



# UCLA Center for AIDS Research and Education

## Beta-Blockade to inhibit HIV-1 Replication

### Objective and Background

The scientific objective is to determine whether suppression of sympathetic nervous system activity by using beta-blockers might help suppress HIV-1 viral load and/or facilitate recovery of CD4+ T cell levels.

Highly active antiretroviral therapy (HAART) can rapidly suppress HIV-1 replication, but its long-term effectiveness varies across individuals. It is not known why some show higher levels of residual viral replication during HAART, but it is clear that such differences contribute to treatment failure and the emergence of drug-resistant viral strains. Recent data indicate that high levels of activity in the sympathetic division of the autonomic nervous system (ANS) may support residual HIV-1 replication and thus undermine the long-term efficacy of HAART. The present studies seek to determine whether using beta-blockers will lead to suppression of sympathetic activity, which might inhibit HIV-1 replication. Such results would lay a foundation for adjunctive therapies aimed at maximizing HIV-1 suppression during long-term antiretroviral therapy. **Duration of the study:** 8 weeks.

### Inclusion and Exclusion Criteria

- HIV positive men or women, 18 years to 65 years of age.
- CD4 count greater than 200 copies/mm<sup>3</sup>, viral load greater than 400 copies/mm<sup>3</sup> during the previous three months.
- No history of an AIDS –defining illness.
- No other illness that would rule out the use of beta blockers such as: cardiovascular disease, neurological disease, hypotension or unusual blood pressure disorders, asthma or diabetes. No other medications that would cause a drug interaction such as antidepressants or antihypertensives.

### Investigators

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