ASSOCIATED LIFETIME CANCER RISKS

SURVEILLANCE AND MANAGEMENT RECOMMENDATIONS

Specific recommendations will be made according to the gene-specific associated risk (BRCA1 or BRCA2). In general, cancer screening and prevention options should be based on their personal and family medical history.

For individuals with no mutation identified:

- Chemoprevention
  - Bilateral salpingo-oophorectomy
  - Bilateral mastectomy

- Prophylactic surgery
  - Consider pancreatic cancer screening
  - Consider full body skin exam
  - Routine blood screen
  - Annual breast MRI and mammogram
  - Breast awareness, including self-breast exam

For women with a BRCA1/2 mutation:

- Enhanced screening
  - Breast awareness, including self-biopsy exam
  - Routine clinical breast exam
  - Annual mammogram
  - Consider transabdominal ultrasound and CA-125 blood screen
  - Consider full body skin exam
  - Consider pancreatic cancer screening

- Prophylactic surgery
  - Bilateral salpingo-oophorectomy
  - Bilateral mastectomy
  - Consider pancreatic cancer screening

- Chemoprevention
  - Tamoxifen, oral contraceptive
  - Idenatified genetic breast cancer susceptibility.

For men with a BRCA1/2 mutation:

- Consider pancreatic cancer screening
- Consider full body skin exam
- Routine prostate cancer screening
- Consider mammogram
- Routine clinical breast exam
- Breast awareness, including self-breast exam

- Enhanced screening

REFERENCES


RESOURCES

Genetics professionals such as medical geneticists and genetic counselors can discuss conditions like HBOC in more detail and answer any questions you may have about genetic results. To find a genetics clinic near you visit the Canadian Association of Genetic Counsellors website www.cagc-accg.ca.

There are many online resources for individuals and families coping with the diagnosis and management of HBOC, some of which are listed below.

Hereditary Breast and Ovarian Cancer Society: http://hboctoolsociety.org/
Ovarian Cancer Canada: http://www.ovariancanada.org/
Willow : Breast and Hereditary Cancer Support: http://www.willow.org/
Hereditary Breast and Ovarian Cancer (HBOC) genes

The Field Of Genetics Is Always Evolving And So Are We
Please Visit Our Website For A Current Test List

Ask.Genetics@LifeLabs.com
1-844-363-4357
WHAT YOU NEED TO KNOW

Hereditary breast and ovarian cancer (HBOC) resulting from a mutation of BRCA1 or BRCA2 (BRCA2 is the most common form of both hereditary breast and ovarian cancers) is associated with a personal and/or family history of any of the following:

- Breast cancer diagnosed at age 50 or younger
- Triple-negative breast cancer at age 60 or younger (ER-, PR- and HER2/neu-)
- Ovarian cancer diagnosed before the primary peritoneal cancer at any age
- Both breast and ovarian cancer
- Male breast cancer at any age
- Pancreatic cancer with breast or ovarian cancer in the same individual or on the same side of the family
- Two or more relatives with breast, ovarian, pancreatic, and/or aggressive prostate cancer
- Ashkenazi Jewish ancestry with history of breast, ovarian, or pancreatic cancer
- Previously identified BRCA1 or BRCA2 pathogenic mutation in the family

Note that publicly funded hereditary cancer programs in Canada may use more restrictive criteria when selecting patients for HBOC genetic testing.

In the general population, about 12% of women (1 in 8) will develop breast cancer and about 1.3% (1 in 70) will develop ovarian cancer in their lifetime. While most of these cancers are not hereditary, 5-10% of breast cancer cases and around 9% of ovarian cancer cases are associated with a mutation in cancer predisposition gene.

CLINICAL INDICATIONS FOR GENETIC TESTING

Based on current professional society guidelines, genetic testing for BRCA1 and BRCA2 is indicated for individuals with a personal and/or family history of any of the following:

- A disease-causing mutation was identified.
- A disease-causing mutation was not identified.
- No disease-causing mutation was identified.
- The exact cause of the cancers in the family remains unknown.
- This individual’s risk for cancer remains increased based on family history assessment.
- This individual tested negative for a mutation previously identified in the family.

Benefits of testing include:

- A hereditary cancer risk assessment.
- A genetic aetiology for the diagnosis.
- Additional genetic testing may be considered based on medical and family history.

BENEFITS OF TESTING

Genetic testing can provide individuals and their families with important information by:

- Confirming or excluding hereditary cancer predisposition.
- Identifying individuals at risk for cancer.
- Meeting eligibility for government and insurance reimbursement.
- Clarifying risks to family members.
- Empowering individuals to make family planning decisions.

LifeLabs Genetics offers various types of genetic testing to answer each specific clinical situation. These methods include Sanger Sequencing, MLPA (for deletion/duplication), Next Generation Sequencing (NGS) for multi-gene panels, and direct mutation testing for known familial mutations.

Genetic testing can cure an individual. Our team of certified genetic counsellors and client-care specialists are available to support you along the way.

POSSIBLE RESULTS

Positive

- A disease-causing mutation was identified.
- This individual has an increased risk for specific types of cancer.
- Family members are at an increased risk of carrying the same mutation.

Negative

- The individual tested negative for a mutation previously identified in the family.
- This individual’s risk for cancer is not expected to be increased above the general population risk.

Uninformative

- Individual with a cancer diagnosis.
- No disease-causing mutation was identified.
- Genetic tests offered by LifeLabs Genetics, please visit our website at www.lifelabsCanada.com. You may also contact us by phone Tel: 1-844-GENE-HELP | (1-844-363-4357) | email Ask.Genetics@lifelabs.com

GENETICS

BRCA1 and BRCA2 mutations are inherited in an autosomal dominant manner.

- Each offspring of an individual with a BRCA1 mutation has a 50% chance of inheriting the mutation. Most individuals with a BRCA1 mutation have inherited it from a parent. Individuals with BRCA1 and BRCA2 mutations are more likely to develop cancer at a younger age and have high grade tumours. Among those who develop cancer, variable age at onset and type of cancer is observed, even within the same family. BRCA1 and BRCA2 mutations can also increase the risk of developing other types of cancer including leukemia, testicular cancer, colon cancer, prostate cancer, pancreatic cancer, melanoma, and skin cancer. Other genes, although less frequent, are also associated with an increased risk of breast and ovarian cancer. LifeLabs Genetics offers genetic testing for most of these as well as multi-gene cancer panels. For more information about the genetic testing offered by LifeLabs Genetics, please visit our website at www.LifeLabsGenetics.com. You may also contact us by phone: Tel: 1-844-GENE-HELP | (1-844-363-4357) | email Ask.Genetics@lifelabs.com

GENETIC COUNSELLING

A cancer genetic counselling is an important aspect of care for individuals with risk factors associated with hereditary cancer syndrome. Pre-test counselling is recommended for individuals concerned about their possible risks of HBOC and/or considering genetic testing.

A pre-test session usually includes:

- A hereditary cancer risk assessment based on personal and family medical history.
- Discussion of the appropriateness of genetic testing.
- Medical and psychological implications of test results.
- Possible benefit of an informed result.
- Risk to other family members.

Post-test genetic counseling is also recommended to understand the implications of the results.