Mind Your B’s and T’s

The immune system in five easy pieces

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Lymphocytes: Particular types of white blood cells, which come in three varieties: **T cells** and **B cells** respond to specific pathogens (e.g., viruses, parasites, fungi) and cancers; while **natural killer (NK) cells** work more generally, participating in the immune system’s first-line defenses.

T cells (T-lymphocytes): These cells coordinate immune responses and directly attack pathogens and cancer cells; named for the thymus gland, where they mature. T cells can be either **CD4s** or **CD8s**.

CD4 cells (T4 cells, T-Helper cells): T cells that coordinate the immune system’s complex responses, helping just about every type of immune cell do its thing. Some CD4s called “memory cells” remember every past invader and can quickly respond when one reappears. HIV infection often depletes CD4s, leaving the body prey to pathogens.

CD8 cells (T8 cells, T-Suppressor cells): T cells that are the immune system’s most sophisticated attackers, recognizing and killing infected and cancerous cells. They also secrete chemicals that can block HIV replication.

B cells (B-lymphocytes): These cells (formed in the bone marrow) produce antibodies -- custom-designed proteins that neutralize pathogens or tag infected cells for attack by other immune-system cells.

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