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**Article**

## 5 Things you should know about Direct-To-Consumer Genetic Testing for Breast Cancer

You saw the commercial, ordered the kit, and spit into a tube. You sent off your DNA to a Direct-to-Consumer genetic testing company like 23andMe.com or Color.com. Now you wait for the results.

Your report arrives. It shows a positive result for *BRCA 1* and *BRCA 2*, two of the most common breast cancer genes that indicate up to an 80% higher chance than the general population of being diagnosed with breast cancer before you reach 80 years of age. Now what? Are your results accurate? Will you pass the breast cancer genes to your children?

Before you panic, it's worth understanding what these two genetic testing firms offer in the fight against breast cancer.

Genetic testing is a complex area that requires not only DNA data but insightful counseling to help you understand your risks, options, and next steps. The expansion of the Direct-to-Consumer genetic testing market includes two major players: 23andMe.com and Color.com. Both companies provide simple, at-home, genetic testing kits that can provide some understanding of your breast cancer risks.

These DNA tests are useful, but do not provide comprehensive results. Here are 5 things you should know before purchasing a consumer DNA genetic testing kit to understand your breast cancer risk.

1. **Understand which Breast Cancer Gene Mutations are tested** – *BRCA 1* and *BRCA 2* are both genetic mutations tested by 23andMe.com and Color.com. Early identification of the two genetic mutations can be critical in identifying your breast cancer risk so you can consult your doctor and make lifestyle changes. Recognize that *BRCA 1* and *BRCA 2* can have over 1,000 gene variations but these two companies only test for up to 3 gene variations. According to [Breastcancer.org](http://Breastcancer.org), there are additional genes, including *PALB2*, *CHEK2*, and *PTEN*, which are critical in identifying breast, ovarian, and prostate cancer. Neither Color.com or 23andMe.com test for these gene mutations.
2. **Consider Genetic Counseling** – Color.com offers access to genetic counseling and works closely with your physician to approve breast cancer genetic testing and develop a care plan. However, 23andMe.com only provides a link to the National Society of Genetic Counselors website, where you'll have to find your own counselor. Mary Freivogel, President of that society, recently [wrote about](#) her concerns over such testing. "Direct-to-consumer genetic testing is an exciting option...but genetic test results are empowering only if they are interpreted correctly."
3. **Know What You're Paying For** – The *Health and Ancestry Test* from 23andMe.com is priced at \$199 and includes ancestry, health, carrier, and wellness reports. The complete package from Color.com includes *Hereditary Cancer Test*, *Hereditary Heart Health Test*, access to genetic counselors, and health management tools to share with your provider and family for \$349. However, if you choose a more traditional, comprehensive testing for breast cancer genes and genetic counseling, it may be covered under your health insurance. But as Breastcancer.org advised, be careful. Your insurance may only pay for genetic testing once in your lifetime.

4. **Testing vs. Reports** – Color.com tests for *BRCA 1* and *BRCA 2* and shares those results with your doctor or genetic counselor. 23andMe.com also tests for these two breast cancer genes, but recently received FDA approval to offer the *BRCA1/BRCA2 (Selected Variants) Report*. They are adding this breast cancer report to their portfolio of over 70 reports that address your ancestry, genetic health, wellness, and carrier traits.
  
5. **Understand the Limits of the Tests** – According [Genome.gov](http://Genome.gov) there are over 21,000 genes that have been identified. Color.com tests for a total of 30 genes and 23andMe.com tests for over 40 genes – a small fraction of all the genes we carry. [Breastcancer.org](http://Breastcancer.org) indicated that there are 14 other genes, besides *BRCA 1* and *BRCA 2*, that are linked to breast cancer, not to mention their multiple variations. According to the [Komen](http://Komen) foundation, *BRCA 1* gene mutations are found in 8%-10% in those Ashkenazi Jewish ethnicity, where the occurrence of this mutation in white races is 2%, and even less for Asian-American race. Recognizing that these leading breast cancer mutations may not be identifiable for all races, both Color.com and 23andMe.com state that there *are* limits to their testing.

Should you spend \$200 - \$350 on a Direct-to-Consumer genetic test for breast cancer? As long as you understand the risks and limitations, many customers feel that knowledge is power. Where Color.com is more expensive and partners with your doctor, 23andMe.com offers a wide range of genetic disease reports. If your DNA reports provide an early warning that you - and your children - are susceptible to breast cancer or other genetic issues, it may be the best investment you ever made.