We often like to say cancer is always genetic but not always hereditary. What we mean is that cancer develops as a result of accumulated DNA damage, also called variants. Most of the time those variants are acquired from a variety of different sources over the course of a lifetime like environmental exposures, lifestyle habits, occupational hazards, or certain types of viruses. Sometimes these variants happen by random chance. Acquired variants are also called somatic variants, or somatic mutations.

Cancer occurs because these DNA variants cause a cell to quickly grow and divide without normal cellular regulation while continuing to accumulate more and more genetic variants. At some point, this leads to formation of cancer (or a tumor). Because tumor cells have acquired so many genetic variants along the way, the sequence of DNA isolated from a person's tumor can be **very different** from that individual's inherited DNA.

In some cases, testing for the specific variants that are driving a cancer can help to determine what treatments would be best to use. More and more therapies are being developed that can more accurately target these variants that are specific to one cancer, which often results in better outcomes with fewer side effects.

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