Exhausted B cells fail to fight HIV

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HIV tires out the cells that produce virus-fighting proteins known as antibodies, according to a human study that will be published online July 14 in the *Journal of Experimental Medicine*.

Antibodies stick to HIV particles, preventing them from infecting other cells and triggering their destruction by immune cells. This antibody response starts out strong in HIV-infected individuals but eventually peters out. To find out why, scientists from the National Institute of Allergy and Infectious Diseases examined the cells that make the antibodies, known as B cells.

The group now finds that HIV gradually depletes the numbers of healthy, functional B cells. Individuals who had high levels of HIV in their blood had lots of B cells, but they failed to replicate normally or to produce high-quality antibodies. The fatigued B cells sported a protein called FCRL4, which dampens B cells' ability to respond to infection. How HIV turns on FCRL4 remains to be seen.

HIV is already known to knock out the defensive cells that directly attack and destroy infected cells. This new study reveals yet another way the virus dismantles the immune system.

Source: Journal of Experimental Medicine

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