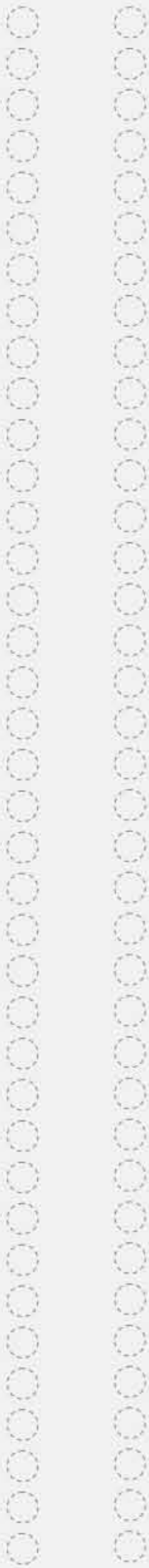


Functions of Cancer Genes

The normal versions of genes that, when mutated, cause cancer can be assigned to three functional categories: cell growth and survival, cell fate, and genome maintenance.

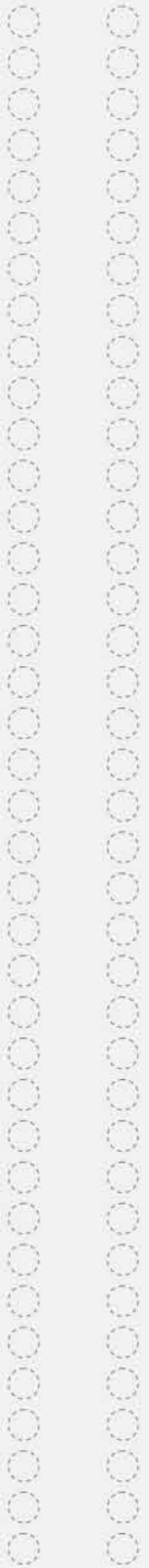
Cell Growth and Survival

Cell division and cell death balance each other. Mutations in genes that regulate these processes offset the balance and result in excessive cell division.



Cell Fate

Many cancer genes regulate differentiation. Differentiated cells often stop dividing. Failure to differentiate can produce excessive cell division and lead to cancer.



Genome Maintenance

These genes correct errors in DNA replication and spontaneous mutations. When genome maintenance genes are mutated, more errors are introduced into the genome with each cell division, vastly increasing the chances of mutating other cancer genes.

