What does clonality look like in LGL leukemia?

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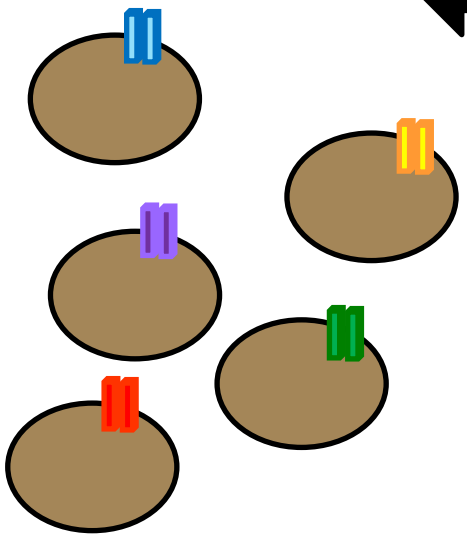
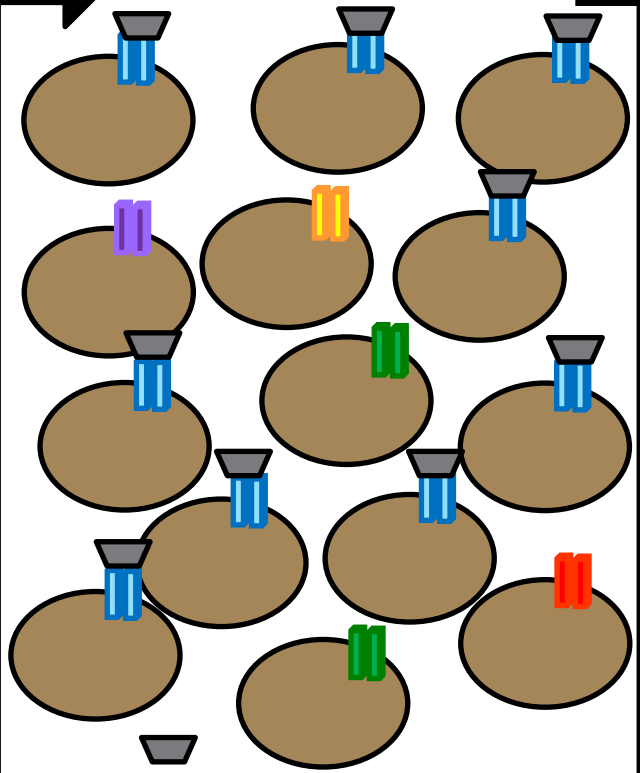
Baseline/Healthy



This diagram is showing a simplified version of the T-cell, with just the TCR marker depicted. This is baseline, or general immune surveillance for antigens. There are five T-cells with five different TCRs in a healthy donor (TCR depicted by different colors). Each color of TCR is made up of different protein subunits (refer to *"What is the TCR?"*), therefore these five TCRs each recognize a different antigen.

reversible

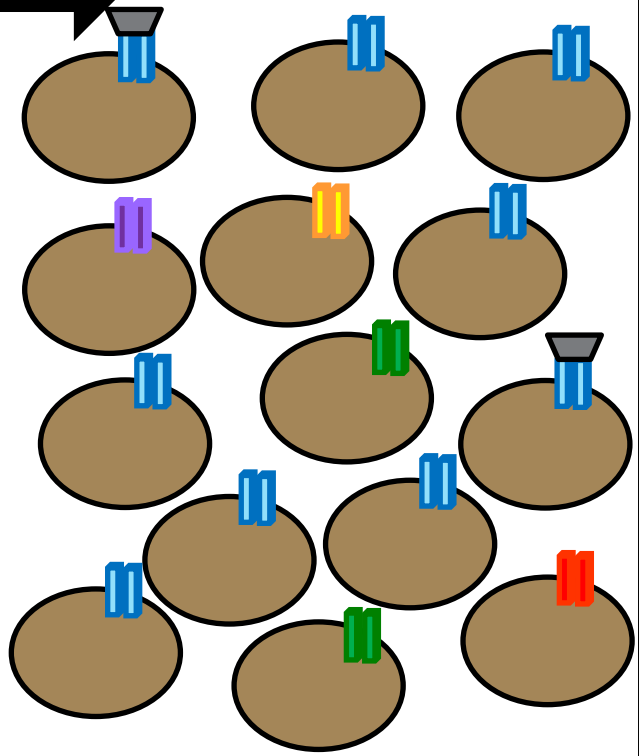
Immune response



A healthy donor will acquire an expanded population of T-cells (depicted as a blue TCR here) if the immune system kicks into full gear to fight off whatever antigen is detected (gray trapezoid). When the antigen is cleared or goes away, the cells will die (the immune response is over).

permanent shift

LGL leukemia



In LGLL, the expanded T-cell population doesn't die when it's supposed to and persists. The antigen (gray trapezoid) may be present in small amounts to perpetuate an immune response. Or, the antigen may be gone but genetic alterations within the LGL cells prevent them from dying. At this time a TCR test would determine that the blue TCR is a clone of T-cells that have not died at the appropriate time.