Supplementary Material

TABLES

Table S1. Logistic regression: 30 day cigarette cessation at Wave 2 as a function of e-cigarette use versus non-use, PATH (2013-2015) (n=5,124)

	30-day cigarette cessation at Wave 2		
	Adjusted OR	95% CI	p-value
Sex			
Male	Ref	-	-
Female	1.11	(0.90, 1.38)	0.311
Age			
25 to 34 years	Ref	-	-
35 to 44 years	0.95	(0.68, 1.34)	0.783
45 to 54 years	0.92	(0.60, 1.40)	0.684
55 to 64 years	1.03	(0.67, 1.57)	0.898
65 to 74 years	1.24	(0.70, 2.20)	0.464
≥ 75 years	1.74	(0.63, 4.83)	0.285
Race/Ethnicity			
Non-Hispanic White	Ref	-	-
Non-Hispanic Black	0.60	(0.40, 0.89)	0.013
Hispanic	0.82	(0.57, 1.19)	0.292
Non-Hispanic Other	1.08	(0.61, 1.90)	0.794
Region			
Northeast	Ref	-	-
Midwest	1.04	(0.68, 1.58)	0.866
South	1.35	(0.94, 1.95)	0.105
West	1.07	(0.71, 1.60)	0.759
Household Income			
Below poverty level	Ref	-	-
At or near poverty level	1.16	(0.82, 1.63)	0.392
≥ twice poverty level	1.36	(0.96, 1.93)	0.084
Education			
Less than high school	Ref	-	-
High school or equivalent	0.93	(0.60, 1.43)	0.730
Some college	0.99	(0.66, 1.47)	0.951
Bachelor's/advanced degree	0.90	(0.52, 1.56)	0.711
Lived in a smoking household as a child			
No	Ref	-	-
Yes	0.82	(0.59, 1.15)	0.251
Currently lives with a cigarette smoker			
No	Ref	-	-
Yes	0.97	(0.72, 1.30)	0.828

Frequency of cigarette use at Wave 1			
Some day cigarette smoker	Ref	-	-
Every day cigarette smoker	0.29	(0.20, 0.40)	<0.001
Intensity of cigarette smoking at Wave 1			
<1 pack per day	Ref	-	-
1-2 packs per day	0.87	(0.61, 1.24)	0.436
≥ 2 packs per day	0.78	(0.28, 2.15)	0.632
Time to first cigarette in morning			
≤ 5 minutes	Ref	-	-
5-30 minutes	1.28	(0.87, 1.88)	0.212
30-60 minutes	1.94	(0.80, 4.69)	0.142
> 60 minutes	1.83	(1.20, 2.79)	0.005
Tried to quit smoking cigarettes in year prior to Wave 1			
No	Ref	-	-
Yes	1.24	(0.99, 1.54)	0.059
New e-cigarette use at Wave 2			
Non-user	Ref	-	-
E-cigarette user	1.46	(0.95, 2.23)	0.081

Table S2. Logistic regression: 90 day cigarette cessation at Wave 2, PATH (2013-2015) (n=5,124)

	90-day cigarette cessation at Wave 2		
	Adjusted OR	95% CI	p-value
Sex			
Male	Ref	-	-
Female	1.15	(0.92, 1.44)	0.225
Age			
25 to 34 years	Ref	-	-
35 to 44 years	0.97	(0.67, 1.40)	0.867
45 to 54 years	0.93	(0.60, 1.45)	0.757
55 to 64 years	1.08	(0.69, 1.69)	0.734
65 to 74 years	1.34	(0.70, 2.56)	0.373
$\geq$ 75 years	1.16	(0.36, 3.77)	0.803
Race/Ethnicity			
Non-Hispanic White	Ref	-	-
Non-Hispanic Black	0.59	(0.38, 0.92)	0.020
Hispanic	0.84	(0.57, 1.25)	0.385
Non-Hispanic Other	1.05	(0.53, 2.08)	0.883
Region			
Northeast	Ref	-	-
Midwest	0.93	(0.56, 1.55)	0.769
South	1.25	(0.83, 1.88)	0.282
West	0.98	(0.61, 1.57)	0.921
Household Income			
Below poverty level	Ref	-	-
At or near poverty level	1.06	(0.73, 1.52)	0.770
$\geq$ twice poverty level	1.16	(0.79, 1.68)	0.445
Education			
Less than high school	Ref	-	-
High school or equivalent	0.87	(0.56, 1.33)	0.508
Some college	0.96	(0.64, 1.42)	0.827
Bachelor's/advanced degree	0.82	(0.46, 1.48)	0.508
Lived in a smoking household as a child			
No	Ref	-	-
Yes	0.90	(0.63, 1.28)	0.542
Currently lives with a cigarette smoker			
No	Ref	-	-
Yes	0.95	(0.70, 1.27)	0.714

Frequency of cigarette use at Wave 1			
Some day cigarette smoker	Ref	-	-
Every day cigarette smoker	0.25	(0.18, 0.37)	<0.001
Intensity of cigarette smoking at Wave 1			
<1 pack per day	Ref	-	-
1-2 packs per day	0.84	(0.57, 1.24)	0.377
$\geq$ 2 packs per day	0.75	(0.24, 2.36)	0.621
Time to first cigarette in morning			
$\leq$ 5 minutes	Ref	-	-
5-30 minutes	1.24	(0.80, 1.92)	0.335
30-60 minutes	1.63	(0.54, 4.96)	0.384
> 60 minutes	1.87	(1.15, 3.02)	0.012
Tried to quit smoking cigarettes in year prior to Wave 1			
No	Ref	-	-
Yes	1.25	(0.99, 1.59)	0.060
New e-cigarette use at Wave 2			
Non-user	Ref	-	-
Experimenter	0.45	(0.21, 0.98)	0.045
Some day user	0.41	(0.12, 1.41)	0.155
Every day user	6.87	(3.86, 12.23)	<0.001

Table S3. Logistic regression: 30-day cigarette cessation among smokers reporting a quit attempt in year prior to Wave 1, PATH (2013-2015) (n=2,337)

	30-day cigarette cessation at Wave 2		
	Adjusted OR	95% CI	p-value
Sex			
Male	Ref	-	-
Female	1.24	(0.88, 1.74)	0.212
Age			
25 to 34 years	Ref	-	-
35 to 44 years	0.97	(0.62, 1.52)	0.894
45 to 54 years	1.00	(0.59, 1.68)	0.996
55 to 64 years	1.17	(0.65, 2.12)	0.600
65 to 74 years	1.14	(0.52, 2.50)	0.740
$\geq$ 75 years	0.39	(0.03, 5.40)	0.481
Race/Ethnicity			
Non-Hispanic White	Ref	-	-
Non-Hispanic Black	0.57	(0.32, 1.02)	0.058
Hispanic	0.81	(0.47, 1.40)	0.446
Non-Hispanic Other	0.94	(0.38, 2.31)	0.885
Region			
Northeast	Ref	-	-
Midwest	0.77	(0.40, 1.48)	0.437
South	1.33	(0.82, 2.16)	0.246
West	0.89	(0.51, 1.55)	0.676
Household Income			
Below poverty level	Ref	-	-
At or near poverty level	0.82	(0.49, 1.36)	0.430
$\geq$ twice poverty level	0.91	(0.56, 1.47)	0.704
Education			
Less than high school	Ref	-	-
High school or equivalent	0.86	(0.49, 1.51)	0.594
Some college	1.14	(0.66, 1.97)	0.634
Bachelor's/advanced degree	0.77	(0.38, 1.57)	0.475
Lived in a smoking household as a child			
No	Ref	-	-
Yes	1.07	(0.71, 1.64)	0.735
Currently lives with a cigarette smoker			
No	Ref	-	-
Yes	0.93	(0.63, 1.36)	0.694
Frequency of cigarette use at Wave 1			
Some day cigarette smoker	Ref	-	-

Every day cigarette smoker	0.34	(0.22, 0.52)	<0.001
Intensity of cigarette smoking at Wave 1			
<1 pack per day	Ref	-	-
1-2 packs per day	0.68	(0.38, 1.24)	0.207
≥ 2 packs per day	0.59	(0.08, 4.43)	0.603
Time to first cigarette in morning			
≤ 5 minutes	Ref	-	-
5-30 minutes	1.16	(0.62, 2.17)	0.634
30-60 minutes	1.73	(0.40, 7.45)	0.461
> 60 minutes	1.97	(1.09, 3.57)	0.025
New e-cigarette use at Wave 2			
Non-user	Ref	-	-
Experimenter	0.73	(0.33, 1.63)	0.442
Some day user	0.64	(0.17, 2.37)	0.504
Every day user	3.46	(1.43, 8.37)	0.006

Table S4. Logistic regression: 30 day cigarette cessation at Wave 2 by current and recent e-cigarette use, PATH (2013-2015) (n=5,124)

	30-day cigarette cessation at Wave 2		
	Adjusted OR	95% CI	p-value
Sex			
Male	Ref	-	-
Female	1.14	(0.91, 1.41)	0.246
Age			
25 to 34 years	Ref	-	-
35 to 44 years	0.92	(0.64, 1.30)	0.622
45 to 54 years	0.93	(0.61, 1.41)	0.726
55 to 64 years	1.06	(0.69, 1.63)	0.785
65 to 74 years	1.28	(0.70, 2.34)	0.419
$\geq$ 75 years	1.61	(0.59, 4.43)	0.351
Race/Ethnicity			
Non-Hispanic White	Ref	-	-
Non-Hispanic Black	0.60	(0.40, 0.90)	0.014
Hispanic	0.82	(0.56, 1.20)	0.298
Non-Hispanic Other	1.06	(0.59, 1.91)	0.833
Region			
Northeast	Ref	-	-
Midwest	1.04	(0.68, 1.60)	0.860
South	1.36	(0.95, 1.96)	0.094
West	1.06	(0.71. 1.60)	0.764
Household Income			
Below poverty level	Ref	-	-
At or near poverty level	1.12	(0.79, 1.58)	0.516
$\geq$ twice poverty level	1.31	(0.92, 1.87)	0.130
Education			
Less than high school	Ref	-	-
High school or equivalent	0.90	(0.59, 1.39)	0.635
Some college	1.00	(0.67, 1.50)	0.985
Bachelor's/advanced degree	0.92	(0.53, 1.58)	0.753
Lived in a smoking household as a child			
No	Ref	-	-
Yes	0.81	(0.57, 1.14)	0.227
Currently lives with a cigarette smoker			
No	Ref	-	-
Yes	0.98	(0.73, 1.32)	0.915

Frequency of cigarette use at Wave 1			
Some day cigarette smoker	Ref	-	-
Every day cigarette smoker	0.27	(0.19, 0.38)	<0.001
Intensity of cigarette smoking at Wave 1			
<1 pack per day	Ref	-	-
1-2 packs per day	0.88	(0.62, 1.26)	0.489
≥ 2 packs per day	0.85	(0.30, 2.38)	0.758
Time to first cigarette in morning			
≤ 5 minutes	Ref	-	-
5-30 minutes	1.28	(0.86, 1.91)	0.226
30-60 minutes	1.88	(0.69, 5.12)	0.217
> 60 minutes	1.88	(1.21, 2.92)	0.005
Tried to quit smoking cigarettes in year prior to Wave 1			
No	Ref	-	-
Yes	1.26	(1.01, 1.57)	0.042
New e-cigarette use between Waves or at Wave 2			
No e-cigarette use at W2 or in last year	Ref	-	-
E-cigarette use in last year but not at W2	0.87	(0.61, 1.22)	0.414
Experimental e-cigarette use at W2	0.49	(0.24, 0.97)	0.041
Some day e-cigarette use at W2	0.48	(0.17, 1.40)	0.178
Every day e-cigarette use at W2	7.52	(4.18, 13.54)	<0.001

Table S5. Logistic regression: 30-day cigarette cessation at Wave 2 by e-cigarette cartridge use and frequency of use, PATH (2013-2015) (n=5,020)

	30-day cigarette cessation at Wave 2		
	Adjusted OR	95% CI	p-value
Sex			
Male	Ref	-	-
Female	1.16	(0.93, 1.45)	0.178
Age			
25 to 34 years	Ref	-	-
35 to 44 years	0.92	(0.65, 1.31)	0.651
45 to 54 years	0.94	(0.61, 1.43)	0.765
55 to 64 years	1.12	(0.72, 1.74)	0.599
65 to 74 years	1.32	(0.73, 2.38)	0.356
$\geq$ 75 years	1.63	(0.62, 4.33)	0.319
Race/Ethnicity			
Non-Hispanic White	Ref	-	-
Non-Hispanic Black	0.62	(0.41, 0.94)	0.026
Hispanic	0.88	(0.60, 1.29)	0.500
Non-Hispanic Other	1.11	(0.62, 1.99)	0.720
Region			
Northeast	Ref	-	-
Midwest	1.04	(0.68, 1.59)	0.860
South	1.31	(0.91, 1.88)	0.146
West	1.02	(0.68, 1.53)	0.910
Household Income			
Below poverty level	Ref	-	-
At or near poverty level	1.09	(0.77, 1.54)	0.630
$\geq$ twice poverty level	1.28	(0.90, 1.81)	0.164
Education			
Less than high school	Ref	-	-
High school or equivalent	0.90	(0.58, 1.40)	0.642
Some college	0.99	(0.66, 1.49)	0.961
Bachelor's/advanced degree	0.93	(0.54, 1.63)	0.809
Lived in a smoking household as a child			
No	Ref	-	-
Yes	0.83	(0.59, 1.19)	0.310
Currently lives with a cigarette smoker			
No	Ref	-	-
Yes	0.94	(0.69, 1.28)	0.690
Frequency of cigarette use at Wave 1			

Some day cigarette smoker	Ref	-	-
Every day cigarette smoker	0.27	(0.19, 0.38)	<0.001
Intensity of cigarette smoking at Wave 1			
<1 pack per day	Ref	-	-
1-2 packs per day	0.91	(0.63, 1.31)	0.605
≥ 2 packs per day	0.94	(0.33, 2.67)	0.914
Time to first cigarette in morning			
≤ 5 minutes	Ref	-	-
5-30 minutes	1.27	(0.85, 1.89)	0.242
30-60 minutes	1.82	(0.66, 5.04)	0.246
> 60 minutes	1.86	(1.20, 2.88)	0.006
Tried to quit smoking cigarettes in year prior to Wave 1			
No	Ref	-	-
Yes	1.25	(1.00, 1.57)	0.052
Type and frequency of e-cigarette use at Wave 2			
No e-cigarette use	Ref	-	-
Experimental/some day use of non-cartridge e-cig	0.78	(0.36, 1.72)	0.538
Experimental/some day use of cartridge e-cig	0.30	(0.10, 0.88)	0.029
Every day use of non-cartridge e-cig	10.14	(5.37, 19.12)	<0.001
Every day use of cartridge e-cig	2.36	(0.43, 12.98)	0.318

Table S6. Logistic regression: 30-day cigarette cessation at Wave 2 by refillable e-cigarette use and frequency of use, PATH (2013-2015) (n=5,122)

	30-day cigarette cessation at Wave 2		
	Adjusted OR	95% CI	p-value
Sex			
Male	Ref	-	-
Female	1.15	(0.92, 1.43)	0.223
Age			
25 to 34 years	Ref	-	-
35 to 44 years	0.92	(0.65, 1.31)	0.647
45 to 54 years	0.96	(0.63, 1.46)	0.855
55 to 64 years	1.11	(0.72, 1.72)	0.627
65 to 74 years	1.33	(0.74, 2.39)	0.345
≥ 75 years	1.66	(0.63, 4.40)	0.304
Race/Ethnicity			
Non-Hispanic White	Ref	-	-
Non-Hispanic Black	0.62	(0.42, 0.93)	0.021
Hispanic	0.84	(0.58, 1.23)	0.373
Non-Hispanic Other	1.07	(0.60, 1.93)	0.812
Region			
Northeast	Ref	-	-
Midwest	1.02	(0.67, 1.57)	0.914
South	1.33	(0.92, 1.92)	0.124
West	1.04	(0.69, 1.56)	0.856
Household Income			
Below poverty level	Ref	-	-
At or near poverty level	1.12	(0.79, 1.58)	0.519
$\geq$ twice poverty level	1.30	(0.91, 1.84)	0.145
Education			
Less than high school	Ref	-	-
High school or equivalent	0.90	(0.58, 1.39)	0.626
Some college	0.99	(0.66, 1.50)	0.974
Bachelor's/advanced degree	0.91	(0.53, 1.57)	0.738
Lived in a smoking household as a child			
No	Ref	-	-
Yes	0.81	(0.58, 1.15)	0.236
Currently lives with a cigarette smoker			
No	Ref	-	-
Yes	0.96	(0.71, 1.31)	0.813
Frequency of cigarette use at Wave 1			

Some day cigarette smoker	Ref	-	-
Every day cigarette smoker	0.27	(0.19, 0.38)	<0.001
Intensity of cigarette smoking at Wave 1			
<1 pack per day	Ref	-	-
1-2 packs per day	0.88	(0.61, 1.26)	0.482
≥ 2 packs per day	0.85	(0.31, 2.36)	0.754
Time to first cigarette in morning			
≤ 5 minutes	Ref	-	-
5-30 minutes	1.26	(0.85, 1.87)	0.247
30-60 minutes	1.81	(0.66, 4.97)	0.244
> 60 minutes	1.85	(1.20, 2.87)	0.006
Tried to quit smoking cigarettes in year prior to Wave 1			
No	Ref	-	-
Yes	1.26	(1.00, 1.58)	0.045
Type and frequency of e-cigarette use at Wave 2			
No e-cigarette use	Ref	-	-
Experimental/some day use of non-refillable e-cig	0.25	(0.07, 0.92)	0.037
Experimental/some day use of refillable e-cig	0.72	(0.35, 1.45)	0.351
Every day use of non-refillable e-cig	3.31	(0.61, 17.85)	0.162
Every day use of refillable e-cig	9.13	(4.90, 17.02)	<0.001

Table S7. Logistic regression: 30-day cigarette cessation at Wave 2 by e-cigarette tank use and frequency of use, PATH (2013-2015) (n=5,118)

	30-day cigarette cessation at Wave 2		
	Adjusted OR	95% CI	p-value
Sex			
Male	Ref	-	-
Female	1.15	(0.93, 1.43)	0.201
Age			
25 to 34 years	Ref	-	-
35 to 44 years	0.92	(0.65, 1.32)	0.660
45 to 54 years	0.96	(0.63, 1.46)	0.849
55 to 64 years	1.12	(0.72, 1.73)	0.609
65 to 74 years	1.28	(0.71, 2.33)	0.407
≥ 75 years	1.65	(0.63, 4.36)	0.306
Race/Ethnicity			
Non-Hispanic White	Ref	-	-
Non-Hispanic Black	0.63	(0.42, 0.94)	0.025
Hispanic	0.86	(0.59, 1.25)	0.422
Non-Hispanic Other	1.09	(0.61, 1.96)	0.775
Region			
Northeast	Ref	-	-
Midwest	1.04	(0.68, 1.59)	0.858
South	1.34	(0.93, 1.93)	0.116
West	1.05	(0.69, 1.57)	0.829
Household Income			
Below poverty level	Ref	-	-
At or near poverty level	1.11	(0.78, 1.57)	0.560
≥ twice poverty level	1.30	(0.92, 1.85)	0.135
Education			
Less than high school	Ref	-	-
High school or equivalent	0.91	(0.59, 1.41)	0.665
Some college	0.99	(0.66, 1.50)	0.974
Bachelor's/advanced degree	0.92	(0.53, 1.60)	0.768
Lived in a smoking household as a child			
No	Ref	-	-
Yes	0.81	(0.57, 1.14)	0.224
Currently lives with a cigarette smoker			
No	Ref	-	-
Yes	0.96	(0.71, 1.30)	0.789
Frequency of cigarette use at Wave 1			

Some day cigarette smoker	Ref	-	-
Every day cigarette smoker	0.27	(0.19, 0.37)	<0.001
Intensity of cigarette smoking at Wave 1			
<1 pack per day	Ref	-	-
1-2 packs per day	0.88	(0.61, 1.27)	0.501
≥ 2 packs per day	0.90	(0.32, 2.53)	0.840
Time to first cigarette in morning			
≤ 5 minutes	Ref	-	-
5-30 minutes	1.24	(0.84, 1.85)	0.277
30-60 minutes	1.79	(0.66, 4.91)	0.252
> 60 minutes	1.82	(1.18, 2.81)	0.007
Tried to quit smoking cigarettes in year prior to Wave 1			
No	Ref	-	-
Yes	1.26	(1.00, 1.58)	0.047
Type and frequency of e-cigarette use at Wave 2			
No e-cigarette use	Ref	-	-
Experimental/some day use of non-tank e-cig	0.34	(0.14, 0.83)	0.019
Experimental/some day use of tank e-cig	0.77	(0.33, 1.79)	0.544
Every day use of non-tank e-cig	3.56	(1.04, 12.20)	0.043
Every day use of tank e-cig	10.24	(5.42, 19.37)	<0.001

Table S8. Linear regression: E-cigarette initiation and change in smoking intensity between Wave 1 and Wave 2, PATH (2013-2015) (n=4,673)

	Difference in average cig/day		
	Coef.	95% CI	p-value
Sex			
Male	Ref	-	-
Female	0.19	(-0.28, 0.67)	0.423
Age			
25 to 34 years	Ref	-	-
35 to 44 years	0.18	(-0.44, 0.79)	0.567
45 to 54 years	0.28	(-0.25, 0.80)	0.299
55 to 64 years	0.11	(-0.57, 0.79)	0.747
65 to 74 years	1.21	(0.16, 2.26)	0.024
≥ 75 years	-0.12	(-1.31, 1.07)	0.842
Race/Ethnicity			
Non-Hispanic White	Ref	-	-
Non-Hispanic Black	-1.94	(-2.72, -1.17)	<0.001
Hispanic	-0.80	(-1.55, -0.05)	0.037
Non-Hispanic Other	-0.16	(-1.20, 0.89)	0.769
Region			
Northeast	Ref	-	-
Midwest	-0.13	(-0.74, 0.47)	0.665
South	-0.11	(-0.82, 0.60)	0.766
West	-0.60	(-1.25, 0.05)	0.070
Household Income			
Below poverty level	Ref	-	-
At or near poverty level	0.11	(-0.50, 0.71)	0.724
≥ twice poverty level	-0.02	(-0.65, 0.61)	0.949
Education			
Less than high school	Ref	-	-
High school or equivalent	-0.05	(-0.67, 0.57)	0.871
Some college	-0.21	(-0.89, 0.48)	0.556
Bachelor's/advanced degree	-0.27	(-1.07, 0.52)	0.497
Lived in a smoking household as a child			
No	Ref	-	-
Yes	0.41	(-0.07, 0.89)	0.093
Currently lives with a cigarette smoker			
No	Ref	-	-
Yes	-0.21	(-0.66, 0.24)	0.360
Frequency of cigarette use at Wave 1			
Some day cigarette smoker	Ref	-	-

Every day cigarette smoker	-1.69	(-2.31, -1.08)	<0.001
Intensity of cigarette smoking at Wave 1			
<1 pack per day	Ref	-	-
1-2 packs per day	-3.48	(-4.03, -2.92)	<0.001
≥ 2 packs per day	-11.56	(-14.03, -9.09)	<0.001
Time to first cigarette in morning			
≤ 5 minutes	Ref	-	-
5-30 minutes	-0.61	(-1.29, 0.07)	0.077
30-60 minutes	-0.49	(-2.04, 1.07)	0.538
> 60 minutes	-1.25	(-2.04, -0.46)	0.002
Tried to quit smoking cigarettes in year prior to Wave 1			
No	Ref	-	-
Yes	-0.54	(-0.96, -0.11)	0.015
New e-cigarette use at Wave 2			
Non-user	Ref	-	-
Experimenter	0.07	(-0.97, 1.11)	0.892
Some day user	0.19	(-0.87, 1.25)	0.721
Every day user	-5.60	(-7.68, -3.52)	<0.001