

Heidi M Crane¹, Stephanie A Ruderman¹, Lara Haidar², Lydia N Drumright¹, Geetanjali Chander¹, Karen L Cropsey³, Sherif Eltonsy², Y. Joseph Hwang⁴, Kenneth H Mayer⁵, Sonia Napravnik⁶, Conall O'Cleirigh⁷, Kristina Crothers¹, Mari M Kitahata¹, Joseph AC Delaney¹

1 University of Washington; 2 University of Manitoba; 3 University of Alabama at Birmingham; 4 Johns Hopkins University; 5 Fenway Health; 6 University of North Carolina, Chapel Hill; 7 Massachusetts General Hospital and Harvard Medical School

BACKGROUND

- Semaglutide is a glucagon-like peptide-1 (GLP-1) receptor agonist that is indicated for treatment of diabetes and obesity, including for people with HIV (PWH)
- Semaglutide may have anti-addictive properties, which could apply to reduction of cigarette smoking
- The prevalence and impact of cigarette smoking is greater among PWH than the general population

We evaluated the impact of initiating semaglutide on cigarette smoking intensity among PWH

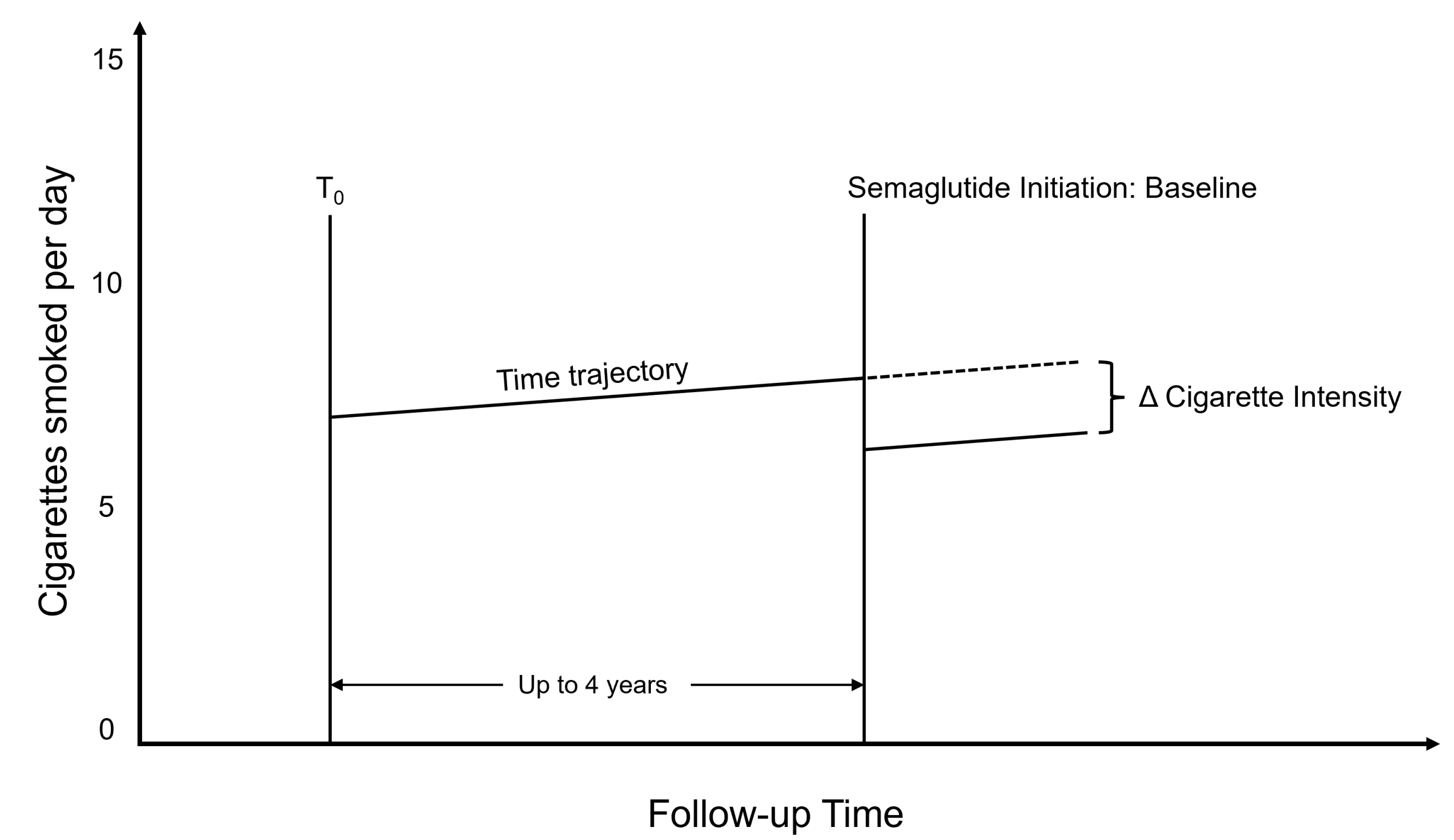
METHODS

- *Setting:* Centers for AIDS Research Network of Integrated Clinical Systems (CNICS) Cohort
 - CNICS is a 10-site cohort of adult PWH engaged in care at academic clinics across the United States
- *Observation Period:* 04/2018-03/2025
- *Participants:* PWH who self-reported ongoing cigarette use at the time of semaglutide initiation for weight or diabetes management

Outcome: Change in smoking intensity (cigarettes per day) from pre-initiation to post-initiation of semaglutide

- *Analysis:* Within-person quasi-experimental linear mixed model adjusted for age, sex, race/ethnicity, and time
 - Stratified by BMI (<30 vs. ≥30), sex (male vs. female), semaglutide dose (low vs. high), and varenicline use

Figure 1. Observation time for linear mixed model. Historical data were captured for up to 4 years prior to semaglutide initiation. PWH were followed until semaglutide discontinuation or 03/2025.



New use of semaglutide for weight or diabetes management resulted in a mean decrease of 2.7 cigarettes smoked per day

From a baseline of 10.5 cigarettes per day, this was a 26% decrease

RESULTS

Table 1. Change in smoking intensity in adjusted models among people with HIV at 8 sites across the United States who smoked at baseline and initiated semaglutide

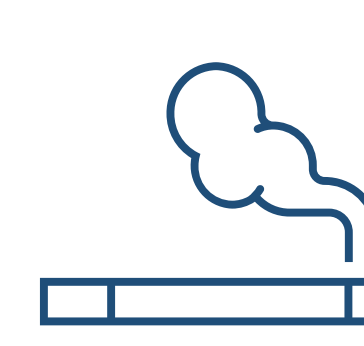
Model Description	N	Δ cigarettes (95% CI)	p-value
Change in cigarettes/day while on semaglutide among everyone smoking when starting semaglutide	204	-2.7 (-3.8, -1.6)	<0.001
Adjusted for baseline pack-years	169	-2.7 (-4.0, -1.5)	<0.001
PWH who received low dose semaglutide (≤1mg injectable/≤7mg oral)	146	-2.9 (-4.3, -1.6)	<0.001
PWH who received high dose semaglutide (>1mg injectable/>7mg oral)	22	-1.5 (-4.4, 1.3)	0.3
PWH who received an unknown dose of semaglutide	36	-2.3 (-5.0, 0.5)	0.1
PWH who had a BMI ≥30	155	-2.7 (-4.0, -1.4)	<0.001
PWH who had a BMI <30	45	-2.6 (-5.0, -0.3)	0.03
Females	49	-2.7 (-4.4, -0.9)	<0.01
Males	155	-2.7 (-4.0, -1.4)	<0.001
PWH who were on varenicline	24	-5.6 (-9.1, -2.1)	<0.01
PWH who were not on varenicline	180	-2.2 (-3.3, -1.0)	<0.001

RESULTS

204 PWH reported smoking at semaglutide initiation



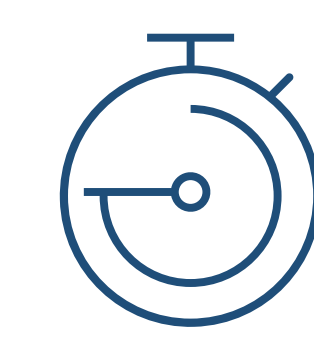
76% male
24% female



Mean smoking:
10.5 cigs/day
9.3 pack-years



Mean age:
51 years (±10)



Mean time on SG:
375 days (± 327)



78% had BMI ≥30
55% had diabetes
69% hypertension

LIMITATIONS

- Recent introduction of semaglutide limited follow-up time and number of smoking assessments
- We could not formally test for interaction between potential effect measure modifiers due to sample size

CONCLUSIONS

- PWH reduced their smoking intensity by 2.7 cigarettes per day, or 26%, after initiating semaglutide for management of weight or diabetes
- Findings should be verified over a longer period of time
- We confirmed that smoking intensity was stable in this cohort during the control period prior to initiation
- Semaglutide may result in additional benefit to overall health in PWH

ADDITIONAL INFORMATION

The authors would like to acknowledge all CNICS participants and personnel for their contributions to this work. This work was supported by NIH funding (R01HL126538, K24DA062568, R33AI067039, R33AG067069, and R01DA044112)

Contact: Heidi Crane, hcrane@uw.edu

Plain language summary: In a cohort of PWH engaged in clinical care who initiated semaglutide (a GLP-1 receptor agonist) and smoked cigarettes, we observed a substantial reduction in cigarettes smoked per day. Everyone in this study was taking semaglutide and smoking at baseline.