Results: A total of 446 patients were switched to a TAF containing regimen during the study period, and included as cases. Controls (n=162) consisted of patients who continued a regimen containing abacavir/lamivudine/dolutegravir during the study period. The control group was older (54 vs. 49 years, p< 0.0001), had a higher proportion of black patients (17.9% vs 11.4%, p=0.04), had a higher mean VACS score (27 vs 18, p< 0.0001), and had fewer patients with reported physical activity (21.6% vs 30%, p=0.04), although this was driven by a higher proportion of patients in the controls with unknown physical activity. Cases showed significantly more weight gain compared to controls at 12 months (2.01kg vs 0.77kg, p=0.001). There was a higher percentage of increase in BMI class in the cases compared to control at 12 months (18.2% vs 9.9%, p=0.01). Increase in weight at 12 months varied dependent on the rest of the antiretroviral regimen (Table 1). Cases had a significant increase in the number of patients with hypertension (35.9% pre vs 43.7% post, p=0.02) and hyperlipidemia after the switch (7.8% pre and 18.4% post, p< 0.00001), while controls only had a significant increase in hyperlipidemia (50.0% pre vs 67.9% post, p=0.01).

Table 1: Change in weight (kg) during the study period

	Cases	Controls (n=162)	p-value
Total of all classes (n=446)			
6 months	1.54 (1.17-1.92)	0.19 (-0.47-0.86)	<0.0001
12 months	2.01 (1.56-2.47)	0.77 (-0.04-1.57)	0.001
Non-INSTI to INSTI (n=96)			
6 months	1.93 (1.05-2.82)	0.19 (-0.47-0.86)	0.0006
12 months	2.35 (1.45-3.24)	0.77 (-0.04-1.57)	0.002
INSTI to INSTI (n=235)			
6 months	1.35 (0.79-1.90)	0.19 (-0.47-0.86)	0.003
12 months	1.50 (0.81-2.19)	0.77 (-0.04-1.57)	0.06
INSTI to non INSTI (n=6)			
6 months	-0.08 (-1.52-0.45)	0.19 (-0.47-0.86)	0.73
12 months	1.13 (-0.92- 3.18)	0.77 (-0.04-1.57)	0.85
Non-INSTI to Non-INSTI (n=109)			
6 months	1.71 (1.16-2.27)	0.19 (-0.47-0.86)	0.0001
12 months	2.88 (2.10- 3.65)	0.77 (-0.04-1.57)	0.0002

INSTI: integrase strand transfer inhibitor

Conclusion: Patients switched to an ARV regimen containing TAF gained significantly more weight, and had higher rates of increase in BMI category than those who stayed on a non TAF containing regimen throughout the study period.

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108. Selective Decay of Intact HIV-1 Proviral DNA on Antiretroviral Therapy

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Session: O-21. HIV Treatment and Complications

Background: HIV-1 proviruses persist in people on antiretroviral therapy (ART) but most are defective and do not constitute a replication-competent reservoir. The decay of infected cells carrying intact compared with defective HIV-1 proviruses has not been well-defined in people on ART.

Methods: We separately quantified intact and defective proviruses (using an intact proviral DNA assay), residual plasma viremia, and markers of inflammation and activation in people on long-term ART. Longitudinal measurements were done at three timepoints: timepoint 1 was a median of 7.1 years on ART; timepoint 2 was a median of 3.7 years later; timepoint 3 was a median of 5.5 years after timepoint 1 and a median 12 years after starting ART (Figure 1).

Figure 1: Study timepoints
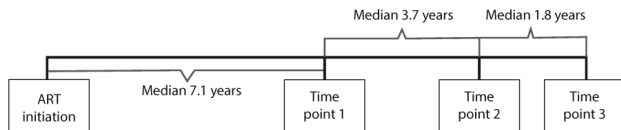
Results: Among 40 participants tested longitudinally from a median of 7.1 years to 12 years after ART initiation, intact provirus levels declined significantly over time (median half-life 7.1 years; 95% confidence interval [CI], 3.9, 18), whereas defective provirus levels did not decrease. The median half-life of total HIV-1 DNA was 41.6 years (95% CI, 13.6, 75). When we evaluated the change in proviral DNA per year, intact proviral DNA declined significantly more (p< 0.001) than defective proviral DNA (the latter did not change) (Figure 2). The proportion of all proviruses that were intact diminished over time on ART, from about 10% at the first on-ART timepoint to about 5% at the last timepoint (Figure 3). At timepoint 1, intact provirus levels on ART correlated with total HIV-1 DNA and residual plasma viremia, but there was no evidence for associations between intact provirus levels and inflammation or immune activation.

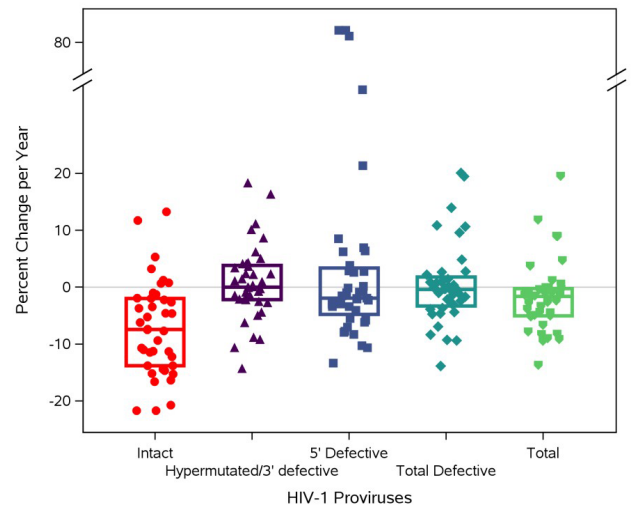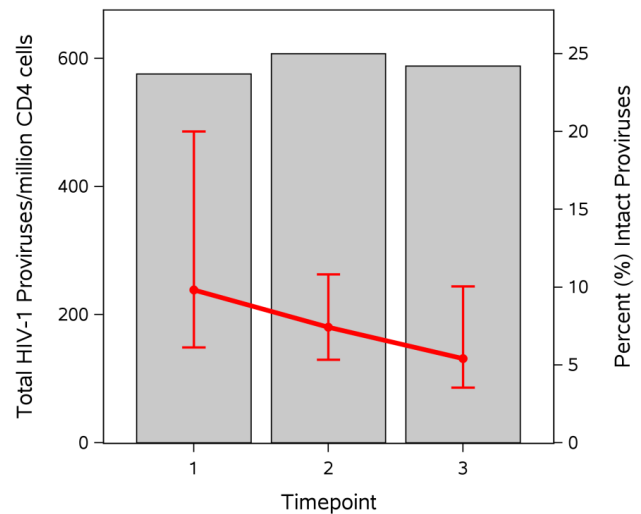Figure 2: Percent change in HIV-1 proviral DNA per year

Figure 3: Total HIV-1 proviruses (grey bars) and the percentage of intact proviruses (red lines, displaying median, Q1, Q3) by timepoint.

Conclusion: Cells containing intact, replication-competent proviruses are selectively lost during suppressive ART. Defining the mechanisms involved should inform strategies to accelerate HIV-1 reservoir depletion.

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109. Preexisting Resistance and Week 48 Virologic Outcomes After Switching to B/F/TAF in African American Adults with HIV

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Session: O-21. HIV Treatment and Complications

Background: The BRAAVE 2020 study is evaluating the safety and efficacy of switching to bictegravir/emtricitabine/tenofovir alafenamide (B/F/TAF) among virologically suppressed Black adults with HIV. At Week (W) 24, 0.6% (2/328) on B/F/TAF vs 1.8% (3/165) who stayed on their baseline 3 drug regimen (SBR) had HIV-1 RNA ≥ 50 c/mL demonstrating noninferiority of B/F/TAF. Here, resistance analyses and virologic outcomes at W48 are described.