

Supplementary Table 1. Body mass index category after three years of antiretroviral therapy, stratified by race and sex in NA-ACCORD (n=13,451)				
White males (n=5424)				
Baseline BMI category	BMI category after 3 years of ART			
	Underweight <18.5 kg/m <sup>2</sup>	Normal 18.5-24.9 kg/m <sup>2</sup>	Overweight 25.0-29.9 kg/m <sup>2</sup>	Obese ≥30 kg/m <sup>2</sup>
Underweight	83 (37%)	135 (60%)	6 (3%)	1 (<1%)
Normal	47 (2%)	2175 (74%)	673 (23%)	50 (2%)
Overweight	1 (<1%)	253 (15%)	1169 (68%)	298 (17%)
Obese	0	6 (1%)	102 (19%)	425 (80%)
Non-white males (n=5823)				
Baseline BMI category	BMI category after 3 years of ART			
	Underweight	Normal	Overweight	Obese
Underweight	96 (35%)	161 (59%)	14 (5%)	2 (1%)
Normal	71 (2%)	2239 (73%)	690 (22%)	67 (2%)
Overweight	3 (<1%)	262 (15%)	1157 (67%)	307 (18%)
Obese	0	9 (1%)	104 (14%)	641 (85%)
White females (n=414)				
Baseline BMI category	BMI category after 3 years of ART			
	Underweight	Normal	Overweight	Obese
Underweight	7 (54%)	6 (46%)	0	0
Normal	10 (6%)	128 (77%)	27 (16%)	1 (1%)
Overweight	0	33 (29%)	62 (55%)	17 (15%)
Obese	0	3 (2%)	14 (11%)	106 (86%)
Non-white females (n=1790)				
Baseline BMI category	BMI category after 3 years of ART			
	Underweight	Normal	Overweight	Obese
Underweight	37 (53%)	31 (44%)	2 (3%)	0
Normal	29 (5%)	423 (70%)	126 (21%)	25 (4%)
Overweight	1 (<1%)	87 (17%)	320 (62%)	106 (21%)
Obese	1 (<1%)	10 (2%)	40 (7%)	552 (92%)
Abbreviations: ART, antiretroviral therapy; BMI, body mass index. Non-white category includes Hispanics.				
Shaded cells represent patients who moved to a higher BMI category after 3 years of ART				
633 patients were missing a BMI at 3 years or had unknown race classification				

**Supplementary Table 2a. Predicted CD4+ cell count by BMI value and years of ART for the primary analysis (n=14,084)**

Years of ART	BMI*				
	18.5 kg/m <sup>2</sup>	22 kg/m <sup>2</sup>	25 kg/m <sup>2</sup>	30 kg/m <sup>2</sup>	40 kg/m <sup>2</sup>
<b>0 (baseline)</b>	246 cells/μl	288	311	328	347
<b>1</b>	387	416	442	470	497
<b>3</b>	427	483	515	564	611
<b>5</b>	431	498	544	606	665

Abbreviations: ART, antiretroviral therapy; BMI, body mass index

\*BMI is at time of CD4+ count measurement (e.g., at after 3 years of ART), irrespective of pre-treatment BMI value

**Supplementary Table 2b. Predicted CD4+ cell count by BMI value and years of ART for the sensitivity analysis incorporating data from the 1133 female patients excluded in the primary analysis (n=15,217)**

Years of ART	BMI*				
	18.5 kg/m <sup>2</sup>	22 kg/m <sup>2</sup>	25 kg/m <sup>2</sup>	30 kg/m <sup>2</sup>	40 kg/m <sup>2</sup>
<b>0 (baseline)</b>	242 cells/μl	283	306	324	344
<b>1</b>	385	410	436	464	495
<b>3</b>	423	475	509	557	601
<b>5</b>	422	489	535	600	658

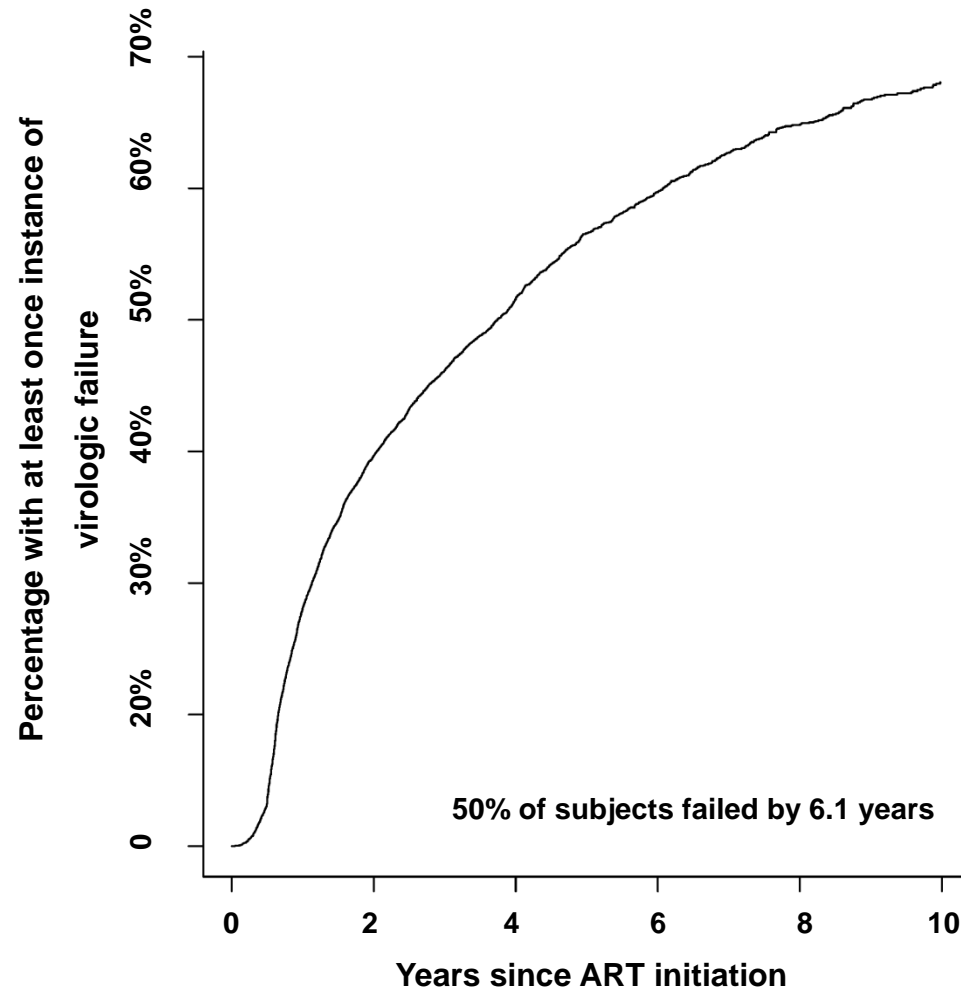
Abbreviations: ART, antiretroviral therapy; BMI, body mass index

\*BMI is at time of CD4+ count measurement (e.g., at after 3 years of ART), irrespective of pre-treatment BMI value

**Supplementary Table 3. Clinical characteristics of NA-ACCORD participants maintaining virologic suppression for  $\geq 50\%$  of follow-up, stratified by body mass index at antiretroviral therapy initiation (n=9,796)**

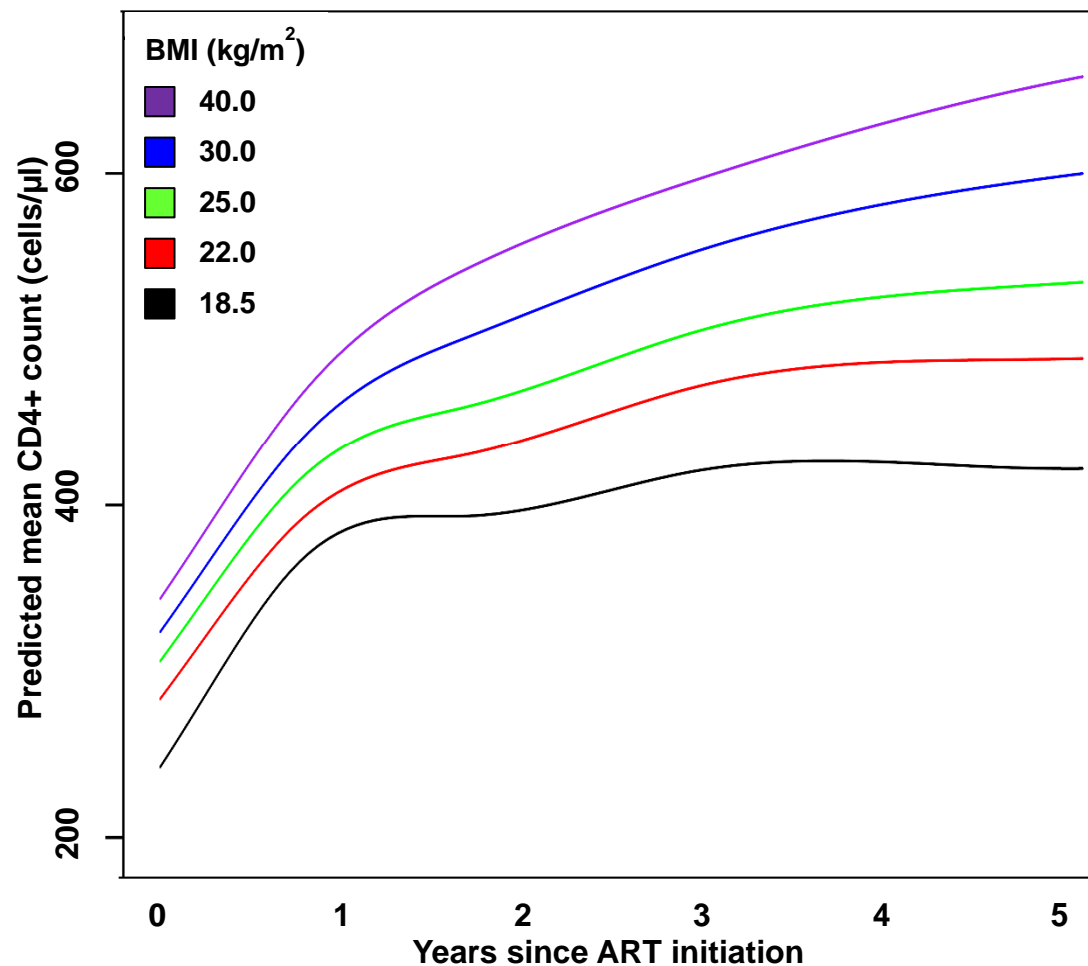
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**Supplementary Figure 1:** Cumulative incidence of virologic failure among cohort participants



Virologic failure defined as the first occurrence of a plasma HIV-1 RNA >1000 copies/ml or at the second of two consecutive measurements between 400 and 999 copies/ml

**Supplementary Figure 2.** Predicted mean CD4+ cell count over time on antiretroviral therapy, stratified by time-updated body mass index. Cohort includes the 1133 women excluded from the primary analysis due to a >10% weight change over a 6 month period during follow-up (n=15,271 patients)



Predicted mean CD4+ cell counts over 5 years of ART were extracted from the linear mixed effects model at different BMI values. Model is adjusted for time-updated BMI, age, sex, race, initial ART regimen class, year of ART start, cohort, and baseline CD4+ cell count and  $\log_{10}$  HIV 1-RNA.