

Supplementary table S1: Baseline Characteristics by whether participant had baseline biomarkers and good quality spirometry.

	Had Baseline Biomarker and acceptable spirometry		
	Yes	No	Total
	N (%) or Median (IQR)	N (%) or Median (IQR)	N (%) or Median (IQR)
No. of participants	903 (91.2%)	87 (8.8%)	990 (100.0%)
<u>Demographics</u>			
Age (years)	36 (30, 44)	38 (31, 44)	36 (30, 44)
Female	254 (28.1%)	38 (43.7%)	292 (29.5%)
Race			
Black	345 (38.2%)	36 (41.4%)	381 (38.5%)
Latino/Hispanic	158 (17.5%)	13 (14.9%)	171 (17.3%)
Asian	87 (9.6%)	17 (19.5%)	104 (10.5%)
White	304 (33.7%)	20 (23.0%)	324 (32.7%)
Other	9 (1.0%)	1 (1.1%)	10 (1.0%)
<u>Region</u>			
Africa	287 (31.8%)	35 (40.2%)	322 (32.5%)
Asia	85 (9.4%)	17 (19.5%)	102 (10.3%)
Europe/Israel/Australia	282 (31.2%)	16 (18.4%)	298 (30.1%)
Mexico/South America	169 (18.7%)	14 (16.1%)	183 (18.5%)
United States	80 (8.9%)	5 (5.7%)	85 (8.6%)
<u>HIV history</u>			
Likely mode of HIV infection			
Injection drug use	13 (1.4%)	1 (1.1%)	14 (1.4%)
Male sexual contact with person of same sex	454 (50.3%)	28 (32.2%)	482 (48.7%)
Sexual contact with person of opposite sex	393 (43.5%)	46 (52.9%)	439 (44.3%)

Other/unknown	43 (4.8%)	12 (13.8%)	55 (5.6%)
Years HIV positive	1.2 (0.4, 3.5)	1.1 (0.4, 4.4)	1.2 (0.4, 3.5)

Lab results

CD4 count (cells/mm ³)	647 (584, 766)	671 (590, 801)	649 (584, 769)
CD8 count (cells/mm ³)	1026 (760, 1411)	902 (750, 1225)	1017 (758, 1399)
CD4/CD8 ratio	0.66 (0.47, 0.93)	0.75 (0.54, 1.02)	0.66 (0.48, 0.94)
Nadir CD4 (cells/mm ³)	550 (482, 659)	594 (516, 685)	553 (486, 663)
Log HIV-RNA (copies/ml)	4.2 (3.5, 4.7)	4.0 (3.3, 4.6)	4.2 (3.5, 4.7)
HIV-RNA ≤ 400 copies/mL	87 (9.6%)	10 (11.8%)	97 (9.8%)

Smoking history

Current smoker	257 (28.5%)	17 (19.5%)	274 (27.7%)
Previous smoker	101 (11.2%)	8 (9.2%)	109 (11.0%)
Never smoked	545 (60.4%)	62 (71.3%)	607 (61.3%)
Pack years smoking (all participants)	0.0 (0.0, 4.0)	0.0 (0.0, 0.6)	0.0 (0.0, 3.5)
Pack years smoking (current and previous smokers)	6.5 (2.0, 15.0)	5.0 (2.0, 12.0)	6.0 (2.0, 15.0)
Currently smokes cigars, cigarillos, or a pipe	44 (4.9%)	2 (2.3%)	46 (4.6%)
Prior CVD	7 (0.8%)	0 (0.0%)	7 (0.7%)

Medical history

Body mass index (kg/m ²)	24.8 (22.2, 28.4)	24.9 (22.1, 29.1)	24.8 (22.2, 28.4)
Hypertension	169 (18.7%)	14 (16.1%)	183 (18.5%)
Diabetes	32 (3.5%)	4 (4.6%)	36 (3.6%)
Hepatitis B	39 (4.4%)	4 (4.8%)	43 (4.4%)
Hepatitis C	28 (3.2%)	0 (0.0%)	28 (2.9%)
Hepatitis B or C	66 (7.3%)	4 (4.8%)	70 (7.1%)
Osteoporosis	3 (0.3%)	0 (0.0%)	3 (0.3%)
Recent respiratory illness	242 (26.8%)	20 (23.0%)	262 (26.5%)
Felt downhearted and depressed in past 4 weeks	294 (37.0%)	22 (29.3%)	316 (36.4%)

Respiratory History

Spirometry grade

A	509 (56.4%)	47 (54.0%)	556 (56.2%)
B	202 (22.4%)	18 (20.7%)	220 (22.2%)
C	192 (21.3%)	22 (25.3%)	214 (21.6%)
FEV ₁ (L)	3.4 (2.7, 4.0)	3.0 (2.3, 3.7)	3.4 (2.7, 4.0)
FVC (L)	4.1 (3.3, 4.9)	3.5 (2.7, 4.5)	4.1 (3.3, 4.9)
FEV ₁ /FVC ratio ¹	0.83 (0.78, 0.86)	0.84 (0.79, 0.87)	0.83 (0.78, 0.86)
< 0.7	50 (5.5%)	4 (4.6%)	54 (5.5%)
95% C.I.	4.1, 7.1	4.1, 8.5	3.1, 7.2
< lower limit or normal	60 (6.6%)	7 (8.0%)	67 (6.8%)
95% C.I.	5.3, 8.5	5.8, 10.8	3.6, 7.9
FEV ₁ as % of predicted ¹	96.6 (86.0, 104.0)	92.4 (82.6, 102.3)	96.1 (85.4, 103.8)
≥ 80%	778 (86.2%)	74 (85.1%)	852 (86.1%)
50% - 79%	119 (13.2%)	13 (14.9%)	132 (13.3%)
30% - 49%	6 (0.7%)	0 (0.0%)	6 (0.6%)
< 30%	0 (0.0%)	0 (0.0%)	0 (0.0%)

Supplementary Table S2: Longitudinal analyses limited to deferred arm of START pulmonary substudy with lung function data censored after initiation of ART. Univariable (unadjusted) and multivariable¹ (adjusted) linear regression of longitudinal changes in FEV₁ (mL/yr), FVC (mL/yr), and FEV₁/FVC (x1000/yr) on log₂-transformed baseline biomarkers.

	<i>Univariable</i>			<i>Multivariable¹</i>		
	β^3	95% C.I.	P-value	β^3	95% C.I.	P-value
FEV₁ Slope						
D-dimer (mcg/ml)	5.5	-12.0, 23.0	0.54	3.2	-14.0, 20.5	0.71
hsCRP (mcg/ml)	3.8	-5.6, 13.3	0.42	3.5	-5.8, 12.8	0.46
IL-6 (pg/ml)	-6.8	-25.1, 11.4	0.46	-5.4	-23.3, 12.6	0.56
IL-27 (pg/ml)	0.0	-9.3, 9.3	1.00	-1.0	-10.1, 8.1	0.83
Serum amyloid A (mg/L)	-0.5	-11.4, 10.3	0.93	-0.5	-11.2, 10.3	0.93
sICAM-1 (mcg/mL)	31.3	4.3, 58.3	0.02	24.2	-2.3, 50.8	0.07
sVCAM-1 (mcg/mL)	7.1	-19.8, 34.1	0.60	3.9	-22.6, 30.4	0.77
IL-6/D-dimer score ²	-7.4	-51.6, 36.8	0.74	-6.6	-50.1, 37.0	0.77
Albumin (g/dL)	20.5	-108, 148.7	0.75	33.9	-93.3, 161.2	0.60
Total bilirubin (mg/dL)	-8.4	-30.6, 13.8	0.46	-4.2	-25.9, 17.6	0.71
FVC Slope						
D-dimer (mcg/ml)	12.0	-7.9, 32.0	0.24	9.6	-10.1, 29.2	0.34
hsCRP (mcg/ml)	0.7	-9.9, 11.3	0.90	0.4	-10.1, 11.0	0.94
IL-6 (pg/ml)	-6.4	-27.2, 14.4	0.55	-3.6	-24.0, 16.8	0.73
IL-27 (pg/ml)	-0.1	-10.7, 10.4	0.98	-2.1	-12.4, 8.3	0.70
Serum amyloid A (mg/L)	-3.7	-16.0, 8.6	0.55	-3.6	-15.7, 8.6	0.57
sICAM-1 (mcg/mL)	35.2	4.6, 65.7	0.02	28.7	-1.2, 58.7	0.06
sVCAM-1 (mcg/mL)	6.7	-23.9, 37.3	0.67	4.2	-25.8, 34.2	0.79
IL-6/D-dimer score ²	-0.1	-50.4, 50.3	1.00	2.7	-46.8, 52.2	0.91
Albumin (g/dL)	38.5	-107, 184.3	0.60	56.3	-88.0, 200.6	0.44
Total bilirubin (mg/dL)	-10.6	-35.9, 14.7	0.41	-6.0	-30.7, 18.8	0.64
FEV₁/FVC Slope						
D-dimer (mcg/ml)	-1.4	-3.8, 0.9	0.22	-1.6	-3.9, 0.7	0.17
hsCRP (mcg/ml)	0.4	-0.8, 1.6	0.49	0.5	-0.7, 1.7	0.42

IL-6 (pg/ml)	-0.5	-2.8, 1.9	0.68	-0.8	-3.1, 1.6	0.51
IL-27 (pg/ml)	0.4	-0.8, 1.6	0.53	0.4	-0.8, 1.6	0.54
Serum amyloid A (mg/L)	0.6	-0.9, 2.0	0.44	0.5	-1.0, 1.9	0.51
sICAM-1 (mcg/mL)	-0.2	-3.6, 3.3	0.93	0.0	-3.5, 3.5	1.00
sVCAM-1 (mcg/mL)	-0.2	-3.6, 3.3	0.91	-0.2	-3.7, 3.3	0.91
IL-6/D-dimer score ²	-2.2	-7.9, 3.5	0.44	-2.9	-8.6, 2.8	0.32
Albumin (g/dL)	1.0	-15.9, 17.9	0.91	0.0	-17.0, 17.0	1.00
Total bilirubin (mg/dL)	0.2	-2.7, 3.1	0.87	0.4	-2.5, 3.3	0.79

¹ adjusted for age, sex, race, region, smoking status, CD4+ T-cell count, and HIV-RNA.

² [0.33 x log₂ IL-6 + 0.16 x log₂ D-dimer] [17]

³ β represent the difference in lung function slope (FEV₁, FVC, or FEV₁/FVC) associated with a doubling of the corresponding biomarker