

HER-2 MUTATIONS IN CANCER

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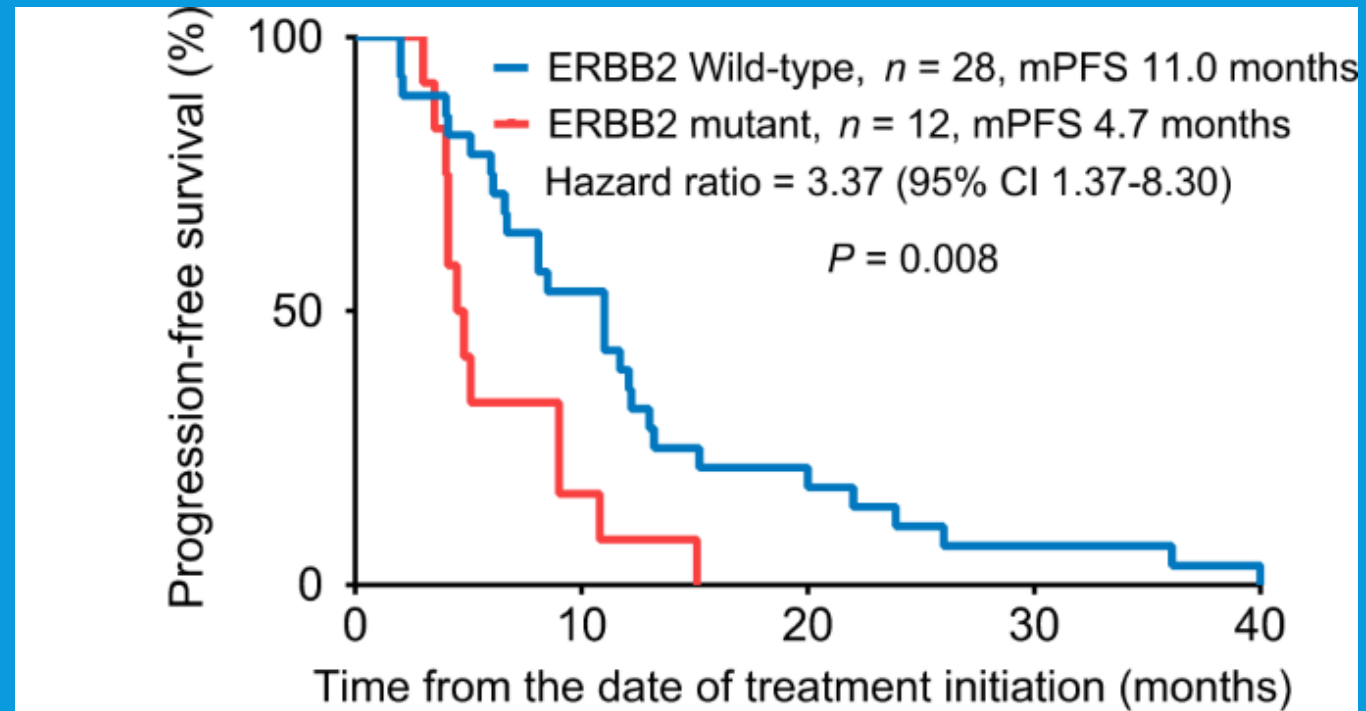
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WHAT HAPPENS WHEN THE HER2 GENE IS MUTATED?

- If the HER2 gene is mutated, **it causes an abnormal increase the amount of HER2 proteins on the surface of the cells.** This causes cells to grow and divide out of control, which may lead to cancer. About 20 percent of breast cancers are HER2-positive, meaning the HER2 gene doesn't function correctly

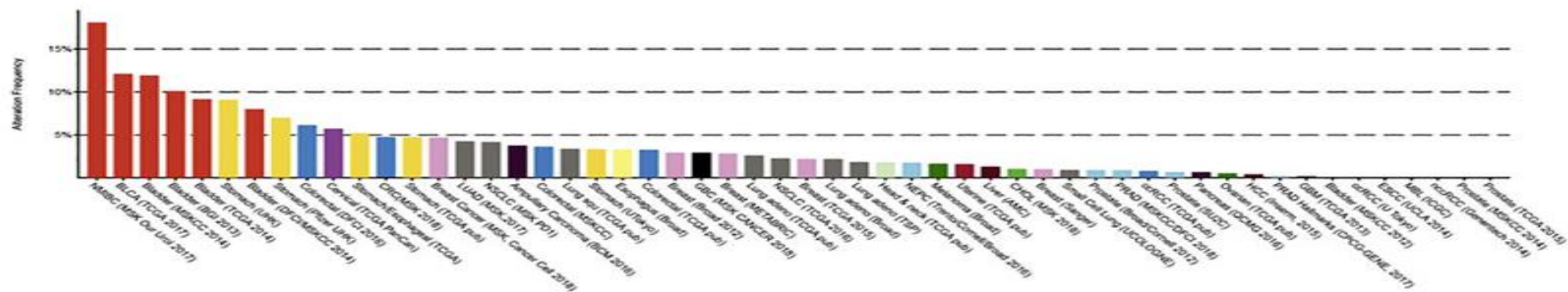
BREAST CANCER STUDIES



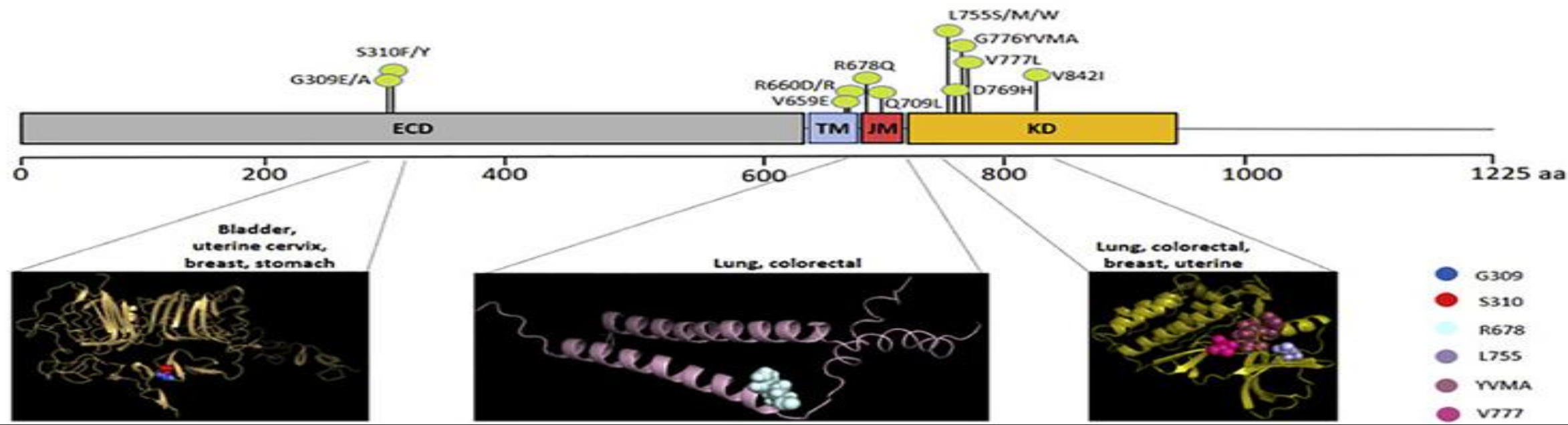
Number at risk

ERBB2 wild-type	28	15	6	2	1
ERBB2 mutant	12	2	0	0	0

a



b



BREAST CANCER

- The most common cancer to have HER2 mutations is **breast cancer**. In fact, HER2-positive cancers make up about 20% of breast cancer cases. However, overexpressed HER2 protein

HER-2 BEHAVIOR

- When breast tissue has extra HER2 receptors (overexpression), breast cells can multiply too quickly. The growth may become uncontrolled and lead to a tumor. **Breast cancer identified as HER2-positive tends to grow faster, spread (metastatic breast cancer) and come back (recur).**

CAUSE

- What is the cause of HER2 mutation?
- The exact cause of HER2 positive breast cancer is **not yet known**, though researchers believe that environment, lifestyle and genetics may all play a role in the development of this malignancy.

WHERE DOES IT GO

- metastatic breast cancer, common places of spread include **the liver, lung, bones, lymph nodes, and unfortunately the brain.**