

## Hiv-specific Cd8+ T-cell Proliferation Is Prospectively Associated With Delayed Disease Progression.

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### **Abstract:**

Human immunodeficiency virus (HIV)-specific CD8(+) T-cell proliferation is consistently correlated with enhanced host HIV immune control, but whether proliferative responses are a cause or consequence of immune protection is unclear. We measured Env-specific CD8(+) T-cell proliferation and interferon (IFN)- $\gamma$  secretion in HIV-infected participants with CD4 counts >200, who then completed 121 person-years of prospective follow-up to monitor HIV disease progression. In all, 13 of 31 participants (42%) reached end point during longitudinal follow-up. Strong Env-specific CD8(+) T-cell proliferation (>10% of CD8(+) T cells) was observed in 14/31 participants at baseline, and this was associated with a longer time to HIV disease progression end point, stratified baseline CD4 count ( $P=0.016$ ). No associations were observed for IFN- $\gamma$  ELISPOT responses and progression ( $P>0.2$ ). Strong proliferation remained significant in multivariate Cox regression analyses ( $P=0.044$ ) as an independent predictor of delayed HIV disease progression, along with baseline CD4 count ( $P=0.04$ ). Duration of HIV infection was associated with more rapid progression in univariate, but not multivariate, analysis ( $P=0.112$ ). Age and baseline viral load were not predictive of progression. HIV-specific CD8(+) T-cell proliferation was a correlate of protective immunity in this prospective study; such responses may be important for HIV vaccine protection.