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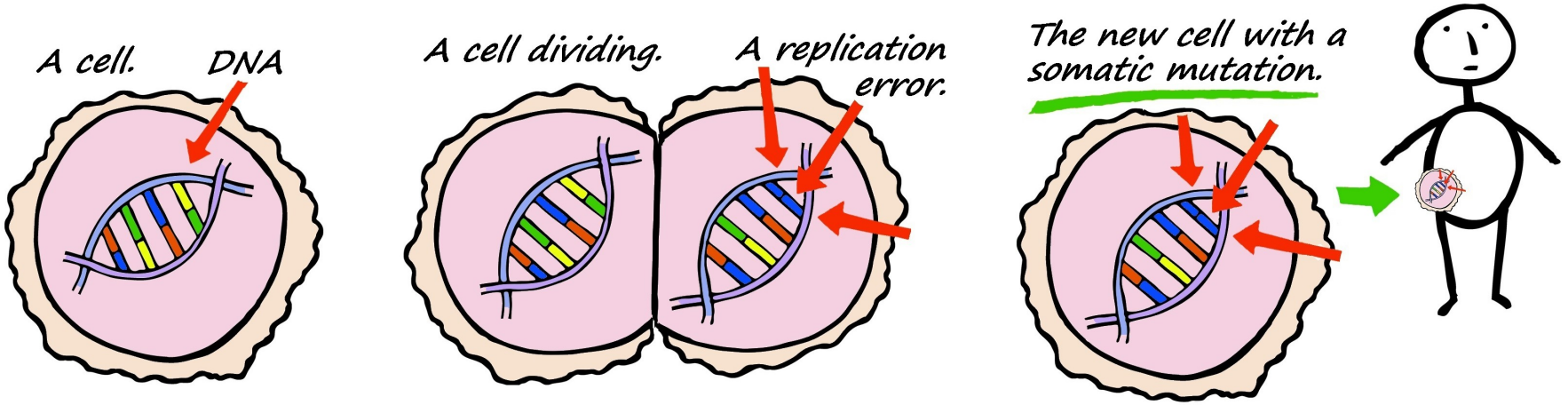
A very Simple Illustration of Somatic and Germline Mutations and Cancer Risk

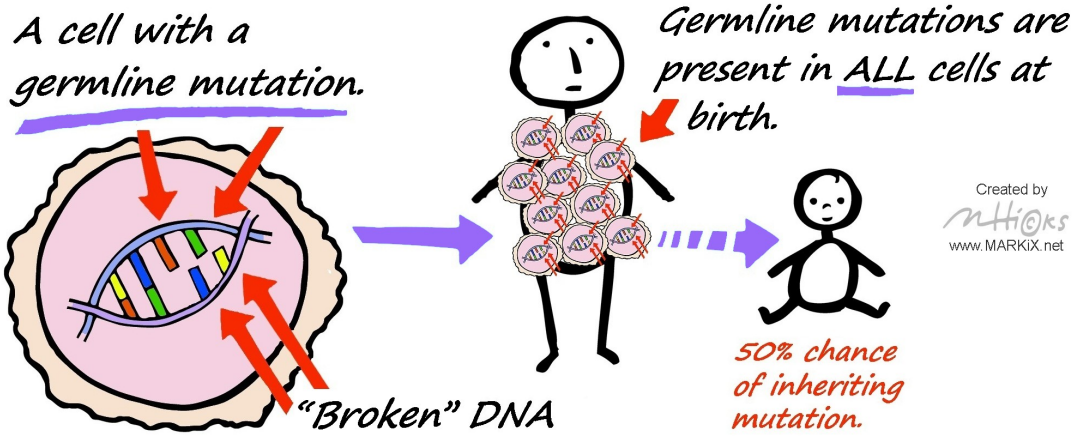
Every second of every day, something vital is going on in everybody's body—cells are dividing. Cells divide to make new cells. They are constantly dividing to replace old, dead, or damaged cells or to help children grow into adults. But sometimes a change happens during the process.



Most somatic mutations are benign and cause no harm. However, occasionally, genetic errors can accumulate and cause cancer and other diseases.

Somatic mutations occur after conception; they were not inherited. Any somatic mutations that happen are not passed on to children.

Germline mutations are inherited and can be passed down to the next generation. Every child of a parent with a germline mutation has a 50% chance of having inherited the same mutation.



Having a germline mutation does not mean you will get cancer, but it does increase the risk. A person with a mutation needs to be proactive and monitored appropriately to reduce that risk.

Some of the cancers associated with germline mutations (*BRCA1, BRCA2, CHEK2, ATM, PALB2, TP53, MLH1, MSH2, MSH6, etc.)* include breast, pancreatic, ovarian, prostate, melanoma, colorectal, and some rare or early-onset cancers.

If someone in the family *(grandparent, parent, sibling, aunt, uncle, cousin)* has a germline mutation, knowing and sharing that information with other family members is very important! Genetic testing saves lives!

1 in 279 individuals carry a germline Lynch Syndrome mutation. 1 in 400 carry a germline BRCA mutation.