

# Initial CD4+ T Cell Counts in Patients with Newly Diagnosed HIV Infection Indicate That a Substantial Proportion of These Patients Have Advanced Disease Regardless of Gender, Race, or Socio-economic Status

M. Dybul,<sup>1\*</sup> R. Bolan,<sup>2†</sup> D. Condoluci,<sup>3†</sup> R. Cox-Iyamu,<sup>4†</sup> R. Redfield,<sup>5†</sup> C. Hallahan,<sup>1</sup> K. Sathasivam,<sup>4</sup> M. Folino,<sup>3</sup> M. Weisberg,<sup>2</sup> M. Andrews,<sup>3</sup> B. Hidalgo,<sup>1</sup> J. Vasquez,<sup>1</sup> and A.S. Fauci<sup>1</sup>

<sup>1</sup>Laboratory of Immunoregulation, NIAID/NIH, MD, US, <sup>2</sup>Jeffrey Goodman Special Care Program, CA, US, <sup>3</sup>Garden State Infectious Disease Associates, NJ, US,

<sup>4</sup>Whitman WalkerClinic, DC, US, <sup>5</sup>Institute of Human Virology, MD, US; <sup>†</sup>These authors contributed equally to this work.

## Introduction

- CD4+ T cell counts are a significant determinant of the stage of HIV disease and prognosis
- A CD4+ T cell count < 200 cells/mm<sup>3</sup> is an AIDS-defining event by CDC criteria and may be associated with a poor response to therapy
- Current guidelines recommend initiation of HAART in many individuals when the CD4+ T cell count declines to < 350 cells/mm<sup>3</sup>

## Question

At what CD4+ T cell count are individuals in urban clinical settings diagnosed with HIV infection?

## Methods

- Initial CD4+ T cell counts of individuals with newly diagnosed HIV infection in 1999 or 2000 were mined from computer files of 4 clinics in urban settings: Jeffrey Goodman Special Care Program (JGC), Los Angeles; Garden State Infectious Diseases Associates (GSID), Voorhees, NJ; Whitman-Walker Clinic (WWC), Washington, DC, and; Institute of Human Virology (IHV), Baltimore, Maryland. Patient characteristics and risk factors for acquiring HIV infection are provided in Tables 1 and 2, respectively.
- Data were further analyzed by gender, race and socio-economic status.

Table 1 Patient Characteristics

Site	Total Patients	Gender		Race			Socio-Economic	
		Female	Male	Black	White	Latino	Public Assistance	Private Insurance
GSID	752	223	527	312	349	80	525	276
IHV	407	153	249	328	47	0	Not available	Not available
JGC	328	9	319	25	137	124	276	Not available
WWC	736	214	522	577	90	50	Not available	Not available
<b>Total</b>	<b>2,223</b>	<b>599</b>	<b>1,617</b>	<b>1,242</b>	<b>623</b>	<b>254</b>	<b>801</b>	<b>276</b>

Table 2. Risk Factors for Acquiring HIV Infection\*

Site	Sexual Transmission		Blood Transmission		
	MSM**	Heterosexual	IVDU#	Transfusion/Occupational	Other
GSIDC	39%	35%	18%	2%	6%
IHV	12%	42%	45%	0%	1%
JGC	80%	5%	5%	0%	10%
WWC	41%	46%	10%	2%	1%

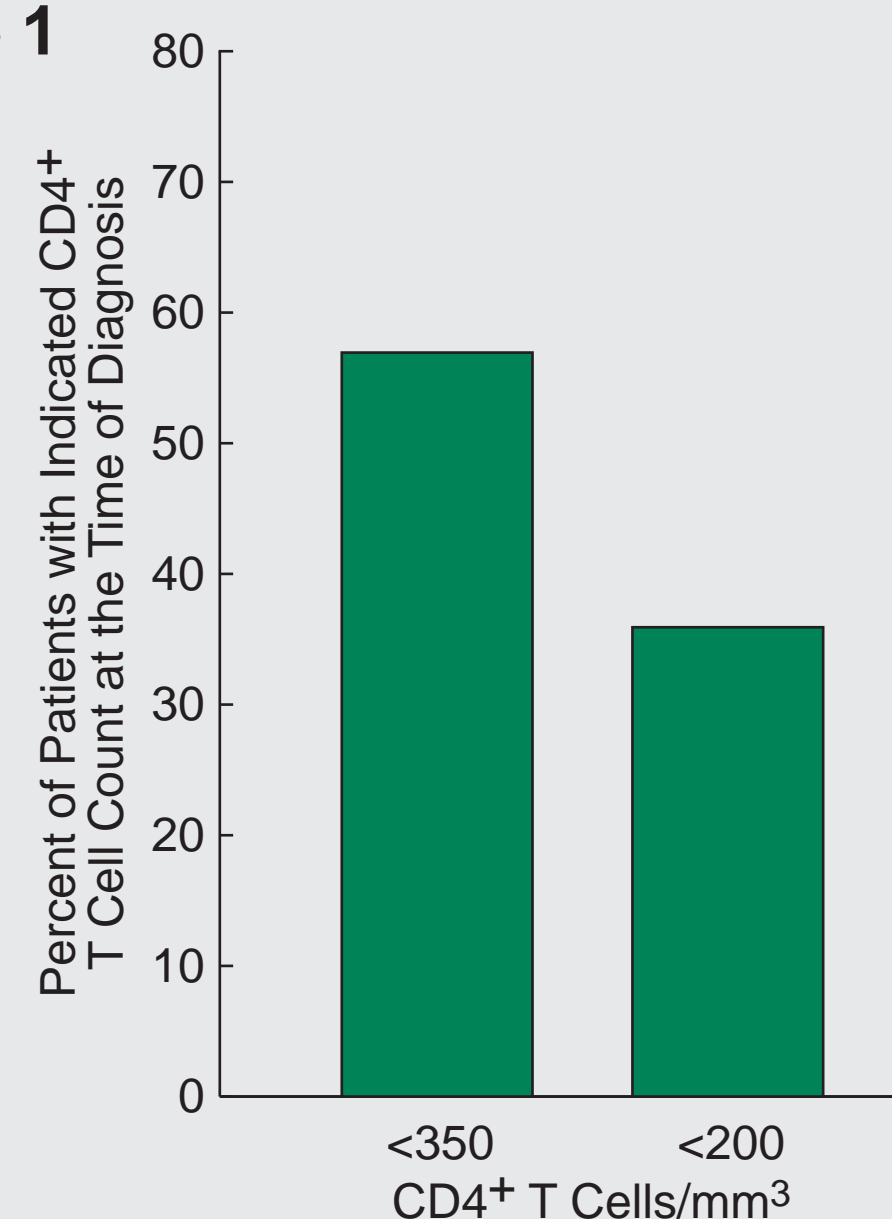
\* Overall percentages for the total clinic populations  
\*\* Men who have sex with men  
# Intravenous drug use

## Results

### CD4+ T cell counts at the time of diagnosis of HIV infection

- 57% of 2,223 individuals with newly diagnosed HIV infection had a CD4+ T cell count <350 cells/mm<sup>3</sup> and 36% had a CD4+ T cell count < 200 cells/mm<sup>3</sup> (Figure 1).

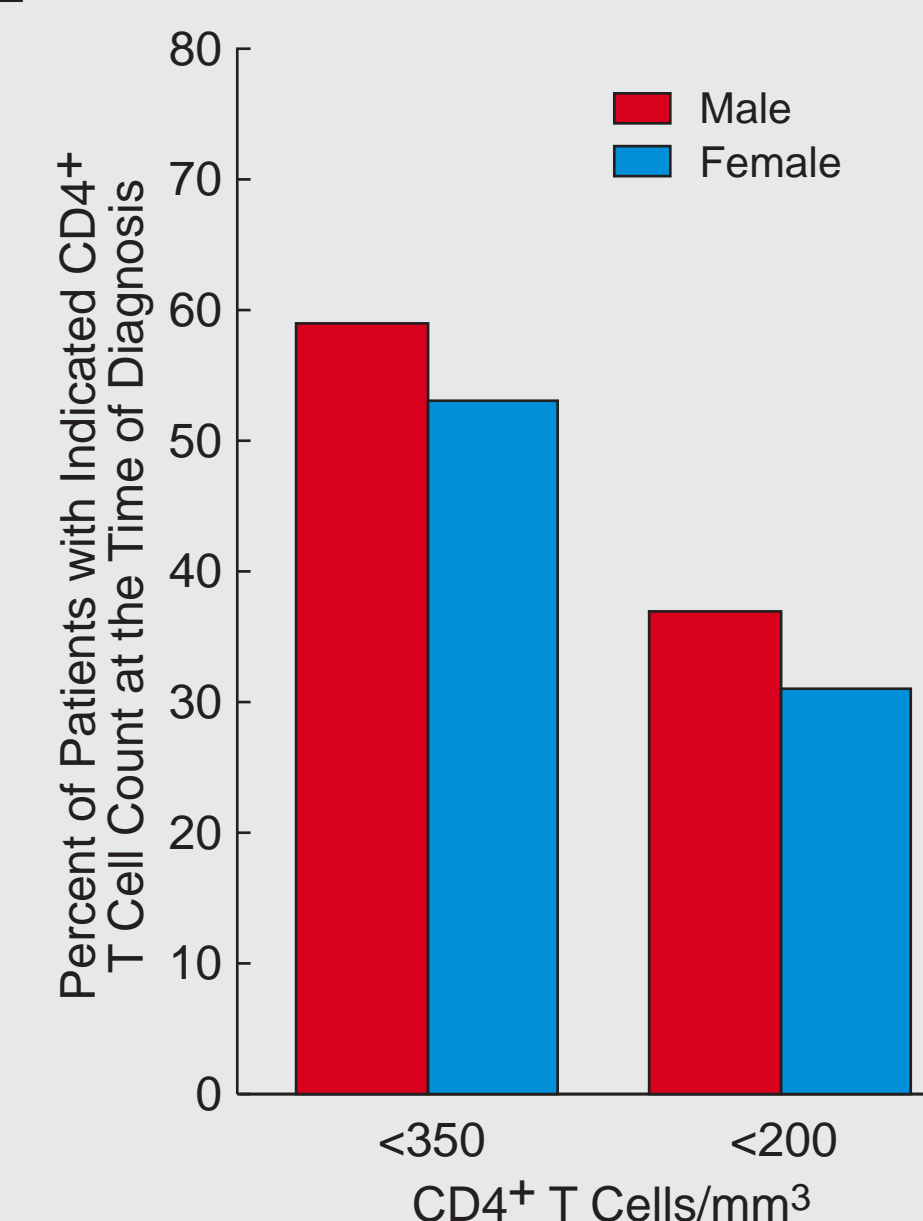
Figure 1



### Effect of gender on CD4+ T cell counts at the time of diagnosis of HIV infection

- 59% of males and 53% of females had an initial CD4+ T cell count < 350 cells/mm<sup>3</sup> (Figure 2). Although the difference achieved statistical significance (p=0.04), only 1 site had a statistically significant difference between men and women (GSID, p<0.001).
- 37% of males and 31% of females had an initial CD4+ T cell count <200 cells/mm<sup>3</sup> (Figure 2). Although the pooled data demonstrated a marginal statistically significant difference (p=0.04), there was no statistically significant difference at any individual site (p=0.05 to p>0.5)

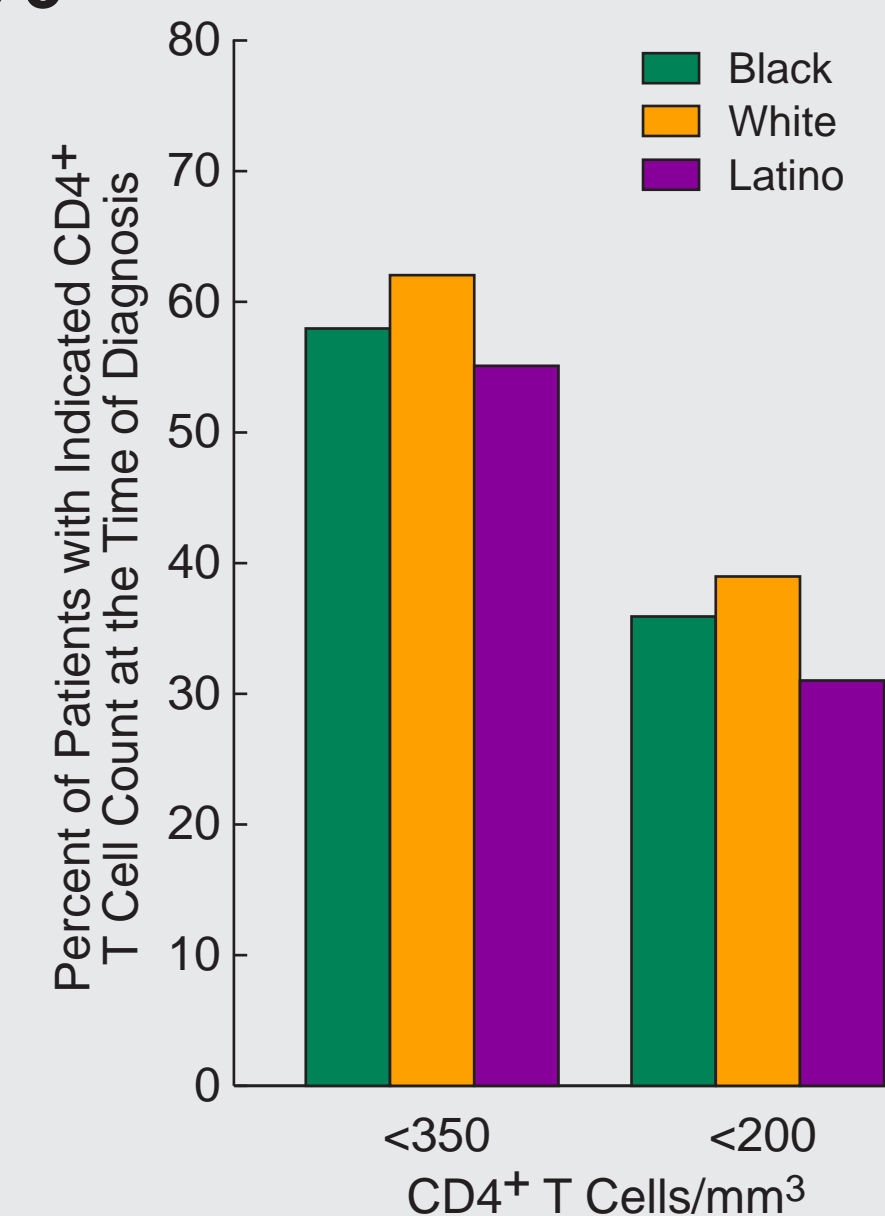
Figure 2



### Effect of race on CD4+ T cell counts at the time of diagnosis of HIV infection

- race designation was available for 2,119 individuals.
- 59%, 62% and 55% of black, white and latino individuals had initial CD4+ T cell counts < 350 cells/mm<sup>3</sup> (Figure 3) (p>0.5).
- 36%, 39% and 31% of black, white and latino individuals had an initial CD4+ T cell count < 200 cells/mm<sup>3</sup> (Figure 3) (p>0.5).

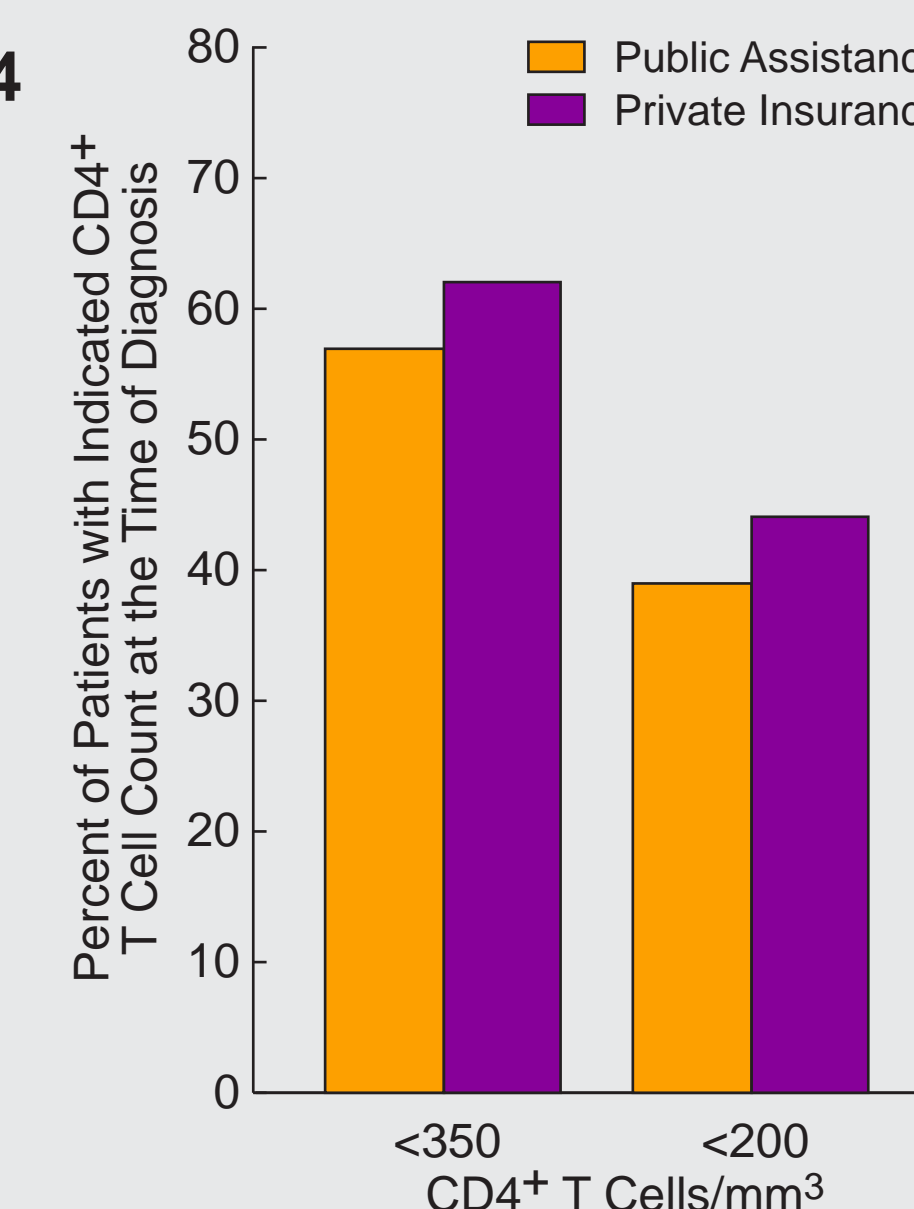
Figure 3



### Effect of socio-economic status on CD4+ T cell counts at the time of diagnosis of HIV infection

- a designation by socio-economic status was available for 2 sites (GSID and JGC).
- 57% of individuals receiving public assistance and 62% of individuals with private health insurance had an initial CD4+ T cell count < 350 cells/mm<sup>3</sup> (Figure 4)(p>0.5).
- 39% of individuals receiving public assistance and 44% of individuals with private health insurance had an initial CD4+ T cell count < 200 cells/mm<sup>3</sup> (Figure 4)(p>0.5).

Figure 4



## Conclusions

- A majority of individuals with newly diagnosed HIV infection in urban settings have relatively advanced disease as determined by CD4+ T cell count regardless of gender, race or socio-economic status.
- A significant number of patients have AIDS as determined by CD4+ T cell count at the time that they are diagnosed with HIV.
- Enhanced educational efforts regarding the importance of HIV testing for at-risk individuals across gender, race and socio-economic strata may be important to identify HIV-infected individuals earlier in infection. This in turn could influence treatment decisions that could impact on the prognosis of patients that receive antiretroviral therapy.