Identification of hereditary cancer genes has made physicians and the patients they treat more aware of how family history can affect a person's risk for developing cancer. Breast cancer is the most common cancer detected in women. The chance that a woman who lives to the age of 85 will develop breast cancer is 1 in 8 (12%). Ovarian cancer is much less common than breast cancer; the chance for ovarian cancer is 1 in 67 (~1.5%).

Family history

Approximately 5% to 10% of women who develop breast or ovarian cancer will have a strong family history of one or both of these cancers. For some people, having a family history of breast or ovarian cancer means they have a high chance of developing one or both of these cancers, and in some cases, other cancers as well. Cancer runs in these families due to an inherited mutation or trait in a single, cancer-predisposing gene. This is called hereditary cancer. For example, BRCA1 and BRCA2 are genes that can increase the risks that a woman could develop breast or ovarian cancer in her lifetime.

How do people determine if they have hereditary cancer?

Determining the significance of a family history requires a process called "Cancer Risk Assessment." This process begins by constructing a family tree to see who in the family has been diagnosed with cancer and what types of cancers they have had. Additional factors important in analyzing the family history include the ages cancer diagnoses were made and whether a person has had more than one kind of cancer. The family history information is collected on immediate relatives (brothers, sisters, children, parents) as well as more distant relatives (grandparents, aunts, uncles and cousins).

If the family history shows a pattern of hereditary cancer, then genetic testing may be an option. Such testing allows scientists to look directly at specific genes for cancer-causing mutations. It is possible to test multiple cancer genes at once, according to the cancer risk assessment. It is often necessary to have a blood sample from a family member with cancer in order to participate in genetic testing. This test cannot rule out the possibility of a person ever developing cancer. Yet, within a hereditary breast/ovarian family, it can identify those individuals at higher risk (i.e., those who inherited the changed cancer gene) versus those whose cancer risk is not increased above that of the general population.

What is the purpose of cancer genetic counseling?

The goal of cancer genetic counseling is to make families aware of their cancer risk. Sometimes, people learn that their cancer risk is less than they expected. Yet, it is also important to identify people who may have a higher chance of developing breast or ovarian cancer so these individuals can be followed carefully by their physicians. Possible medical management strategies include increased cancer screening, guidelines for nutrition and exercise, prophylactic surgeries, and chemo-preventive agents. The ultimate goal is early cancer detection or prevention. An individualized plan, developed by your physician, can tailor your health care to fit your specific needs.

If you are interested in learning more about cancer genetic counseling, speak to your physician, who can help determine if this service would be beneficial to you.

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