

Supplementary Online Content

Kim SH, Jeong SH, Park EC, Jang SI. Association of cigarette type initially smoked with suicidal behaviors among adolescents in Korea from 2015 to 2018. *JAMA Netw Open*. 2021;4(4):e218803. doi:10.1001/jamanetworkopen.2021.8803

eTable 1. Demographic Characteristics for Secondary Analyses of the Sample, 2015 to 2018

eTable 2. Association Between Initial Cigarette Type and Suicidal Behaviors Stratified by Current Smoking Status

eTable 3. Sensitivity Analyses of the Association Between Cigarette Type Initially Smoked and Suicidal Behaviors

eTable 4. Sensitivity Analyses of the Association Between Switching Cigarette Type and Suicidal Behaviors

eTable 5. Sensitivity Analyses of the Association of the Timing of Switching Cigarette Type With Suicidal Behaviors

This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Demographic Characteristics for Secondary Analyses of the Sample, 2015 to 2018

Characteristics	Participants													
	Total N	Never smoked		Used Only c-cig.		Used Only e-cig.		Switched from c-cig. to e-cig. (c-cig.→e-cig.) ^a		Initiated smoking using both e-cig. & c-cig. (in same year)		Switched from e-cig. to c-cig. (e-cig.→c-cig.) ^a		P- value
	N	N	%	N	%	N	%	N	%	N	%	N	%	
Male (n=131,094)	131,094	100,416	76.6	13,886	10.59	2,412	1.8	9,464	7.2	4,018	3.1	898	0.7	
School grade														
7	21,230	19,931	93.9	859	4.0	183	0.9	86	0.4	147	0.7	24	0.1	<.001
8	21,913	18,971	86.6	1,576	7.2	282	1.3	440	2.0	538	2.5	106	0.5	
9	22,437	17,808	79.4	2,224	9.9	443	2.0	998	4.4	792	3.5	172	0.8	
10	21,520	15,387	71.5	2,629	12.2	497	2.3	1,901	8.8	906	4.2	200	0.9	
11	22,241	14,758	66.4	3,139	14.1	530	2.4	2,721	12.2	901	4.1	192	0.9	
12	21,753	13,561	62.3	3,459	15.9	477	2.2	3,318	15.3	734	3.4	204	0.9	
Economic status														
Low	3,928	2,327	59.2	618	15.7	115	2.9	581	14.8	226	5.8	61	1.6	<.001
Medium-low	15,491	10,926	70.5	2,098	13.5	298	1.9	1,540	9.9	515	3.3	114	0.7	
Medium	57,982	44,580	76.9	6,339	10.9	1,012	1.7	4,053	7.0	1,678	2.9	320	0.6	
Medium-high	37,800	30,103	79.6	3,437	9.1	658	1.7	2,312	6.1	1,052	2.8	238	0.6	
High	15,893	12,480	78.5	1,394	8.8	329	2.1	978	6.2	547	3.4	165	1.0	
Living situation														
Without extended or immediate family	5,962	4,050	67.9	827	13.9	181	3.0	518	8.7	288	4.8	98	1.6	<.001
With extended family	1,131	674	59.6	168	14.9	54	4.8	132	11.7	56	5.0	47	4.2	
With immediate family	124,001	95,692	77.2	12,891	10.4	2,177	1.8	8,814	7.1	3,674	3.0	753	0.6	
Academic achievement														
Low	14,292	8,688	60.8	2,112	14.8	350	2.4	2,173	15.2	798	5.6	171	1.2	<.001

Medium-low	28,883	20,670	71.6	3,697	12.8	588	2.0	2,698	9.3	1,001	3.5	229	0.8	
Medium	36,011	28,152	78.2	3,703	10.3	642	1.8	2,310	6.4	1,003	2.8	201	0.6	
Medium-high	32,233	26,507	82.2	2,850	8.8	491	1.5	1,479	4.6	754	2.3	152	0.5	
High	19,675	16,399	83.3	1,524	7.7	341	1.7	804	4.1	462	2.3	145	0.7	
Alcohol use														
Ever	57,494	32,742	56.9	10,213	17.8	1,624	2.8	8,794	15.3	3,361	5.8	760	1.3	<.001
Never	73,600	67,674	91.9	3,673	5.0	788	1.1	670	0.9	657	0.9	138	0.2	
Physical activity level														
Low	53,224	41,299	77.6	5,583	10.5	820	1.5	3,828	7.2	1,403	2.6	291	0.5	<.001
High	77,870	59,117	75.9	8,303	10.7	1,592	2.0	5,636	7.2	2,615	3.4	607	0.8	
Self-reported health status														
Low	6,515	4,744	72.8	773	11.9	105	1.6	630	9.7	211	3.2	52	0.8	<.001
Medium	23,570	17,770	75.4	2,667	11.3	423	1.8	1,836	7.8	712	3.0	162	0.7	
High	101,009	77,902	77.1	10,446	10.3	1,884	1.9	6,998	6.9	3,095	3.1	684	0.7	
Perceived stress level														
Low	33,654	27,154	80.7	3,051	9.1	542	1.6	1,836	5.5	862	2.6	209	0.6	<.001
Medium	57,708	44,586	77.3	6,081	10.5	1,047	1.8	3,945	6.8	1,689	2.9	360	0.6	
High	39,732	28,676	72.2	4,754	12.0	823	2.1	3,683	9.3	1,467	3.7	329	0.8	
Suicidal ideation														
Yes	12,271	8,062	65.7	1,735	14.1	308	2.5	1,339	10.9	635	5.2	192	1.6	<.001
No	118,823	92,354	77.7	12,151	10.2	2,104	1.8	8,125	6.8	3,383	2.8	706	0.6	
Suicide planning														
Yes	4,615	2,867	62.1	664	14.4	163	3.5	527	11.4	286	6.2	108	2.3	<.001
No	126,479	97,549	77.1	13,222	10.5	2,249	1.8	8,937	7.1	3,732	3.0	790	0.6	
Suicide attempt														
Yes	2,613	1,489	57.0	375	14.4	103	3.9	383	14.7	188	7.2	75	2.9	<.001

No	128,481	98,927	77.0	13,511	10.5	2,309	1.8	9,081	7.1	3,830	3.0	823	0.6	
Female (n=124,793)	124,793	114,545	91.8	6,313	5.06	685	0.5	2,058	1.6	925	0.7	267	0.2	
School grade														
7	20,075	19,620	97.7	295	1.5	67	0.3	23	0.1	54	0.3	16	0.1	<.001
8	20,515	19,483	95.0	651	3.2	89	0.4	117	0.6	141	0.7	34	0.2	
9	21,462	19,850	92.5	1,018	4.7	124	0.6	253	1.2	179	0.8	38	0.2	
10	20,382	18,428	90.4	1,187	5.8	129	0.6	391	1.9	197	1.0	50	0.2	
11	20,781	18,319	88.2	1,485	7.1	141	0.7	585	2.8	186	0.9	65	0.3	
12	21,578	18,845	87.3	1,677	7.8	135	0.6	689	3.2	168	0.8	64	0.3	
Economic status														
Low	3,233	2,511	77.7	371	11.5	37	1.1	186	5.8	75	2.3	53	1.6	<.001
Medium-low	16,044	14,003	87.3	1,265	7.9	109	0.7	448	2.8	164	1.0	55	0.3	
Medium	61,426	56,879	92.6	2,937	4.8	288	0.5	883	1.4	362	0.6	77	0.1	
Medium-high	34,283	32,120	93.7	1,351	3.9	161	0.5	390	1.1	215	0.6	46	0.1	
High	9,807	9,032	92.1	389	4.0	90	0.9	151	1.5	109	1.1	36	0.4	
Living situation														
Without extended or immediate family	5,074	4,419	87.1	331	6.5	45	0.9	133	2.6	84	1.7	62	1.2	<.001
With extended family	848	622	73.3	83	9.8	34	4.0	64	7.5	19	2.2	26	3.1	
With immediate family	118,871	109,504	92.1	5,899	5.0	606	0.5	1,861	1.6	822	0.7	179	0.2	
Academic achievement														
Low	11,671	9,374	80.3	1,248	10.7	117	1.0	627	5.4	233	2.0	72	0.6	<.001
Medium-low	29,254	26,278	89.8	1,873	6.4	186	0.6	603	2.1	254	0.9	60	0.2	
Medium	36,903	34,524	93.6	1,580	4.3	147	0.4	391	1.1	200	0.5	61	0.2	
Medium-high	32,739	30,981	94.6	1,173	3.6	122	0.4	293	0.9	136	0.4	34	0.1	
High	14,226	13,388	94.1	439	3.1	113	0.8	144	1.0	102	0.7	40	0.3	
Alcohol use														

Ever	43,625	34,778	79.7	5,281	12.1	482	1.1	1,992	4.6	851	2.0	241	0.6	<.001
Never	81,168	79,767	98.3	1,032	1.3	203	0.3	66	0.1	74	0.1	26	0.0	
Physical activity level														
Low	84,362	77,567	91.9	4,335	5.1	405	0.5	1,368	1.6	562	0.7	125	0.1	<.001
High	40,431	36,978	91.5	1,978	4.9	280	0.7	690	1.7	363	0.9	142	0.4	
Self-reported health status														
Low	9,306	8,005	86.0	768	8.3	66	0.7	322	3.5	113	1.2	32	0.3	<.001
Medium	31,493	28,414	90.2	1,910	6.1	182	0.6	661	2.1	256	0.8	70	0.2	
High	83,994	78,126	93.0	3,635	4.3	437	0.5	1,075	1.3	556	0.7	165	0.2	
Perceived stress level														
Low	17,579	16,563	94.2	584	3.3	86	0.5	181	1.0	110	0.6	55	0.3	<.001
Medium	51,071	47,878	93.7	2,061	4.0	221	0.4	540	1.1	286	0.6	85	0.2	
High	56,143	50,104	89.2	3,668	6.5	378	0.7	1,337	2.4	529	0.9	127	0.2	
Suicidal ideation														
Yes	18,996	16,082	84.7	1,702	9.0	178	0.9	634	3.3	299	1.6	101	0.5	<.001
No	105,797	98,463	93.1	4,611	4.4	507	0.5	1,424	1.3	626	0.6	166	0.2	
Suicide planning														
Yes	5,720	4,534	79.3	624	10.9	83	1.5	274	4.8	142	2.5	63	1.1	<.001
No	119,073	110,011	92.4	5,689	4.8	602	0.5	1,784	1.5	783	0.7	204	0.2	
Suicide attempt														
Yes	4,086	3,041	74.4	531	13.0	76	1.9	248	6.1	132	3.2	58	1.4	<.001
No	120,707	111,504	92.4	5,782	4.8	609	0.5	1,810	1.5	793	0.7	209	0.2	

^a Including all participants who smoked the other cigarette type after the first smoking.
Abbreviations: e-cigarettes, electronic cigarettes; c-cigarettes, conventional cigarettes.

eTable 2. Association Between Initial Cigarette Type and Suicidal Behaviors Stratified by Current Smoking Status

Variables		Suicidal ideation				Suicide planning				Suicide attempt						
Current smoking status	Initial cigarette type	AOR	95% CI		P-value	AOR	95% CI		P-value	AOR	95% CI		P-value			
Male																
Dual user	Started with e-cig.	3.87	(2.75	–	5.43)	<.001 ^a	6.23	(4.35	–	8.91)	<.001 ^a	7.08	(4.83	–	10.36)	<.001 ^a
	Started with c-cig.	1.91	(1.71	–	2.13)	<.001 ^a	2.67	(2.31	–	3.07)	<.001 ^a	3.56	(3.03	–	4.19)	<.001 ^a
E-cig. user	Started with e-cig.	2.68	(2.08	–	3.44)	<.001 ^a	4.18	(3.21	–	5.44)	<.001 ^a	5.56	(4.07	–	7.61)	<.001 ^a
	Started with c-cig.	1.28	(0.94	–	1.74)	.11	1.67	(1.09	–	2.55)	.02	2.15	(1.27	–	3.64)	.004
C-cig. user	Started with e-cig.	2.30	(1.56	–	3.38)	<.001 ^a	2.63	(1.52	–	4.55)	.001 ^a	2.87	(1.35	–	6.09)	.01
	Started with c-cig.	1.41	(1.30	–	1.54)	<.001 ^a	1.74	(1.53	–	1.98)	<.001 ^a	2.14	(1.83	–	2.51)	<.001 ^a
Ex-smoker	Started with e-cig.	1.23	(1.05	–	1.44)	.01	1.57	(1.25	–	1.98)	.001 ^a	1.52	(1.12	–	2.07)	.01
	Started with c-cig.	1.24	(1.16	–	1.32)	<.001 ^a	1.19	(1.07	–	1.33)	<.001 ^a	1.29	(1.11	–	1.49)	<.001 ^a
Never smoked		1.00					1.00					1.00				
Female																
Dual user	Started with e-cig.	4.70	(2.78	–	7.96)	<.001 ^a	6.85	(4.03	–	11.62)	<.001 ^a	11.04	(6.21	–	19.63)	<.001 ^a
	Started with c-cig.	2.34	(1.97	–	2.78)	<.001 ^a	3.67	(2.99	–	4.51)	<.001 ^a	5.15	(4.15	–	6.38)	<.001 ^a
E-cig. user	Started with e-cig.	2.46	(1.61	–	3.76)	<.001 ^a	5.16	(3.24	–	8.21)	<.001 ^a	5.41	(3.21	–	9.13)	<.001 ^a
	Started with c-cig.	1.99	(1.14	–	3.47)	.02	4.55	(2.22	–	9.34)	<.001 ^a	3.79	(1.97	–	7.28)	<.001 ^a
C-cig. user	Started with e-cig.	1.45	(0.75	–	2.81)	.27	2.58	(1.19	–	5.62)	.02	3.99	(1.92	–	8.32)	.001 ^a
	Started with c-cig.	1.65	(1.48	–	1.83)	<.001 ^a	2.17	(1.88	–	2.50)	<.001 ^a	2.85	(2.47	–	3.29)	<.001 ^a
Ex-smoker	Started with e-cig.	1.36	(1.07	–	1.74)	.01	1.68	(1.20	–	2.37)	.003	2.54	(1.82	–	3.55)	<.001 ^a
	Started with c-cig.	1.36	(1.25	–	1.48)	<.001 ^a	1.44	(1.27	–	1.62)	<.001 ^a	1.81	(1.59	–	2.06)	<.001 ^a
Never smoked		1.00					1.00					1.00				

Adjusted for school grade, economic status, living situation, academic achievement, alcohol use, physical activity level, self-reported health status, perceived stress level.

^a Statistically significant after applying Bonferroni correction.

Abbreviations: AOR, adjusted odds ratio; e-cig., electronic cigarettes; c-cig., conventional cigarettes.

eTable 3. Sensitivity Analyses of the Association Between Cigarette Type Initially Smoked and Suicidal Behaviors

Variables	Suicidal ideation						Suicide planning						Suicide attempt					
	Male			Female			Male			Female			Male			Female		
	AOR	95% CI	P-value	AOR	95% CI	P-value	AOR	95% CI	P-value	AOR	95% CI	P-value	AOR	95% CI	P-value	AOR	95% CI	P-value
Sensitivity analysis (1) - excluding those who started smoking or changed the cigarette type within 12 months from the time of survey ^a																		
Never smoking as reference																		
Started with e-cigarette	1.71	(1.49–1.96)	<.001 ^c	1.89	(1.54–2.32)	<.001 ^c	2.68	(2.26–3.18)	<.001 ^c	3.16	(2.48–4.02)	<.001 ^c	3.07	(2.49–3.77)	<.001 ^c	4.66	(3.63–5.99)	<.001 ^c
Started with c-cigarette	1.35	(1.27–1.43)	<.001 ^c	1.48	(1.38–1.59)	<.001 ^c	1.51	(1.38–1.65)	<.001 ^c	1.89	(1.71–2.03)	<.001 ^c	1.85	(1.65–2.06)	<.001 ^c	2.43	(2.19–2.70)	<.001 ^c
Never smoked	1.00			1.00			1.00			1.00			1.00			1.00		
Started with c-cigarette as reference																		
Started with e-cigarette	1.27	(1.11–1.46)	<.001 ^c	1.28	(1.03–1.58)	.03	1.78	(1.49–2.12)	<.001 ^c	1.67	(1.30–2.15)	<.001 ^c	1.66	(1.35–2.05)	<.001 ^c	1.92	(1.48–2.50)	<.001 ^c
Never smoked	0.74	(0.70–0.79)	<.001 ^c	0.68	(0.63–0.72)	<.001 ^c	0.66	(0.61–0.72)	<.001 ^c	0.53	(0.48–0.58)	<.001 ^c	0.54	(0.48–0.61)	<.001 ^c	0.41	(0.37–0.45)	<.001 ^c
Started with c-cigarette	1.00			1.00			1.00			1.00			1.00			1.00		
Sensitivity analysis (2) - age as a covariate ^b																		
Never smoking as reference																		
Started with e-cigarette	1.69	(1.49–1.92)	<.001 ^c	1.66	(1.36–2.02)	<.001 ^c	2.39	(2.04–2.80)	<.001 ^c	2.37	(1.83–3.06)	<.001 ^c	2.69	(2.20–3.30)	<.001 ^c	3.60	(2.79–4.65)	<.001 ^c
Started with c-cigarette	1.35	(1.27–1.42)	<.001 ^c	1.51	(1.41–1.61)	<.001 ^c	1.47	(1.35–1.61)	<.001 ^c	1.79	(1.63–1.97)	<.001 ^c	1.76	(1.58–1.97)	<.001 ^c	2.30	(2.08–2.54)	<.001 ^c
Never smoked	1.00			1.00			1.00			1.00			1.00			1.00		
Started with c-cigarette as reference																		
Started with e-cigarette	1.26	(1.11–1.43)	<.001 ^c	1.10	(0.90–1.35)	.36	1.63	(1.38–1.91)	<.001 ^c	1.32	(1.02–1.72)	.03	1.53	(1.25–1.87)	<.001 ^c	1.57	(1.20–2.05)	<.001 ^c
Never smoked	0.74	(0.70–0.79)	<.001 ^c	0.66	(0.62–0.71)	<.001 ^c	0.68	(0.62–0.74)	<.001 ^c	0.56	(0.51–0.61)	<.001 ^c	0.57	(0.51–0.64)	<.001 ^c	0.44	(0.39–0.48)	<.001 ^c
Started with c-cigarette	1.00			1.00			1.00			1.00			1.00			1.00		

^a Included sample: total, 249,395; male, 126,412; female, 122,983.

^b Included sample: total, 254,478; male, 130,184; female, 124,294.
^c Statistically significant after applying Bonferroni correction.
Adjusted for school grade ^a or age ^b , economic status, living situation, academic achievement, alcohol use, physical activity level, self-reported health status, perceived stress level.
Abbreviations: AOR, adjusted odds ratio; e-cigarette, electronic cigarettes; c-cigarette, conventional cigarettes.

eTable 4. Sensitivity Analyses of the Association Between Switching Cigarette Type and Suicidal Behaviors

Variables	Suicidal ideation						Suicide planning						Suicide attempt											
	Male			Female			Male			Female			Male			Female								
	AO R	95% CI	P- value	AO R	95% CI	P- value	AO R	95% CI	P- value	AO R	95% CI	P- value	AO R	95% CI	P- value	AO R	95% CI	P- value						
Sensitivity analysis (1) - excluding those who started smoking or changed the cigarette type within 12 months from the time of survey ^a																								
Never smoking as reference																								
Switched from e-cig. to c-cig. (e-cig. → c-cig. or both)	2.49	(1.94)	3.19	<.001 ^c	2.96	(1.90)	4.61	<.001 ^c	3.94	(2.94)	5.29	<.001 ^c	4.80	(3.10)	7.44	<.001 ^c	4.39	(3.16)	6.10	<.001 ^c	7.92	(5.00)	12.54	<.001 ^c
Initiated smoking using both e-cig. & c-cig. (in same year)	1.59	(1.42)	1.78	<.001 ^c	1.90	(1.57)	2.29	<.001 ^c	1.96	(1.68)	2.29	<.001 ^c	2.86	(2.26)	3.63	<.001 ^c	2.48	(2.06)	2.98	<.001 ^c	3.86	(3.00)	4.97	<.001 ^c
Switched from c-cig. to e-cig. (c-cig. → e-cig. or both)	1.34	(1.22)	1.47	<.001 ^c	1.45	(1.26)	1.67	<.001 ^c	1.49	(1.31)	1.71	<.001 ^c	2.11	(1.76)	2.53	<.001 ^c	2.11	(1.80)	2.48	<.001 ^c	2.95	(2.44)	3.57	<.001 ^c
Used only e-cig.	1.47	(1.26)	1.72	<.001 ^c	1.59	(1.24)	2.04	<.001 ^c	2.24	(1.83)	2.75	<.001 ^c	2.62	(1.96)	3.50	<.001 ^c	2.61	(2.02)	3.36	<.001 ^c	3.66	(2.69)	4.98	<.001 ^c
Used only c-cig.	1.29	(1.20)	1.38	<.001 ^c	1.44	(1.32)	1.56	<.001 ^c	1.40	(1.25)	1.57	<.001 ^c	1.69	(1.53)	1.91	<.001 ^c	1.52	(1.31)	1.76	<.001 ^c	2.08	(1.83)	2.37	<.001 ^c
Never smoked	1.00				1.00				1.00				1.00				1.00				1.00			
Switching from c-cig. to e-cig. as reference																								
Switched from e-cig. to c-cig. (e-cig. → c-cig. or both)	1.86	(1.44)	2.41	<.001 ^c	2.04	(1.30)	3.23	.002 ^c	2.64	(1.95)	3.57	<.001 ^c	2.27	(1.43)	3.62	<.001 ^c	2.08	(1.47)	2.94	<.001 ^c	2.68	(1.64)	4.40	<.001 ^c
Initiated smoking using both e-cig. & c-cig. (in same year)	1.19	(1.04)	1.36	.01	1.31	(1.03)	1.66	.03	1.31	(1.09)	1.57	<.001	1.36	(1.01)	1.82	.04	1.17	(0.95)	1.45	.14	1.31	(0.96)	1.77	.09
Switched from c-cig. to e-cig. (c-cig. → e-cig. or both)	1.00				1.00				1.00				1.00				1.00				1.00			
Sensitivity analysis (2) - age as a covariate ^b																								
Never smoking as reference																								

Switched from e-cig. to c-cig. (e-cig. → c-cig. or both)	2.55	(2.05)	3.18	<.001 ^c	2.52	(1.64)	3.86	<.001 ^c	3.39	(2.60)	4.43	<.001 ^c	3.60	(2.25)	5.75	<.001 ^c	3.94	(2.89)	5.37	<.001 ^c	6.75	(4.25)	10.73	<.001 ^c
Initiated smoking using both e-cig. & c-cig. (in same year)	1.53	(1.37)	1.70	<.001 ^c	1.82	(1.53)	2.16	<.001 ^c	1.71	(1.47)	2.00	<.001 ^c	2.47	(1.96)	3.12	<.001 ^c	2.09	(1.72)	2.53	<.001 ^c	3.07	(2.40)	3.93	<.001 ^c
Switched from c-cig. to e-cig. (c-cig. → e-cig. or both)	1.33	(1.21)	1.45	<.001 ^c	1.44	(1.27)	1.63	<.001 ^c	1.82	(1.30)	1.68	<.001 ^c	1.85	(1.56)	2.19	<.001 ^c	2.02	(1.73)	2.37	<.001 ^c	2.61	(2.18)	3.11	<.001 ^c
Used only e-cig.	1.40	(1.21)	1.63	<.001 ^c	1.44	(1.15)	1.81	.002 ^c	2.01	(1.65)	2.44	<.001 ^c	1.98	(1.45)	2.69	<.001 ^c	2.22	(1.72)	2.87	<.001 ^c	2.69	(1.94)	3.73	<.001 ^c
Used only c-cig.	1.31	(1.23)	1.41	<.001 ^c	1.49	(1.38)	1.61	<.001 ^c	1.40	(1.26)	1.57	<.001 ^c	1.68	(1.50)	1.87	<.001 ^c	1.52	(1.32)	1.76	<.001 ^c	2.09	(1.85)	2.35	<.001 ^c
Never smoked	1.00				1.00				1.00				1.00				1.00				1.00			
Switching from c-cig. to e-cig. as reference																								
Switched from e-cig. to c-cig. (e-cig. → c-cig. or both)	1.92	(1.53)	2.42	<.001 ^c	1.75	(1.13)	2.71	.008	2.29	(1.74)	3.02	<.001 ^c	1.94	(1.19)	3.19	.003	1.95	(1.41)	2.70	<.001 ^c	2.59	(1.59)	4.24	<.001 ^c
Initiated smoking using both e-cig. & c-cig. (in same year)	1.15	(1.02)	1.31	.03	1.26	(1.02)	1.56	.03	1.16	(0.97)	1.37	.09	1.34	(1.01)	1.77	.04	1.03	(0.83)	1.29	.71	1.18	(0.88)	1.57	.24
Switched from c-cig. to e-cig. (c-cig. → e-cig. or both)	1.00				1.00				1.00				1.00				1.00				1.00			
^a Included sample: total, 249,395; male, 126,412; female, 122,983.																								
^b Included sample: total, 254,478; male, 130,184; female, 124,294.																								
^c Statistically significant after applying Bonferroni correction.																								
Adjusted for school grade ^a or age ^b , economic status, living situation, academic achievement, alcohol use, physical activity level, self-reported health status, perceived stress level.																								
Abbreviations: AOR, adjusted odds ratio; e-cig., electronic cigarettes; c-cig., conventional cigarettes.																								

eTable 5. Sensitivity Analyses of the Association of the Timing of Switching Cigarette Type With Suicidal Behaviors

Variables	Suicidal ideation									Suicide planning								
	Male participants			Female participants			Male participants			Female participants								
	AOR	95% CI	P-value	AOR	95% CI	P-value	AOR	95% CI	P-value	AOR	95% CI	P-value						
Sensitivity analysis (1) - excluding those who started smoking or changed the cigarette type within 12 months from the time of survey^a																		
Timing of the switching cigarette type																		
Started with e-cig. & switched after 2 years	3.93	(2.57 – 5.99)	<.001 ^c	4.08	(1.99 – 8.39)	<.001 ^c	5.53	(3.48 – 8.76)	<.001 ^c	8.55	(4.48 – 16.32)	<.001 ^c						
Started with e-cig. & switched in 2 years	2.00	(1.48 – 2.70)	<.001 ^c	2.43	(1.42 – 4.18)	.002 ^c	3.29	(2.27 – 4.75)	<.001 ^c	3.09	(1.67 – 5.70)	<.001 ^c						
Started with c-cig. & switched after 2 years	1.30	(1.14 – 1.49)	<.001 ^c	1.40	(1.10 – 1.77)	.005	1.52	(1.25 – 1.84)	<.001 ^c	1.98	(1.46 – 2.68)	<.001 ^c						
Started with c-cig. & switched in 2 years	1.36	(1.22 – 1.52)	<.001 ^c	1.48	(1.24 – 1.76)	<.001 ^c	1.49	(1.26 – 1.75)	<.001 ^c	2.20	(1.76 – 2.74)	<.001 ^c						
Started with both e-cig. & c-cig. in same time (e-cig. = c-cig.)	1.59	(1.42 – 1.78)	<.001 ^c	1.90	(1.57 – 2.29)	<.001 ^c	1.96	(1.68 – 2.29)	<.001 ^c	2.87	(2.26 – 3.64)	<.001 ^c						
Used only one cigarette type	1.31	(1.23 – 1.40)	<.001 ^c	1.45	(1.34 – 1.57)	<.001 ^c	1.52	(1.37 – 1.68)	<.001 ^c	1.77	(1.58 – 1.98)	<.001 ^c						
Never smoked	1.00			1.00			1.00			1.00								
Sensitivity analysis (2) - age as a covariate^b																		
Timing of the switching cigarette type																		
Started with e-cig. & switched after 2 years	4.32	(2.86 – 6.51)	<.001 ^c	3.03	(1.36 – 6.77)	.006	5.98	(3.87 – 9.25)	<.001 ^c	6.09	(2.85 – 13.01)	<.001 ^c						
Started with e-cig. & switched in 2 years	2.07	(1.60 – 2.68)	<.001 ^c	2.32	(1.43 – 3.76)	.001 ^c	2.56	(1.83 – 3.58)	<.001 ^c	2.70	(1.46 – 4.98)	.002 ^c						
Started with c-cig. & switched after 2 years	1.29	(1.13 – 1.46)	.002 ^c	1.33	(1.08 – 1.63)	.02	1.51	(1.27 – 1.80)	<.001 ^c	1.75	(1.34 – 2.28)	<.001 ^c						
Started with c-cig. & switched in 2 years	1.35	(1.23 – 1.49)	<.001 ^c	1.52	(1.31 – 1.76)	<.001 ^c	1.47	(1.26 – 1.71)	<.001 ^c	1.92	(1.56 – 2.37)	<.001 ^c						
Started with both e-cig. & c-cig. in same time (e-cig. = c-cig.)	1.53	(1.37 – 1.70)	<.001 ^c	1.82	(1.53 – 2.16)	<.001 ^c	1.71	(1.47 – 2.00)	<.001 ^c	2.47	(1.96 – 3.12)	<.001 ^c						
Used only one cigarette type	1.33	(1.24 – 1.41)	<.001 ^c	1.49	(1.38 – 1.60)	<.001 ^c	1.49	(1.35 – 1.65)	<.001 ^c	1.70	(1.53 – 1.89)	<.001 ^c						

Never smoked	1.00					1.00					1.00					1.00					
^a Included sample: total, 249,395; male, 126,412; female, 122,983.																					
^b Included sample: total, 254,478; male, 130,184; female, 124,294.																					
^c Statistically significant after applying Bonferroni correction.																					
Adjusted for school grade ^a or age ^b , economic status, living situation, academic achievement, alcohol use, physical activity level, self-reported health status, perceived stress level.																					
Abbreviations: AOR, adjusted odds ratio; e-cig., electronic cigarettes; c-cig., conventional cigarettes.																					