexes and genders are at risk.

The impact of genetics and other factors on cancer risk has been studied primarily in cisgender individuals, and the risk estimates provided in this report are based on those studies. Risk estimates are not as well understood for transgender, non-binary, and intersex people, partly due to a lack of research on the potential impacts of certain interventions, environmental factors, and social factors. For example, gender-affirming hormone therapies may impact breast, ovarian, and prostate cancer risk. Likewise, gender-affirming surgery that removes breast tissue is likely to reduce breast cancer risk, but exact risk estimates are not currently available. As new research is conducted, we hope that we will be able to provide more tailored information for transgender, non-binary, and intersex people.

In this report, we use the word "female" to refer to people whose sex at birth is female and who have ovaries, and "male" to refer to people whose birth sex is male and who have a prostate. We made this decision as a way of highlighting that BRCA-related cancer risks depend on which reproductive organs a person has. But we recognize that being categorized by birth sex may be an uncomfortable experience for some people, and we do not mean to delegitimize anyone's gender identity.

For this report, the interpretation of your genetic result depends on the birth sex you reported in your account settings.

The report says this report does **not** include the majority of BRCA1 and BRCA2 variants found in people of most ethnicities. What does this mean?

There are more than 4,000 variants in the BRCA1 and BRCA2 genes, and most of those variants are not included in this report.

The ability of this report to identify people with a BRCA1 or BRCA2 variant varies by ethnicity. For example, about 90% of people of Ashkenazi Jewish descent with a BRCA1 or BRCA2 variant have one of three specific variants included in this report (BRCA1 c.68_69del, BRCA1 c.5266dup, or BRCA2 c.5946del). The variants in this report account for a much smaller proportion of cancer-related BRCA1 and BRCA2 variants found in people of other ethnicities, including about 30-40% among African Americans, people of European descent, and people of Hispanic or Latino descent; about 5-25% among people of East Asian descent; and up to 35% among people of South Asian descent.

Although the variants included in this report may be more or less common in different populations, the effect of BRCA1 and BRCA2 variants on a person's cancer risk is well understood in people of many ethnicities. This means that, regardless of ethnicity, people with a BRCA1 or BRCA2 variant have an increased risk of developing certain cancers. Females with a variant have a greatly increased risk of developing breast and ovarian cancer and may have an increased risk for pancreatic cancer and potentially other cancers. Males with a variant have an increased risk of developing male breast cancer and may have an increased risk for prostate cancer, pancreatic cancer, and potentially other cancers.

Where can I learn more about cancer, support groups, and other resources?

You can learn more about breast and ovarian cancer from the following resources:

- American Cancer Society
- Breastcancer.org
- Susan G. Komen
- National Ovarian Cancer Coalition
- FORCE: Facing Our Risk of Cancer Empowered (for hereditary breast and ovarian cancer)

You can learn more about male breast cancer and prostate cancer from the following resources:

- American Cancer Society
- Prostate Cancer Foundation
- Breastcancer.org
- HIS Breast Cancer Awareness
- Susan G. Komen

You can learn more about pancreatic cancer from the following resources:

- American Cancer Society
- Pancreatic Cancer Action Network

If you have questions about your results or how they might affect you or your family, a genetic counselor may be able to help. Learn more about genetic counseling.

You can review the BRCA1/BRCA2 (Selected Variants) tutorial [here](#).

My report says **zero variants** were detected. What does this mean?

This means you do not have any of the genetic variants we tested. However, it does **not** mean your cancer risk is reduced. You could still have a variant that is not included in this test. In addition, most cases of cancer are not caused by inherited genetic variants, so factors such as lifestyle, environment, and family history are also important.

The genetic variants we tested account for only a small percentage of cases of male breast cancer and prostate cancer. So even though you don't have any of the variants we tested, you still have a risk of developing male breast cancer and prostate cancer.

About 1 in 8 males develops prostate cancer during their lifetime, and about 1 in 800 develops male breast cancer. The risk is higher for people with a family history of breast, prostate, or ovarian cancer.

Other factors can also affect your risk of developing male breast cancer and prostate cancer, even if you do not have any genetic variants. Learn more about other factors.

My report says **zero variants** were detected. Does this mean I'm not at risk of developing male breast cancer and prostate cancer?

No. Males with zero variants detected still have a risk of developing male breast cancer and prostate cancer. You could still have a variant that is not included in this test; more than 4,000 variants in the BRCA1 and BRCA2 genes have been linked to hereditary male

breast cancer and prostate cancer. In addition, most cases of cancer are not caused by inherited genetic variants, so factors such as lifestyle, environment, and family history are also important. So even though you don't have the variants we tested, you still have a risk of developing male breast cancer, prostate cancer, and other cancers.

About 1 in 8 males develops prostate cancer during their lifetime, and about 1 in 800 develops male breast cancer. The risk is higher for people with a family history of breast, prostate, or ovarian cancer.

Other factors can also affect your risk of developing male breast cancer and prostate cancer, even if you do not have any genetic variants. Learn more about other factors.

It is important to continue with any cancer screenings your healthcare provider recommends. Learn more about cancer screening.

My report says **zero variants** were detected, but I have a personal or family history of breast or prostate cancer. What does this mean for me?

Males with a family history of male breast cancer or prostate cancer have a higher risk of developing these cancers themselves. A family history of female breast or ovarian cancer is also associated with an increased risk for male breast cancer and prostate cancer.

You do not have any of the genetic variants we tested. But there are more than 4,000 variants in the BRCA1 and BRCA2 genes associated with an increased risk for male breast cancer and prostate cancer. Our test only includes 44 of those variants. Variants in other genes have also been linked to hereditary male breast cancer and prostate cancer, and non-genetic factors also influence the risk of developing these cancers. Learn more about other factors.

It is important to discuss your personal or family history of cancer with a healthcare professional, who can help you determine if additional genetic testing is appropriate. Genetic counseling can also help you understand your results and your options for additional testing. Learn more about genetic counseling.

My report says **zero variants** were detected. What are some things I could do?

Your genetic result means you do not have any of the genetic variants we tested. However, because these genetic variants only account for a small percentage of male

breast cancer and prostate cancer cases, your result doesn't give you much new information about your risk for these cancers.

There are many other genetic and non-genetic factors that can affect your risk, which this test does not take into account. Learn more about other factors.

It is important to continue with any cancer screenings your healthcare provider recommends. Learn more about cancer screening.

Talk to a healthcare professional if:

- You have a personal or family history of breast cancer, prostate cancer, or any other type of cancer.
- You think you might have male breast cancer, prostate cancer, or any other type of cancer.
- You have questions about other risk factors you may have.

Variant detected (BRCA1, male)

What does this test do?

This test looks for 44 variants in the BRCA1 and BRCA2 genes linked to certain hereditary cancers.

Females with the genetic variants included in this test have a greatly increased risk for breast and ovarian cancer. Males with these genetic variants have an increased risk for male breast cancer and may also have an increased risk for prostate cancer. In addition, variants in the BRCA1 and BRCA2 genes may be associated with an increased risk for pancreatic cancer and potentially other cancers.

This test does not include all possible genetic variants that may increase a person's risk of developing breast, ovarian, prostate, pancreatic, or other cancers.

What does this test **not** do?

This test does not diagnose any type of cancer or any other health conditions. Only a healthcare professional can do that.

This test should not be used to make medical decisions. Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.

This test does not tell you if you have cancer or if you will definitely develop cancer in the future.

This test does not take into account other risk factors for breast, ovarian, prostate, pancreatic, and other cancers, such as personal and family health history. Thus, this test does not provide a complete assessment of your overall risk of developing these cancers.

This test does not include all possible genetic variants that may increase your risk of developing cancer. More than 4,000 variants in the BRCA1 and BRCA2 genes have been linked to hereditary breast, ovarian, prostate, and pancreatic cancer. Variants in other genes have also been linked to these hereditary cancers.

Who is at risk for breast, ovarian, prostate, and other cancers?

A person's risk of developing breast, ovarian, prostate, and other BRCA-related cancers depends in part on their sex assigned at birth.

- **Breast cancer:** Everyone is at risk of developing breast cancer. However, breast cancer risk is much higher in people whose sex assigned at birth is female than in people whose birth sex is male.
- **Ovarian cancer:** Everyone with ovaries is at risk of developing ovarian cancer. This includes cisgender women, transgender men, non-binary individuals who have ovaries, and intersex individuals who have ovaries. People without ovaries — including cisgender men and transgender women — are not at risk.
- **Prostate cancer:** Everyone with a prostate is at risk of developing prostate cancer. This includes cisgender men, transgender women, non-binary individuals who have a prostate, and intersex individuals who have a prostate. People without a prostate — including cisgender women and transgender men — are not at risk.
- **Pancreatic cancer:** Everyone is at risk of developing pancreatic cancer. This means that people of all birth sexes and genders are at risk.

The impact of genetics and other factors on cancer risk has been studied primarily in cisgender individuals, and the risk estimates provided in this report are based on those studies. Risk estimates are not as well understood for transgender, non-binary, and intersex people, partly due to a lack of research on the potential impacts of certain interventions, environmental factors, and social factors. For example, gender-affirming hormone therapies may impact breast, ovarian, and prostate cancer risk. Likewise, gender-affirming surgery that removes breast tissue is likely to reduce breast cancer risk, but exact risk estimates are not currently available. As new research is conducted, we hope that we will be able to provide more tailored information for transgender, non-binary, and intersex people.

In this report, we use the word "female" to refer to people whose sex at birth is female and who have ovaries, and "male" to refer to people whose birth sex is male and who have a prostate. We made this decision as a way of highlighting that BRCA-related cancer risks depend on which reproductive organs a person has. But we recognize that being categorized by birth sex may be an uncomfortable experience for some people, and we do not mean to delegitimize anyone's gender identity.

For this report, the interpretation of your genetic result depends on the birth sex you reported in your account settings.

The report says this report does **not** include the majority of BRCA1 and BRCA2 variants found in people of most ethnicities. What does this mean?

There are more than 4,000 variants in the BRCA1 and BRCA2 genes, and most of those variants are not included in this report.

The ability of this report to identify people with a BRCA1 or BRCA2 variant varies by ethnicity. For example, about 90% of people of Ashkenazi Jewish descent with a BRCA1 or BRCA2 variant have one of three specific variants included in this report (BRCA1 c.68_69del, BRCA1 c.5266dup, or BRCA2 c.5946del). The variants in this report account for a much smaller proportion of cancer-related BRCA1 and BRCA2 variants found in people of other ethnicities, including about 30-40% among African Americans, people of European descent, and people of Hispanic or Latino descent; about 5-25% among people of East Asian descent; and up to 35% among people of South Asian descent.

Although the variants included in this report may be more or less common in different populations, the effect of BRCA1 and BRCA2 variants on a person's cancer risk is well understood in people of many ethnicities. This means that, regardless of ethnicity, people with a BRCA1 or BRCA2 variant have an increased risk of developing certain cancers. Females with a variant have a greatly increased risk of developing breast and ovarian cancer and may have an increased risk for pancreatic cancer and potentially other cancers. Males with a variant have an increased risk of developing male breast cancer and may have an increased risk for prostate cancer, pancreatic cancer, and potentially other cancers.

Where can I learn more about cancer, support groups, and other resources?

You can learn more about breast and ovarian cancer from the following resources:

- American Cancer Society
- Breastcancer.org
- Susan G. Komen
- National Ovarian Cancer Coalition
- FORCE: Facing Our Risk of Cancer Empowered (for hereditary breast and ovarian cancer)

You can learn more about male breast cancer and prostate cancer from the following resources:

- American Cancer Society
- Prostate Cancer Foundation
- Breastcancer.org
- HIS Breast Cancer Awareness
- Susan G. Komen

You can learn more about pancreatic cancer from the following resources:

- American Cancer Society
- Pancreatic Cancer Action Network

If you have questions about your results or how they might affect you or your family, a genetic counselor may be able to help. Learn more about genetic counseling.

You can review the BRCA1/BRCA2 (Selected Variants) tutorial [here](#).

My report says **one variant** was detected in the BRCA1 gene. What does this mean?

This means you have one of the genetic variants we tested.

Males with a BRCA1 variant have an increased risk of developing male breast cancer and may also have an increased risk for prostate cancer and pancreatic cancer.

However, this result does not mean you have developed or definitely will develop any of these cancers.

It is important to discuss this result with a healthcare professional. Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.

People with one BRCA1 variant are also considered carriers for a condition called Fanconi anemia group S. They do not have the condition themselves, but their children may be at risk if both parents are BRCA1 carriers. Consider talking with a genetic counselor if you are thinking about having children. Learn more about genetic counseling.

What does **increased risk** mean?

An "increased risk" means that, based on your genetic result for this test, your chances of developing male breast cancer are higher than average. Studies have found that 1-2% of males with a BRCA1 variant develop male breast cancer during their lifetime, compared to about 0.1% for the general population. See Scientific Details for more information.

Males with a BRCA1 variant may also have an increased risk for prostate cancer and pancreatic cancer. We cannot provide numerical risk estimates because risks for these cancers are not as well understood in people with your genetic result.

It is important to share this result with a healthcare professional.

My report says that males with a BRCA1 variant have a 1-2% chance of developing male breast cancer. What does this percentage mean?

A 1-2% chance of developing male breast cancer means that, out of 100 males with a BRCA1 variant, between 1 and 2 will develop male breast cancer during their lifetime.

We aren't able to give you a numerical estimate of the risk for prostate cancer and pancreatic cancer because risks for these cancers are not as well understood in people with your genetic result.

Your exact risk of developing male breast cancer and other cancers depends on many factors, including family history, lifestyle, and genetic factors not included in this test. A healthcare professional can help you get a more precise estimate of your risk.

Why doesn't my report include numerical risk estimates for prostate cancer and pancreatic cancer?

We aren't able to give you a numerical estimate of the risk for prostate cancer and pancreatic cancer because risks for these cancers are not as well understood in people with your genetic result.

A healthcare professional can answer questions you may have about your risk for these cancers.

My report says that BRCA1 and BRCA2 variants may potentially be associated with an increased risk for other cancers. What does this mean?

Research is ongoing to determine whether having a BRCA1 or BRCA2 variant may increase risk for cancers besides those mentioned in the report. For example, some

research suggests that BRCA1 and BRCA2 variants may increase risk for melanoma, but other studies are inconclusive. A healthcare professional can use your personal and family health history — along with your genetic result for this report — to help you better understand your risk for other cancers.

What does it mean that people with one BRCA1 variant are carriers for a condition called Fanconi anemia group S?

This result does not mean that you have Fanconi anemia group S. But your result may be relevant for your family.

Fanconi anemia group S is a genetic condition characterized by physical differences, developmental delay, and an increased risk for cancer.

People with one BRCA1 variant do not have Fanconi anemia group S but are considered carriers. This condition is extremely rare and requires inheriting specific BRCA1 variants from both parents. If you are considering having children, talk to a genetic counselor to learn more about what this result may mean for your family.

My report says **one variant** was detected in the BRCA1 gene. What are some things I could do?

This result is associated with an increased risk of developing male breast cancer. Males with your result may also have an increased risk for prostate cancer and pancreatic cancer. It is important to share this result with a healthcare professional, such as a doctor or genetic counselor.

Professional guidelines recommend that males with your genetic result undergo certain cancer screenings. Learn more about cancer screening.

For more information about what to think about and possible next steps, see this help article.

It is important to discuss your result with a healthcare professional. **Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.**

How could my result affect my family?

Since you share DNA with your family members, they may also be interested in your result. If you are thinking about talking to family members about your results, see this article for a discussion of things to consider before having the conversation.

Because you have one variant, it is expected that:

- Each of your children has a 50% chance of inheriting this variant from you.
- One of your parents has this variant.
- Each of your siblings has a 50% chance of having this variant.

If your mother or any sisters or daughters have this genetic variant, they have a greatly increased risk of developing breast and ovarian cancer. These and other adult family members may wish to learn more about their cancer risk. They can talk with a healthcare professional, such as a doctor or genetic counselor, to help them decide if genetic testing is right for them. Learn more about genetic counseling.

People with one BRCA1 variant are also considered carriers for a condition called Fanconi anemia group S. They do not have the condition themselves, but their children may be at risk if both parents are BRCA1 carriers. If you are considering having children, talk to a genetic counselor to learn more about what this result may mean for your family.

I have questions about my results. Who should I talk to?

It's normal to have questions or concerns after viewing this report. Some people feel anxious, upset, or worried about their risk or risk for their family members. Others simply want to understand their results better or talk to someone about what they can do. Genetic counselors can help. Genetic counselors are healthcare professionals with special training in genetics and genetic testing. Learn more about genetic counseling.

For more information about what to think about and possible next steps, see this help article.

It is important to talk with a healthcare professional about your result and options.

Variant detected (BRCA2, male)

What does this test do?

This test looks for 44 variants in the BRCA1 and BRCA2 genes linked to certain hereditary cancers.

Females with the genetic variants included in this test have a greatly increased risk for breast and ovarian cancer. Males with these genetic variants have an increased risk for male breast cancer and may also have an increased risk for prostate cancer. In addition, variants in the BRCA1 and BRCA2 genes may be associated with an increased risk for pancreatic cancer and potentially other cancers.

This test does not include all possible genetic variants that may increase a person's risk of developing breast, ovarian, prostate, pancreatic, or other cancers.

What does this test **not** do?

This test does not diagnose any type of cancer or any other health conditions. Only a healthcare professional can do that.

This test should not be used to make medical decisions. Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.

This test does not tell you if you have cancer or if you will definitely develop cancer in the future.

This test does not take into account other risk factors for breast, ovarian, prostate, pancreatic, and other cancers, such as personal and family health history. Thus, this test does not provide a complete assessment of your overall risk of developing these cancers.

This test does not include all possible genetic variants that may increase your risk of developing cancer. More than 4,000 variants in the BRCA1 and BRCA2 genes have been linked to hereditary breast, ovarian, prostate, and pancreatic cancer. Variants in other genes have also been linked to these hereditary cancers.

Who is at risk for breast, ovarian, prostate, and other cancers?

A person's risk of developing breast, ovarian, prostate, and other BRCA-related cancers depends in part on their sex assigned at birth.

- **Breast cancer:** Everyone is at risk of developing breast cancer. However, breast cancer risk is much higher in people whose sex assigned at birth is female than in people whose birth sex is male.
- **Ovarian cancer:** Everyone with ovaries is at risk of developing ovarian cancer. This includes cisgender women, transgender men, non-binary individuals who have ovaries, and intersex individuals who have ovaries. People without ovaries — including cisgender men and transgender women — are not at risk.
- **Prostate cancer:** Everyone with a prostate is at risk of developing prostate cancer. This includes cisgender men, transgender women, non-binary individuals who have a prostate, and intersex individuals who have a prostate. People without a prostate — including cisgender women and transgender men — are not at risk.
- **Pancreatic cancer:** Everyone is at risk of developing pancreatic cancer. This means that people of all birth sexes and genders are at risk.

The impact of genetics and other factors on cancer risk has been studied primarily in cisgender individuals, and the risk estimates provided in this report are based on those studies. Risk estimates are not as well understood for transgender, non-binary, and intersex people, partly due to a lack of research on the potential impacts of certain interventions, environmental factors, and social factors. For example, gender-affirming hormone therapies may impact breast, ovarian, and prostate cancer risk. Likewise, gender-affirming surgery that removes breast tissue is likely to reduce breast cancer risk, but exact risk estimates are not currently available. As new research is conducted, we hope that we will be able to provide more tailored information for transgender, non-binary, and intersex people.

In this report, we use the word "female" to refer to people whose sex at birth is female and who have ovaries, and "male" to refer to people whose birth sex is male and who have a prostate. We made this decision as a way of highlighting that BRCA-related cancer risks depend on which reproductive organs a person has. But we recognize that being categorized by birth sex may be an uncomfortable experience for some people, and we do not mean to delegitimize anyone's gender identity.

For this report, the interpretation of your genetic result depends on the birth sex you reported in your account settings.

The report says this report does **not** include the majority of BRCA1 and BRCA2 variants found in people of most ethnicities. What does this mean?

There are more than 4,000 variants in the BRCA1 and BRCA2 genes, and most of those variants are not included in this report.

The ability of this report to identify people with a BRCA1 or BRCA2 variant varies by ethnicity. For example, about 90% of people of Ashkenazi Jewish descent with a BRCA1 or BRCA2 variant have one of three specific variants included in this report (BRCA1 c.68_69del, BRCA1 c.5266dup, or BRCA2 c.5946del). The variants in this report account for a much smaller proportion of cancer-related BRCA1 and BRCA2 variants found in people of other ethnicities, including about 30-40% among African Americans, people of European descent, and people of Hispanic or Latino descent; about 5-25% among people of East Asian descent; and up to 35% among people of South Asian descent.

Although the variants included in this report may be more or less common in different populations, the effect of BRCA1 and BRCA2 variants on a person's cancer risk is well understood in people of many ethnicities. This means that, regardless of ethnicity, people with a BRCA1 or BRCA2 variant have an increased risk of developing certain cancers. Females with a variant have a greatly increased risk of developing breast and ovarian cancer and may have an increased risk for pancreatic cancer and potentially other cancers. Males with a variant have an increased risk of developing male breast cancer and may have an increased risk for prostate cancer, pancreatic cancer, and potentially other cancers.

Where can I learn more about cancer, support groups, and other resources?

You can learn more about breast and ovarian cancer from the following resources:

- American Cancer Society
- Breastcancer.org
- Susan G. Komen
- National Ovarian Cancer Coalition
- FORCE: Facing Our Risk of Cancer Empowered (for hereditary breast and ovarian cancer)

You can learn more about male breast cancer and prostate cancer from the following resources:

- American Cancer Society
- Prostate Cancer Foundation
- Breastcancer.org
- HIS Breast Cancer Awareness
- Susan G. Komen

You can learn more about pancreatic cancer from the following resources:

- American Cancer Society
- Pancreatic Cancer Action Network

If you have questions about your results or how they might affect you or your family, a genetic counselor may be able to help. Learn more about genetic counseling.

You can review the BRCA1/BRCA2 (Selected Variants) tutorial [here](#).

My report says **one variant** was detected in the BRCA2 gene. What does this mean?

This means you have one of the genetic variants we tested.

Males with a BRCA2 variant have an increased risk of developing male breast cancer and prostate cancer. They also have an increased risk for pancreatic cancer.

However, this result does not mean you have developed or definitely will develop any of these cancers.

It is important to discuss this result with a healthcare professional. Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.

People with one BRCA2 variant are also considered carriers for a condition called Fanconi anemia group D1. They do not have the condition themselves, but their children may be at risk if both parents are BRCA2 carriers. Consider talking with a genetic counselor if you are thinking about having children. Learn more about genetic counseling.

What does **increased risk** mean?

An "increased risk" means that, based on your genetic result for this test, your chances of developing male breast cancer and certain other cancers are higher than average. Studies have found that 7-8% of males with a BRCA2 variant develop male breast cancer during their lifetime, compared to about 0.1% for the general population. See Scientific Details for more information.

Males with a BRCA2 variant also have an increased risk for prostate cancer and pancreatic cancer. We cannot provide numerical risk estimates because risks for these cancers are not as well understood in people with your genetic result.

It is important to share this result with a healthcare professional.

My report says that males with a BRCA2 variant have a 7-8% chance of developing male breast cancer. What does this percentage mean?

A 7-8% chance of developing male breast cancer means that, out of 100 males with a BRCA2 variant, between 7 and 8 will develop male breast cancer during their lifetime.

We aren't able to give you a numerical estimate of the risk for prostate cancer and pancreatic cancer because risks for these cancers are not as well understood in people with your genetic result.

Your exact risk of developing male breast cancer and other cancers depends on many factors, including family history, lifestyle, and genetic factors not included in this test. A healthcare professional can help you get a more precise estimate of your risk.

Why doesn't my report include numerical risk estimates for prostate cancer and pancreatic cancer?

We aren't able to give you a numerical estimate of the risk for prostate cancer and pancreatic cancer because risks for these cancers are not as well understood in people with your genetic result.

A healthcare professional can answer questions you may have about your risk for these cancers.

My report says that BRCA1 and BRCA2 variants may potentially be associated with an increased risk for other cancers. What does this mean?

Research is ongoing to determine whether having a BRCA1 or BRCA2 variant may increase risk for cancers besides those mentioned in the report. For example, some

research suggests that BRCA1 and BRCA2 variants may increase risk for melanoma, but other studies are inconclusive. A healthcare professional can use your personal and family health history — along with your genetic result for this report — to help you better understand your risk for other cancers.

What does it mean that people with one BRCA2 variant are carriers for a condition called Fanconi anemia group D1?

This result does not mean that you have Fanconi anemia group D1. But your result may be relevant for your family.

Fanconi anemia group D1 is a condition characterized by birth defects, a decreased production of blood cells, and an increased risk for infections and cancer.

People with one BRCA2 variant are carriers for Fanconi anemia group D1. They do not have the condition themselves, but they can pass a variant on to their children. A child must inherit a BRCA2 variant from each parent in order to have this condition. If your partner has a BRCA2 variant, each of your children may have a 25% chance of having Fanconi anemia group D1. Learn more about Fanconi anemia group D1 at Facing Our Risk of Cancer Empowered.

My report says **one variant** was detected in the BRCA2 gene. What are some things I could do?

This result is associated with an increased risk of developing male breast cancer and prostate cancer. People with your result also have an increased risk for pancreatic cancer. It is important to share this result with a healthcare professional, such as a doctor or genetic counselor.

Professional guidelines recommend that males with your genetic result undergo certain cancer screenings. Learn more about cancer screening.

For more information about what to think about and possible next steps, see this help article.

It is important to discuss your result with a healthcare professional. **Results should be confirmed by an independent genetic test prescribed by your own healthcare provider before taking any medical action.**

How could my result affect my family?

Since you share DNA with your family members, they may also be interested in your result. If you are thinking about talking to family members about your results, see this article for a discussion of things to consider before having the conversation.

Because you have one variant, it is expected that:

- Each of your children has a 50% chance of inheriting this variant from you.
- One of your parents has this variant.
- Each of your siblings has a 50% chance of having this variant.

If your mother or any sisters or daughters have this genetic variant, they have a greatly increased risk of developing breast and ovarian cancer. These and other adult family members may wish to learn more about their cancer risk. They can talk with a healthcare professional, such as a doctor or genetic counselor, to help them decide if genetic testing is right for them. Learn more about genetic counseling.

People with one BRCA2 variant are also considered carriers for a condition called Fanconi anemia group D1. They do not have the condition themselves, but they could pass the variant on to their children. A child must inherit a BRCA2 variant from each parent in order to have this condition. If your partner also has a BRCA2 variant, each of your children may have a 25% chance of having Fanconi anemia group D1. A genetic counselor can help you determine if additional testing may be appropriate.

I have questions about my results. Who should I talk to?

It's normal to have questions or concerns after viewing this report. Some people feel anxious, upset, or worried about their risk or risk for their family members. Others simply want to understand their results better or talk to someone about what they can do. Genetic counselors can help. Genetic counselors are healthcare professionals with special training in genetics and genetic testing. Learn more about genetic counseling.

For more information about what to think about and possible next steps, see this help article.

Since you have a variant detected, it is also important to talk with a healthcare professional about your result and options.