

In the news

AWAKENING THE THYMUS IN ADULTS

In a study published in *The Journal of Clinical Investigation* (21 February 2008), investigators have shown that it is possible to pharmacologically reverse thymic involution (the reduced capacity of the thymus in adults) in patients with HIV.

HIV infection destroys T cells, leaving infected individuals highly susceptible to even the most minor of infections. Therapeutic stimulation of T-cell production could help to restore the besieged immune system, but it was presumed that the thymus could not be reactivated in adults.

Previous studies in animal models suggested that administration of growth hormone might help to promote thymopoiesis. So, researchers at Gladstone Institute of Virology and Immunology and at the University of California, San Francisco (UCSF), USA, enrolled 22 patients with HIV, who had received effective antiretroviral therapy but still had persistently low CD4⁺ T-cell numbers, to examine the effect of growth hormone on thymic mass and cellular output.

Growth-hormone treatment for 1 year was associated with an increase in thymic mass and a 30% increase, on average, in circulating CD4⁺ T-cell numbers. Joseph McCune, a Professor of Medicine at UCSF and senior author on this study, stated that these findings “dispel the previously held notion that the thymus cannot be summoned into action later in life.” (*ScienceDaily*, 22 February 2008.)

Laura Napolitano, the lead author of this study, said that these findings are “an important step to determine whether immune therapies might someday benefit patients who need more T cells.” (*The Guardian*, 22 February 2008.)

Although these findings are encouraging, the researchers urge caution as there is still much to understand about “whether a recovered thymus produces good quality T cells that provide satisfactory immune protection” (*ScienceDaily*).

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