



# Fighting Blind

## Body Doesn't Know When CD4s Drop

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The all-important immune system can heal cuts and cure colds, but it can't seem to keep track of its own army of cells -- a weakness that HIV exploits, says a group of investigators, primarily at the Johns Hopkins School of Public Health. While the body manufactures two major types of disease-fighting T-cells -- CD4 and CD8 cells -- HIV infects and destroys only the CD4 variety.

Unfortunately, according to a theory called blind T-cell homeostasis, the immune system doesn't distinguish between the types when it's making new ones, and that oversight results in the characteristic plummet in CD4 count -- and eventual immune system failure -- among people with HIV disease. The investigators confirmed this hypothesis by studying data from 372 people in the Multicenter AIDS Cohort Study (MACS) and, as expected, they found most experienced a progressive decline in CD4 cells while their CD8 cells increased. In addition, they discovered a fundamental change occurs in people with HIV about two years before their first AIDS-defining illness, when the entire production of new T-cells breaks down and both CD4 and CD8 cell counts fall. The body's organization problem suggests medical researchers should continue to find ways to boost CD4 counts in people with HIV to counteract the body's "blindness," the Hopkins study said.

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