BRCA1/2 gene mutations increase the risk of several cancers—including breast and ovarian—and may occur in 1 in 400 individuals in the general population.\(^1\)

Hereditary breast-ovarian cancer syndrome (HBOC) is an autosomal dominant cancer predisposition syndrome caused by germline BRCA1/2 mutations. Offspring of those with a mutation have a 50% chance of inheriting the mutation.

### BRCA1/2 Lifetime Risk

<table>
<thead>
<tr>
<th>Cancer type</th>
<th>BRCA1 (^2) (^5) mutation</th>
<th>BRCA2 (^4) (^7) mutation</th>
<th>General population (^8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female breast</td>
<td>60%-87%</td>
<td>45%-84%</td>
<td>12%</td>
</tr>
<tr>
<td>Ovarian</td>
<td>39%-44%</td>
<td>11%-17%</td>
<td>1%</td>
</tr>
<tr>
<td>Male breast</td>
<td>1%</td>
<td>7%</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

BRCA1/2 mutation carriers are also at an increased risk for fallopian tube, primary peritoneal, prostate, and pancreatic cancers. BRCA2 mutation carriers are also at an increased risk for melanoma, gall bladder, bile duct, and stomach cancers.\(^1\)\(^9\)\(^10\)

Hereditary breast-ovarian cancer syndrome (HBOC) is an autosomal dominant cancer predisposition syndrome caused by germline BRCA1/2 mutations. Offspring of those with a mutation have a 50% chance of inheriting the mutation.

### Indications for BRCA1/2 Genetic Testing\(^1\)\(^9\)

<table>
<thead>
<tr>
<th>YOUR PATIENT</th>
<th>DIAGNOSIS</th>
<th>AGE OF DIAGNOSIS</th>
<th>FAMILY HISTORY</th>
<th>ETHNICITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal history* or close blood relative†</td>
<td>Ovarian, fallopian tube, or primary peritoneal cancer</td>
<td>Any</td>
<td>Not required</td>
<td>Any</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>≤40</td>
<td>Not required</td>
<td>Any</td>
<td></td>
</tr>
<tr>
<td>Breast cancer</td>
<td>Any</td>
<td>Not required</td>
<td>Ashkenazi (Eastern European) Jewish</td>
<td></td>
</tr>
<tr>
<td>Male breast cancer</td>
<td>Any</td>
<td>Not required</td>
<td>Any</td>
<td></td>
</tr>
<tr>
<td>Bilateral breast cancer</td>
<td>First diagnosis ≤50</td>
<td>Not required</td>
<td>Any</td>
<td></td>
</tr>
<tr>
<td>Breast cancer</td>
<td>Any</td>
<td>2 more family members on the same side of the family diagnosed with breast cancer</td>
<td>Any</td>
<td></td>
</tr>
<tr>
<td>Close blood relative</td>
<td>BRCA1/2 mutation</td>
<td>N/A</td>
<td>Identified in a close blood relative</td>
<td>Any</td>
</tr>
</tbody>
</table>

*If the patient does not have a personal history of cancer and the person in the family with the cancer is unavailable to test, consider testing the patient.

†Close blood relatives include parents, siblings, children, aunts, uncles, grandparents, nieces, and nephews on the same side of the family.
Help manage risk and improve chance of early detection

SURVEILLANCE AND RISK-REDUCTION OPTIONS FOR PATIENTS WITH HBOC

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>SURVEILLANCE AND CONSIDERATIONS FOR RISK REDUCTION</th>
</tr>
</thead>
</table>
| Breast cancer | • Semiannual clinical breast exam, beginning at age 25  
                • Annual mammogram, beginning at age 30  
                • Annual breast magnetic resonance imaging (MRI), beginning at age 25 to 29  
                • Bilateral mastectomy (remaining breast in those who have already undergone unilateral mastectomy) |
| Ovarian and fallopian tube cancers | • Consider periodic screening with cancer antigen 125 (CA 125) assay and transvaginal ultrasound at age 30 to 35  
                                          • Salpingo-oophorectomy surgery at age 35 to 40, or when childbearing is complete  
                                          • Identification of BRCA1/2 status in ovarian cancer patients may also influence targeted chemotherapy options |
| Prostate cancer | • Annual digital rectal exam and prostate-specific antigen (PSA) blood test, beginning at age 40 |
| Male breast cancer | • Annual clinical breast examination and breast self-examination, beginning at age 35 |

BRCA1/2 GENETIC TESTING PROCESS

THE PROCESS
The DNA collection procedure is simple, and requires only an in-office saliva collection with our sample collection kit. UPS will pick up your patient samples and deliver them directly to our lab (labels and instructions are included in each kit). Dedicated account services are always available to answer questions and manage requests.

THE TURN-AROUND TIME
10 to 15 days

THE REPORT
Upon completion of DNA extraction and evaluation, a comprehensive report is generated and uploaded to a secure portal with dedicated physician log-in and downloading capabilities. Physician-to-physician consultation is also available with our Medical Director or our Genetic Counselor. Monograph is available upon request.

CONTACT YOUR REPRESENTATIVE OR REACH US DIRECTLY AT OUR EMAIL ADDRESS BELOW TO OBTAIN SAMPLE TEST REPORTS AND DNA SAMPLE COLLECTION KITS FOR THIS OR ANY OF OUR OTHER ADVANCED GENETIC TESTING PANELS.

Jewish Genetic Diseases Carrier Screening  
BRCA1/2 Genetic Testing  
Fragile X Syndrome Genetic Screening  
Hereditary Colon Cancer/Lynch Syndrome Genetic Testing  
Cystic Fibrosis Genetic Carrier Screening  
Pharmacogenomics Testing

ABOUT PREMIER GENOMICS
Premier Genomics is committed to advancing the field of personalized genetic medicine by offering cutting-edge genetic screening services to help practitioners and their patients in pursuit of tailored treatment and optimized, personalized health care. We work together with patients and their insurance providers to help ensure that access to these important genetic tests does not cause patients financial hardship.

References: