ABOUT HEREDITARY BREAST CANCERS

Most breast cancers occur by chance. But, in hereditary breast cancer, the cancer is caused by a changed or damaged gene inherited from either your mother or father. Around 5-10% of all breast cancers in the U.S. are thought to be hereditary. Identification of inherited gene mutations is a crucial step in determining a person's individual risk, empowering them to take charge of their health and to take measures that may reduce their risk of breast cancer.

Learn more about hereditary breast cancers here.

WHAT WE'RE INVESTIGATING

- Identifying new genes that drive growth of HER2-positive (HER2+) breast cancers.
- Developing therapies that target a protein called ALC1 as a new treatment option for people who have BRCA mutations that drive breast cancers.
- Using new advances in genetic testing technology to empower women who carry BRCA mutations to make informed decisions about breast cancer screening and risk-reducing surgery with their health care providers.

INHERITED BRCA GENE MUTATIONS AND CANCER RISK

<table>
<thead>
<tr>
<th>BRCA1 Mutation</th>
<th>BRCA2 Mutation</th>
<th>No BRCA Mutation</th>
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<tr>
<td>50-60%</td>
<td>50-55%</td>
<td>7%</td>
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While everyone has the BRCA1 and BRCA2 genes (BReast CAncer susceptibility genes 1 and 2), those who have an inherited mutation in one or both genes have an increased risk of inherited, or hereditary, breast cancer. Learn more about BRCA1 and BRCA2 mutations and cancer risk in women here and men here.

SPOTLIGHT

Read about Komen Scholar Dr. Olufunmilayo Olopade's Komen-funded research on understanding the contribution of genetic and non-genetic factors to the mortality gap for breast cancer in young women, especially young women of African descent.

WHAT WE’VE LEARNED FROM KOMEN-FUNDED RESEARCH

- Women from The Bahamas appear to be twice as likely to have a BRCA1 mutation than the general population.
- An inherited mutation in the PALB2 gene may increase the risk of breast cancer by 30-60%.
- Mutations in a gene called RECQL are associated with inherited breast cancer and may increase risk by as much as 50%, depending on the mutation.

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