



**Bilaga 5. Tabeller över inkluderade studier som ligger till grund för resultatet/
Characteristics of included studies (low and moderate risk of bias)**

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Table 5.1 Snuff use – cohort

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinen ce Exposure Outcome	Results
Araneda 2019 [1] Finland	<p>Design Prospective cohort</p> <p>Time to follow-up 6–7 years</p> <p>Description of cohort Population-based FinnTwin12 cohort studies sequentially enrolled 5600 Finnish twins born 1983 through 1987. The data collected at mean ages 17 and 24 were used for this study.</p> <p>Study period T3 (17 yrs.): 2000 to 2005 T4 (24 yrs.): 2006 to 2011</p>	<p>Population Young Finnish male twins in the desired age range with no missing data</p> <p>N=1 090</p> <p>N=375 never users, cigarettes at baseline N=715 ever users, cigarettes at baseline N=710 ever users, snuff at baseline</p> <p><i>Mean age at baseline (SD)</i> 17.6 (0.20) <i>Mean age at follow-up (SD)</i> 24.1 (1.68)</p> <p><i>Sex</i> M: 100%</p> <p><i>Ethnicity</i> Finnish</p> <p><i>Education</i> Vocational school or not studying (%): 433/1090 (39.7) Academically oriented secondary school: 657/1090 (60.2)</p>	<p>Definition of smokers Users divided up into those that used 1 time, 2 to 50 times, more than 50 times, and regularly</p> <p>Exposure 375 answered that they had never used cigarettes at baseline</p> <p>Outcome Answered that they had ever used snuff at follow-up</p>	<p>Adjusted model: Logistic regression analyses with reference groups consisting of individuals without exposure to the predictor in question (here: snuff). Adjusted for: age, monthly alcohol intoxication, maternal smoking and peer use of illicit drugs</p> <p>1a) never users of cigarettes (n=375) Outcome: daily use of cigarettes Group A (snuff never users, n= 357) = 20 Group B (snuff ever users, n= 18) = 5</p> <p>Association between <i>lifetime</i> snuff use and daily use of cigarettes (n=375) Adjusted OR (95%CI) = 3.94 (1.22 to 12.7)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinen ce Exposure Outcome	Results
		<p><i>Drop-out rate</i> 2557 (75%) of cohort provided information for all relevant variables; of those 1090 (42.6%) were men in the desired age range.</p>		
Galanti 2001 [2] Sweden	<p>Design Prospective cohort study (BROMS study)</p> <p>Time to follow-up 1 year</p> <p>Setting School-based survey administered in the classroom</p> <p>Study period T0: 1997–1998 T1: one year later</p>	<p>Population Participants were children in the fifth grade of compulsory schools in the county of Stockholm. At baseline, 22% of the boys and 15% of the girls had ever smoked, respectively 8% and 3% had ever used oral moist snuff.</p> <p>N=3050 (enrolled) N=3019 (T0) N=2883 (T1)</p> <p><i>Age:</i> 11–12 years</p> <p><i>Sex (baseline):</i> W: N=1482 (49.1%), M: N=1537 (50.9%),</p> <p><i>Sex (follow-up):</i> men: N=1 467/2883 (50.9%), women: N=1 416/2883 (49.1%)</p> <p><i>Ethnicity:</i> Na</p>	<p>Definition of smokers Ever tried cigarette smoking, even one single puff</p> <p>Exposure and outcome <i>Ever smokers:</i> any experience of cigarette smoking at the time of data collection. <i>Only puffed:</i> have tried smoking but never smoked a whole cigarette <i>Non-Smoker:</i> having smoked one or more cigarettes but not smoking at present. <i>Current smoker:</i> having smoked one or more cigarettes and is smoking presently, from “now and then, but less than monthly” to daily</p> <p><i>Use of snus:</i></p>	<p>A1) Never cigarette smokers at T0 Outcome: Cigarette smoking only (T1); n (%) No snus use at T0; boys: 137/1114 (12.3%) Snus use at T0; boys: 0/34 (0%) No snus use at T0; girls: 179/1185 (15.1%) Snus use at T0; girls: 0/18 (0%)</p> <p>A1) Never cigarette smoker at T0 Outcome: Dual users (cigarette and snus) (T1); n(%) No snus use at T0; boys: 63/1114 (5.7%) Snus use at T0; boys: 14/34 (41.2%) No snus use at T0; girls: 21/1185 (1.8%) Snus use at T0; girls: 5/18 (27.8%)</p> <p>A1) Never cigarette smokers at T0 Outcome: Cigarette smoking (T1) (pooled); n(%) No snus use at T0; boys: 200/1114 (18.0%) Snus use at T0; boys: 14/34 (41.2%) No snus use at T0; girls: 200/1185 (16.9%) Snus use at T0; girls: 5/18 (27.8%) No snus use at T0; all: 400/2299(17.4%) Snus use at T0; all: 19/52 (36.5%)</p>

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		<p><i>Education:</i> Na</p> <p>Drop-out rate 136 between T0 and T1, 136/3019=4.5 %</p>	Ever-use: having ever tried oral snuff	
Galanti et al. 2008 [3] Sweden	<p>Design Prospective cohort study (BROMS study)</p> <p>Time to follow-up Annual follow-ups for 6 years</p> <p>Setting School-based survey administered in the classroom</p> <p>Study period 1997—2004 T0:1997—1998 (5th grade) T6: 2003—2004 (third year post-compulsory school, PCS3)</p>	<p>Population Children in the fifth grade of compulsory schools in the urban area of the Stockholm region.</p> <p>N=3020 (T0) N=2938 (analytical sample)</p> <p>Age (T0): Boys, mean age 11.6 years (SD=0.32, median=11.6, range 10.3—13.1), Girls, mean age 11.6 years (SD=0.34, median=11.6, range 10.1—13.0) Sex (baseline): men, N=1494, Women, N=1444</p> <p><i>Ethnicity:</i> Na <i>Education:</i> Na</p> <p>Drop-out rate Na</p>	<p>Definition of smokers <i>Ever-use:</i> even a single cigarette puff.</p> <p>Exposure and outcome <i>Ever users:</i> having puffed from a cigarette and/or having tried snus. <i>Current users:</i> self-reported use of cigarettes and/or of snus at least once a month. <i>Cigarette starters:</i> having at least tried smoking, but never used snus. <i>Snus starters:</i> having only used snus. <i>Mixed starters:</i> started the use of both products during the same time period</p>	<p>Adjusted model Adjusted for sex and age at baseline</p> <p>A1) Never cigarette smokers at T0 Outcome: Current smoking at T6, n (%): Never snus user (T0): 424/1960 (21.6%) Snus user (only) (T0): 13/39 (33%)</p> <p><i>Adjusted model, OR (95 % CI):</i> Never snus user (T0): 1.00 Snus user (only) (T0): 1.95 (0.96; 3.80)</p>
Grotvedt 2013	Design Prospective cohort	Population	Definition of smokers Have ever smoked	Multivariable logistic regression models for associations between snus and smoking in male.

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
[4] Norway	<p>Time to follow-up 3 years</p> <p>Setting Male adolescents in both urban and rural areas. Questionnaires given during school class (follow-up in Hedmark as a postal survey)</p> <p>Study period 2000—2004</p>	<p>Male 10th graders (16-year-olds) in Oslo County and in the predominantly rural county Hedmark in 2000–2001. In both counties nearly all public and private schools participated</p> <p>N= 2894 (baseline; T1) N= 1395(T2)</p> <p><i>Age:</i> Mean age (SD; range): 15.9 (14.7; 17.4) years</p> <p><i>Sex:</i> Only men</p> <p><i>Ethnicity:</i> Na</p> <p><i>Parental education:</i> Na</p> <p>Drop-out rate 1499/2894 (52.0%)</p> <p><i>Loss to follow-up</i> was associated with non-western ethnicity, postal survey compared with school-based and low educational ambitions</p>	<p>Exposure Snus use</p> <p>Outcome Smoking initiation Smoking cessation</p>	<p>Adjusted model: Adjusted for previous smoking” and “previous snus use”, alcohol use at baseline, (n = 1361). The baseline variables age, parents’ marital status, county, parents’ country of birth, pupils’ educational plans and family members smoking did not influence the association between tobacco use at baseline and at follow-up and were left out.</p> <p>A1) Non-cigarette smokers (T0) Outcome: Only cigarette smoking (T1): No tobacco (T0): 114/986 (11.6%) Snus user (T0):10/90 (11.1%)</p> <p>No tobacco: OR: 1.00 Snus user (unadjusted): OR:2.73 (95% CI: 1.26; 5.92) Snus user (adjusted): OR: 1.66 (95% CI: 0.73; 3.80)</p> <p>A1) Non-cigarette smokers (T0) Outcome: Dual use (T1): No tobacco: 100/986 (10.1%) Snus user:25/90 (27.8%)</p> <p>No tobacco: OR: 1.00 Snus user (unadjusted): OR: 7.00 (95% CI: 3.78; 12.96) Snus user (adjusted): OR: 3.49 (95% CI: 1.79; 6.82)</p> <p>A1) Non-cigarette smokers (T0) Outcome: Cigarette smoking (T1) (pooled): No tobacco: 214/986 (10.1%)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinen ce Exposure Outcome	Results
				Snus user:35/90 (27.8%) A2) Current cigarette smokers (T0) Outcome: No cigarette smoking (T1): Smokers (no snus): 37/175 (21.1%) Dual user (snus): 46/144 (31.9%)
Grøtvedt 2019 [5] Norway	Design prospective cohort (subgroup analysis) Time to follow-up 11 years Description of cohort The Nord-Trøndelag Health Study (HUNT) is a large population-based health study conducted regularly in the county of Nord-Trøndelag, Norway since 1986. All inhabitants 13 years and older are invited to participate. Young-HUNT1 was the baseline for our cohort study. All students in junior high school (age 13–16 years) and high school (16–19 years) were invited to fill in self-	Population Boys responding to tobacco questions at both time points. Total: N= 1346 Ever snuff users: 149, 11% Ever smokers: 105, 8% Ever dual users: 109, 8% Never users: 983, 73% <i>Mean age (SD)</i> Total = 16.2 (1.8) Ever snuff users: 17.0 (1.6) Ever smokers: 16.8 (1.6) Ever dual users: 16.7 (1.5) Never users: 15.9 (1.8) p<0.001 for independence from tobacco use at baseline <i>Sex, %</i> F: 0% M: 100% (data for girls in supplementary files)	Definition of smokers Ever use of combustible tobacco Exposure Ever use of snus Outcome Smoking initiation, any use of product. Current (daily or occasional use) of product.	Adjusted model: multivariable regression analyses adjusted for age and family smoking. 1a never users of combustible tobacco; outcome: ever use of combustible tobacco product; Never snus users: 187/983 (19%) Ever snus users: 37/149 (25%) 1a) never users of combustible tobacco Outcome: current use of combustible tobacco product; n Never snus users: 172/906 (19%) Ever snus users:41/163 (25%) <i>Adjusted model (RR, 95% CI)</i> Ever snus users: RR: 2.15 (1.69 to 2.73) <i>Adjusted model (AOR, 95% CI)</i> Ever snus users: OR: 2.54 (1.72; 3.74)

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinen ce Exposure Outcome	Results
	<p>reported questionnaires. The HUNT3 data was delivered by post and collected in person</p> <p>Study period T0 1995 to 1997 (Young HUNT1) T1 2006 to 2008 (Young HUNT3)</p>	<p><i>Ethnicity, %</i> NR <i>Plans for education (Total), %</i> Not yet decided: 403, 29.9% Vocational school: 420, 31.2% High school: 237, 17.6% University or more: 242, 18.0% p<0.301 for independence from tobacco use at baseline</p> <p><i>Family member who smokes, %</i> Total: 661, 49.1% Ever snuff users: 78, 52.3% Ever smokers: 70, 66.7% Ever dual users: 78, 71.6% Never users: 399, 40.6% p<0.001 for independence from tobacco use at baseline</p> <p>Data selection/response rate /missing data Young HUNT1: A total of 8981 adolescents (88% of all invited) participated. HUNT3 had a “low participation rate” Only boys selected for this study. Of 4334 boys who participated in HUNT1 1388 participated HUNT3, of those 1346</p>		

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinen ce Exposure Outcome	Results
		responded to questions about tobacco at both time points		
Haukkala, A. 2006 [6] Finland	<p>Design Cohort study (part of ESFA)</p> <p>Time to follow-up 3 years. (Four waves)</p> <p>Setting Seventh grade male schoolchildren in Helsinki, Finland. Questionnaires distributed through schools.</p> <p>Study period September 1998 to April 2001</p>	<p>Population Seventh grade pupils of all Finnish-speaking lower secondary schools in Helsinki in September 1998 (baseline). This is the Finnish cohort of the ESFA-study [7]</p> <p>T1: N=2745 T3: N=2356 T4: N=1832 (Two schools dropped out during the last wave.) <i>OBS! Only boys were included in the oral snuff analyses. Number of boys included not available.</i></p> <p><i>Age</i> Mean at T1: 13.8 years Mean at T4: 16.3 years</p> <p><i>Sex (total)</i> F: 1273/2731=46.6% M: 1458/2731=53.4% <i>Sex (snuff analyses)</i> Only males</p> <p><i>Ethnicity:</i> Non-native born: 10.1% [7]</p>	<p>Definition of smokers <i>Outcome categories</i> *Never smokers *Those who have at least tried *Current weekly smokers (regular smokers who smoke at least weekly).</p> <p>Exposure Use of Swedish oral snuff (The response alternatives were, never, I have used snuff once, I have used snuff 2–50 times or I have used snuff over 50 times in total)</p> <p>Outcome Cigarette smoking</p>	<p>Adjusted model The models were adjusted for the different schools (students clustered according to the 27 different schools), sport as a free time activity and school achievement. Only boys were included in the analyses since there were too few girls using oral snuff. Baseline smokers were excluded when predicting later smoking. The model used fixed effect.</p> <p>1A) Non-regular smokers at T1 Outcome: Regular smokers at T2: <i>Adjusted model:</i> Never snuff users: OR:1.0 Have at least tried snuff: OR 6.21 (3.20—12.06)</p> <p>1A) Non-regular smokers at T2 Outcome: Regular smokers at T3 (n=1079): <i>Adjusted model:</i> Never snuff users: OR:1.0 Once tried: OR 2.68 (1.55—4.62) 2 to 50 times: OR 3.77 (2.09—6.78) Over 50 times: OR 2.76 (1.26—6.06) Have at least tried snuff: OR 4.38 (2.82—6.80)</p> <p>1A) Non-regular smokers at T3 Outcome: Regular smokers at T4:</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinen ce Exposure Outcome	Results
		<p><i>Parental education:</i> Na</p> <p>Drop-out rate 210/2955 (7.1%) <i>excluded at baseline because of missing information, change of schools or absence from school.</i></p>		<p><i>Adjusted model:</i> Never snuff users: OR:1.0 Have at least tried snuff: OR 4.37 (2.44—7.82)</p>
Lundqvist, G. 2009 [8] Sweden	<p>Design Cohort study (VIP)</p> <p>Time to follow-up 10 years</p> <p>Setting Data from 16 486 participants in the Västerbotten Intervention Programme (VIP), in Sweden, where people were invited to a health screening and counselling programme at 30, 40, 50 and 60 years of age. Data was collected through Self-report questionnaire</p> <p>Study period 1985—2004</p>	<p>Population General population, 30—60 years of age at first invitation to participate, and followed for 10 years (different cohorts) N= 16486</p> <p><i>Age</i> M (SD) = na <i>Age female</i> M(SD) = 41.6 (7.61) <i>Age male</i> M(SD) = 41.2 (7.66)</p> <p><i>Sex</i> F= 8800 (53.4%) M= 7686 (46.6%)</p> <p><i>Ethnicity:</i> na <i>Education:</i> Na</p> <p>Drop-out rate:</p>	<p>Definition of smokers Smokers are defined as those who smoke one cigarette or more per day. Snuff users (use snuff regularly)</p> <p>Exposure self-report of use of snuff (yes or no) at baseline.</p> <p>Outcome Smoking habits (non-smoker, ex-smoker, and daily smoker)</p>	<p>A2) Smoker at T1; n= 3375 Outcome: Tobacco-free (No cigarettes, no snus) at 10 years follow-up Non-snus-users at T1: 918/3018 (30.4%) Snus-users at T1: 46/357 (12.9%)</p> <p>A2) Smoker at T1; n= 3375 Outcome: Smoke-free (No cigarettes) at 10 years follow-up Non-snus-users at T1: 1224/3018 (40.6%) Snus-users at T1: 214/357 (59.9%)</p> <p>A2) Male smoker at T1; n= 1418 Outcome: Smoke-free (No cigarettes) at 10 years follow-up Non-snus-users at T1: 436/1104 (39.5%) Snus-users at T1: 184/314 (58.6%)</p> <p>A2) Female smoker at T1; n= 1957 Outcome: Smoke-free (No cigarettes) at 10 years follow-up Non-snus-users at T1: 788/1914 (41.2%) Snus-users at T1: 30/43 (69.8%)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinen ce Exposure Outcome	Results
		na		
Norberg et al. 2011 [9] Sweden	<p>Design Prospective cohort study (Västerbotten Intervention Programme (VIP))</p> <p>Time to follow-up 10 years</p> <p>Setting General population Survey by their local primary health care centre</p> <p>Study period 1990—1997 until 2000—2007</p>	<p>Population Participants were adults in the county of Västerbotten, Sweden Age: 40, 50, and 60-year old persons; until 1995, also 30- year old persons. N= 112 920 (total, all ages)</p> <p><i>Age: 30—60 years</i> <i>Sex (N= 112 920 the survey from 1990—2007)</i> Women: N=57 363 (50.8 %) Men: N=55 362 (49.2 %)</p> <p><i>Ethnicity: Na</i></p> <p><i>Education: Na</i></p> <p>Drop-out rate A drop-out analysis based on the Swedish population register, showed that among participants 1990—1997 (N=38,041) a total of 2 649 were not eligible for follow up. Of the eligible participants, 75.9% (N=26,867) returned a second time after 10 years.</p>	<p>Definition of smokers Non-smokers at T0</p> <p>Exposure and outcome Snus use</p>	<p>Longitudinal data are used to estimate age-adjusted changes in tobacco habits from baseline to 10-year follow-up by gender and education and statistical significance is analysed using the Marginal Homogeneity test. Statistical significance was assumed at p<0.001</p> <p>1a) Non cigarette smokers at T1 Outcome: Only cigarette smoking at (T2); n(%) No snus use at T1; men: 151/6846 (2.2%) Snus use at T1; men: 24/2218 (1.1%)</p> <p>No snus use at T1; women: 286/9520 (3.0%) Snus use at T1; women: 7/369 (1.9%)</p> <p>1a) Non cigarette smokers at T1 Outcome: Dual users at (T2); n(%) No snus use at T1; men: 27/6846 (0.4%) Snus use at T1; men: 111/2218 (5.0%)</p> <p>No snus use at T1; women: 19/9520 (0.2%) Snus use at T1; women: 23/369 (6.2%)</p> <p>A1) Non cigarette smokers at T1 Outcome: Cigarette smoking at (T2); n(%) No snus use at T1; men: 178/6846 (2.6%) Snus use at T1; men: 135/2218 (6.1%) No snus use at T1; women: 305/9520 (3.2%) Snus use at T1; women: 30/369 (8.1%) No snus use at T1; all: 483/16366 (3.0%)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
				<p>Snus use at T1; all: 165/2587 (6.4%)</p> <p>A2) Cigarette smokers at T1 Outcome: Tobacco free at (T2); n(%) No snus use at T1; men: 514/1792 (28.7%) Snus use at T1; men: 94/765 (12.3%) No snus use at T1; women: 1139/3361 (33.9%) Snus use at T1; women: 21/113 (18.6%) No snus use at T1; all: 1653/5153 (32.1%) Snus use at T1; all: 115/878 (13.2%)</p> <p>A2) Cigarette smokers at T1 Outcome: Cigarette free at (T2); n(%) No snus use at T1; men: 743/1792 (41.5%) Snus use at T1; men: 438/765 (57.3%) No snus use at T1; women: 1394/3361 (41.5%) Snus use at T1; women: 77/113 (68.1%) No snus use at T1; all: 2137/5153 (41.5%) Snus use at T1; all: 515/878 (58.7%)</p>

CI= confidence interval; F=female; M=male; MD= mean difference; T1=first measurement (baseline); N= number; Na=Information not available; OR= Odds ratio; SD= standard deviation; ;T1= first measurement; T2= second measurement; T3=third measurement;

Table 5.2. E-cigarette use- cohort

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
<p>Al-Delaimy, W. K. 2015 [10,11] USA</p>	<p>Design Prospective cohort – California Smokers Cohort (CSC)</p> <p>Time to follow-up 1 year</p> <p>Description of cohort Current and former smokers in California, 18– 59 years old. Telephone interview.</p> <p>N= 4,350, response rate baseline survey 23.4%</p> <p>Study period 2011–2013</p>	<p>Population Current smokers at baseline, who provided information in both baseline and follow-up surveys.</p> <p>N= 1000 <i>Age (years):</i> 18–44: 30.2% 45–59: 69.8%</p> <p><i>Sex:</i> F: 52.2%, M: 47.8%</p> <p><i>Ethnicity:</i> Non- Hispanic white: 72.6% Hispanic: 9.9%, Other: 17.5%</p> <p><i>Education, (years):</i> ≤12: 34.8%, 13–15: 44.9% ≥16: 20.3%</p> <p><i>Smoking status:</i> Daily smoker: 83.7% Non-daily smoker: 16.6%</p> <p><i>Motivation to quit:</i> intended to quit smoking in the next 6 months</p>	<p>Definition of smokers <i>Smoker:</i> Persons who have smoked at least 100 cigarettes during their lifetime.</p> <p><i>Current smokers:</i> Smoked at least 100 cigarettes during lifetime and smoked at least some days at the time of the survey</p> <p>Exposure Ever use of e-cigarettes: Respondents who reported “have used e- cigarettes” at T0 and T1, respondents who changed status between T0 and T1 were excluded.</p> <p>Never use of e-cigarettes: Respondents who reported “will never use e-cigarettes” at T0 and T1.</p> <p>Respondents who changed status between T0 and T1 were excluded form analysis.</p> <p>Outcome Respondent was considered abstinent if abstinent from cigarette use, for 1 month or longer.</p>	<p>Adjusted model: adjusted for age, gender, education, ethnicity, smoking status, intention to quit, and time to first cigarette.</p> <p>2B) Smokers at T0 Outcome: Abstinence from cigarette use (at least one month) at T1: Never e-cigarette users: 32/177 (18.1%) Ever e-cigarette users: 12/191 (6.3%)</p> <p><i>Adjusted model (AOR, 95% CI)</i> Never e-cigarette users: OR:1.0 Ever e-cigarette users: 0.41 (0.18; 0.93)</p> <p>2B) Smokers at T0 Outcome: Reduction (20% or more) in the number of cigarettes smoked at T1 compared to T0: Never e-cigarette users: 55/139 (39.6%) Ever e-cigarette users: 55/173 (31.8%)</p> <p><i>Adjusted model (AOR, 95% CI), n=318</i> Never e-cigarette users: OR:1.0 Ever e-cigarette users: 0.51 (0.30; 0.87)</p>

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		<p>Yes: 43.4%, No:56.6%</p> <p>Drop-out rate 632/1000 (63.2%) of respondents were excluded from analyses since it was not possible to classify them as either ever or never e-cigarette users.</p>	<p>Reduction (20% or more) in the number of cigarettes smoked per month, compared to baseline.</p>	
<p>Aleyan, S 2018 [12,13] Canada</p>	<p>Design Longitudinal cohort study – COMPASS</p> <p>Time to follow-up 2 years.</p> <p>Description of cohort Students grade 9 to 12 attending 89 high schools across Ontario and Alberta, Canada. 81 schools included in follow-up survey at T1. Data collection by in-class questionnaires.</p> <p>T0: N=45 298, response-rate 79.2%. T1: N=40 436, response rate 79.9%</p> <p>Study period</p>	<p>Population Never smoking students who could be followed across both timepoints.</p> <p>Students in grade 11 and 12 at T0 who had graduated at T1 were excluded from analysis. Of 11 215 students 1 527 reported ever having tried a cigarette at baseline and were excluded from analysis.</p> <p>N=9,688 with liked data T0 to T1</p> <p><i>Age</i> 9 to 11th grade</p> <p><i>Sex</i> F: 52.3%, M: 47.7%</p> <p><i>Ethnicity:</i></p>	<p>Definition of smokers <i>Never smokers: never tried smoking a cigarette, not even a puff or two.</i></p> <p><i>Ever smokers: not never smokers.</i></p> <p>Exposure Current e-cigarette users: use of e-cigarettes in the past 30 days at baseline. Non-current e-cigarette users: not current e-cigarette users.</p> <p>Outcome Smoking initiation, ever tried cigarette smoking, even a puff or two.</p>	<p>Adjusted model: Na</p> <p>1B) Non-susceptible never smokers at T0 Outcome: Tried smoking at T1: Non-current e-cigarette users: 893/6616=13.5% Current e-cigarette users: 33/73=45.2%</p> <p>1B) Susceptible never smokers at T0 Outcome: Tried smoking at T1: Non-current e-cigarette users: 48/133=36.1% Current e-cigarette users: 1672/2679=62.4%</p> <p>1B) Never smokers (pooled) at T0 Outcome: Tried smoking at T1: Non-current e-cigarette users: 941/6749=13.9% Current e-cigarette users: 1705/2752=62.0%</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	2013–2014 until 2015–2016 (i.e. year 2–4 of the COMPASS study)	White: 70.8% Black: 2.6% Asian: =4.7% Hispanic/Latin American: 1.1% Other/Mixed: =20.8%. <i>Education:</i> Na Drop-out rate NA.		
Barrington-Trimis 2019 [14] US	Design Prospective cohort study. Pooled data from three cohorts: Children’s Health Study (CHS), Yale Adolescent Survey Study (YASS) and Happiness and Health (HH). Time to follow-up 1 year Description of cohort CHS included participants in grades 11 or 12 at baseline HH included participants in grade 9 at baseline	Population American adolescents and young adults. N=6147 CHS N=1553 HH N=3190 YASS N=1404 <i>Age</i> NR grades 9 to 12 <i>Sex, %</i> F: 3291, 53.5 CHS: 801, 51.6 HH: 1723, 54.0 YASS: 767, 54.6 M: 2856, 46,5 100–53.5= 46.5%	Definition of smokers “Participants who had “never tried” a cigarette (not “even one or two puffs”) were classified as “never users.” Those reporting age at first use of cigarettes were classified as “ever users” of cigarettes. Exposure Past 30 days e-cigarette use Outcome Participants who reported use of e-cigarettes, but not cigarettes, in the past 30 days were classified as “exclusive e-cigarette	Adjusted model: na 1b) never users of cigarettes Outcome: use of cigarettes in the past 30 days E-cigarette never users: 74/3048 (2.4%) E-cigarette ever users 39/614 (6.4%) 2b) ever users of cigarettes Outcome: use of cigarettes in the past 30 days E-cigarette never users: 27/152 (17.8%) E-cigarette ever users: 187/524 (35.7%) 2b) ever users of cigarettes Outcome: stop using cigarettes (the past 30 days) E-cigarette never users: 12/152 (7.9%) E-cigarette ever users: 69/524 (13.2%)

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	<p>YASS included participants in grades 9 to 12 at baseline</p> <p>Study period T0 2013 to 2014 T1 2014 to 2015</p>	<p><i>Ethnicity, %</i></p> <p><i>Hispanic white:</i> 2329, 37.9 CHS: 758, 48.8 HH: 1505, 47.2 YASS: 66, 4.7</p> <p><i>Non-Hispanic white:</i> 2302, 37.4 CHS: 592, 38.1 HH: 512, 16.0 YASS: 1198, 85.3</p> <p><i>Other</i> 1516, 24.7 CHS: 203, 13.1 HH: 1173, 36.8 YASS: 140, 10.0</p> <p><i>Intention to stop smoking (% yes)</i> NA</p> <p><i>Cigarettes per day:</i> NA</p> <p>Response rate CHS 94.6% HH 93,7% YASS 92%</p>	<p>users,” participants who reported use of cigarettes, but not e-cigarettes, in the past 30 days were classified as “exclusive cigarette users,” and participants who reported use of both products in the past 30 days were considered “dual product users.”</p>	

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<p>Barrington-Trimis, J. L 2016 [15] USA</p>	<p>Design Prospective cohort study – Southern California Health Study (CHS)</p> <p>Time to follow-up Follow-up: 16 month (average).</p> <p>Description of cohort Youths high schools (11th to 12th grade) in California (USA).</p> <p>Questionnaire completed under study staff supervision in school classrooms at baseline. Follow-up of conducted through an online questionnaire, that was sent to all never smoking e-cigarette users, and a sample of matched never smoking never e-cigarette users.</p> <p>Study period January 2014 to March 2016</p>	<p>Population Baseline never-smoking e- cigarette users and randomly selected frequency matched sample of never-smoking never e-cigarette users. Matching by gender, ethnicity and grade. Respondents with missing data were excluded from analysis.</p> <p>N = 426 Never e-cigarette users: N=213 E-cigarette users: N=213</p> <p><i>Age</i> Mean: 17.4 years at baseline.</p> <p><i>Sex</i> F: 41.6% M: 58.4%</p> <p><i>Ethnicity:</i> Non-Hispanic white: 42.3% Hispanic white: 49.0% Other: 8.7%.</p> <p><i>Susceptible to cigarette use</i> No: 73.2% Yes: 26.8%</p> <p><i>Parental education (highest, %):</i></p>	<p>Definition of smokers <i>Outcome categories</i> <i>*Never users: participants who never tried a product (not even 1 or 2 puffs)</i> <i>*Ever users: participants who reported an age at fist use.</i></p> <p><i>Subcategories</i> <i>*Prior users (not used the product in the last 30 days.</i> <i>*Past 30-day users (have used the product during the last 30 days).</i></p> <p>Exposure Ever tried e-cigarettes, even just one or two puffs.</p> <p>Outcome Initiation of cigarette smoking. Past 30 days use of cigarettes</p>	<p>Adjusted model the models were adjusted for gender, race/ethnicity, grade and parental education.</p> <p>1B) Never smokers at T1 Outcome: Smoking at T2: E-cigarette never users: 16/152=10.5% E-cigarette ever users: 59/146=40.4%</p> <p><i>Adjusted model (n=298):</i> Never e-cigarette users: OR:1.0 Ever e-cigarette users: OR: 6.17 (3.30–11.6)</p> <p>B1) Never smokers at T0 Outcome: Smoking at T1, past 30 days users: E-cigarette never users: 4/152=2.6% E-cigarette ever users: 18/144=12.5%</p> <p><i>Adjusted model:</i> Never e-cigarette users: OR:1.0 Ever e-cigarette users: OR: 7.50 (2.41–23.4)</p>

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		<p>≤12th grade: 30.4% College degree or higher: 34.3%</p> <p>Drop-out rate Overall: 30.0% Never e-cigarette users: 61/213 (28.6%) E-cigarette users: 67/213 (31.5%)</p>		
Barrington-Trimis, J. L 2018 b [16] USA	<p>Design Prospective cohort study – Southern California Health Study (CHS)</p> <p>Time to follow-up Follow-up: 1.5 years (mean time to follow-up).</p> <p>Description of cohort Youths from high schools (11–12th grade) in 12 communities in California (USA). Follow-up participation rate: 74.7%</p> <p>Questionnaire completed under study staff supervision in school classrooms. Follow-up conducted through online questionnaire.</p>	<p>Population Never smoking youth (grade 11–12th grade high school students), who completed baseline and follow-up survey.</p> <p>N = 1266 included in the analyses.</p> <p><i>Age</i> Around 18 years at follow-up</p> <p><i>Sex</i> F: 52.4% M: 47.6%</p> <p><i>Ethnicity:</i> Hispanic White: 47.6% Non-Hispanic White: 38.7% Other: 13.7%.</p> <p><i>Parental education:</i></p>	<p>Definition of smokers <i>Never users: never tried a product (cigarettes, hookah, cigars, or pipes), not even 1 puff or 2.</i> <i>Ever users</i></p> <p><i>Subcategories of ever users</i> <i>*Prior users (not used the product in the last 30 days.</i> <i>*Past 30-day users (have used the product during the last 30 days).</i></p> <p>Exposure Ever tried e-cigarettes (even if just one or two puffs) at T0</p> <p>Outcome Initiation of cigarette smoking</p>	<p>Adjusted model NA</p> <p>1B) Non-susceptible never smokers at T0 Outcome: Tried smoking at T1: E-cigarette never users: 75/844=8.9% E-cigarette ever users: 36/96=37.5%</p> <p>1B) Susceptible never smokers at T0 Outcome: Tried smoking at T1: E-cigarette never users: 65/253=25.7% E-cigarette ever users: 30/62=48.4%</p> <p>1B) Never smokers (total) at T0 Outcome: Tried smoking at T1: E-cigarette never users: 140/1097=12.8% E-cigarette ever users: 66/158=41.8%</p>

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	Study period January 2014–July 2016	High school diploma or lower: 29.0% College degree or higher: 30.4% Drop-out rate 25.3%		
Barrington- Trimis, J. L. 2018 a [17] USA	Design Prospective cohort study. Pooled data from three cohorts: Children’s Health Study (CHS), Yale Adolescent Survey Study (YASS) and Happiness and Health (H&H). Time to follow-up 1 year (CHS, H&H). 6 months (YASS). Description of cohorts CHS: schools in 12 communities in California. N= 1 553, response rate 74.0%. H&H: 10 schools in the greater Los Angeles area (California). N= 3,190, response rate 93.9%.	Population 9 th to 12 th grade youth from schools in California and Connecticut (USA) who completed baseline and follow- up surveys. <i>Students that completed the follow-up:</i> N (CHS)=1,553 N (H&H)=3,190 N (YASS)=1,404 <i>Age</i> Around 18 years at T1 <i>Sex</i> F (CHS)= 51.6% F (H&H)= 54.0% F (YASS)= 54.6% <i>Ethnicity:</i> <i>CHS:</i> White: 38.1% Hispanic: 48.8%	Definition of smokers <i>Baseline categories</i> <i>Never users:</i> respondents who had never tried a product, not even 1 puff or 2. <i>*Ever users:</i> having used Exposure E-cigarette user: Never users: never used not even 1 or 2 puffs at T0. Experimenters: ever users but not in the past 30 days. Infrequent users: use 1–2 days in the past 30 days Frequent users: used 3–5 or more times in the past 30 days. Exclusive e-cigarette user: respondents using e-cigarettes, but not cigarettes, in the past 30 days. Outcome Cigarette Smoking in the past 30 days	Adjusted model: All models were adjusted for gender, race/ethnicity, grade, and cohort. 1b) Never smokers at T0 Outcome: Smokers (experimentation) at T1; n(%): E-cigarette never users at T0: 184/4171 (4.4%) x E-cigarette ever users at T0: 129/857 (15.1%) <i>Adjusted model:</i> E-cigarette never users at T0: OR:1.0 E-cigarette ever users at T0: OR: 4.57 (95% CI: 3.56–5.87) 1b) Never smokers at T0 Outcome: Smokers (infrequent) at T1; n (%): E-cigarette never users at T0: 60/4171 (1.4%) E-cigarette ever users at T0: 36/857 (4.2%) <i>Adjusted model:</i> E-cigarette never users at T0: OR:1.0 E-cigarette ever users at T0: OR: 4.27 (95% CI: 2.75–6.62)

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	<p>YASS: 3 high schools in Connecticut. N=1,404, match rate T0–T1 60.0%. Questionnaire completed under study staff supervision in school classrooms. Follow-up conducted through online questionnaire in the CHS cohort.</p> <p>Study period T0: 2013–2014 T1: 2014–2016</p>	<p>Other: 13.1%. <i>H&H:</i> White: 16.0% Hispanic: 47.2% Other: 36.8%.</p> <p>YASS: White: 85.3% Hispanic: 4.7% Other: 10.0%.</p> <p><i>Education:</i> <i>Na</i></p> <p>Drop-out rate CHS= 544/2097 (25.9%) H&H= 207/3397 (6.1%) YASS=936/2,340 (40.0%)</p>	<p><i>*Experimentation (initiation between baseline and follow-up but no use in the past 30 days).</i></p> <p><i>*Infrequent (use of 1–2 in the past 30 days).</i></p> <p><i>*Frequent (use of 3–5 or more in the past 30 days).</i></p>	<p>1b) Never smokers at T0 Outcome: Smokers (frequent) at T1; n(%): E-cigarette never users at T0: 36/4171 (0.9%) E-cigarette ever users at T0: 19/857 (2.2%)</p> <p><i>Adjusted model:</i> E-cigarette never users at T0: OR:1.0 E-cigarette ever users at T0: OR: 3.51 (95% CI: 1.97–6.24)</p> <p>1b) Never smokers at T0 Outcome: Smokers (all pooled) at T1; n(%): E-cigarette never users at T0: 280/4171(4.4%) E-cigarette ever users at T0: 184/857 (15.1%)</p> <p><i>Adjusted pooled model:</i> <i>Ever users</i> E-cigarette never users at T0: OR:1.0 E-cigarette ever users at T0: OR: 4.36 (3.56, 5.34)</p> <p>1b) Never smokers at T0 Outcome: current smokers (pooled) at T1, n (%) E-cigarette never users at T0: 96/4171 (2.3%) E-cigarette ever users at T0: 55/857 (6.4%)</p> <p><i>Adjusted pooled model:</i> <i>Current users</i> E-cigarette never users at T0: OR:1.0</p>

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				<p>E-cigarette ever users at T0: OR: 3.97 (2.80, 5.64)</p> <p>B2) users of cigarettes (in last 30 days) at T0 Outcome: use of cigarettes at T1; n (%) E-cigarette users at T0: 55.8% E-cigarette non-users at T0: 67%</p> <p>B2) Smokers at T0 Outcome: Non-smokers (past 30 days) at T1; n(%): Non-e-cigarette users at T0: 12/27 (44.4%) E-cigarette ever users at T0: 36/108 (33.3%)</p>
<p>Benmarhnia, T. 2018 [18] USA</p>	<p>Design Cohort study – US Population Assessment of Tobacco and Health (PATH), wave 1 and 2. [1]</p> <p>Time to follow-up Follow-up: 1 year.</p> <p>Description of cohort Non-institutionalised US population 12 years of age and older. 45 971 participants from across the USA in wave 1, of which (32 320 were adults and 13 651 were youths aged 12–17).</p>	<p>Population Participants who were 18 years or older, current cigarette smokers and who reported having tried to quit smoking within the last year at the time of follow-up (T1).</p> <p>T0: N=10,851 current smokers T1: N=3,093 current smokers who answered both waves, having tried to quit smoking between T0–T1 and provided complete details.</p> <p>Age</p>	<p>Definition of smokers Current smokers: regularly smoking cigarettes every day or some days</p> <p>Exposure Any use of e-cigarettes during quit attempt (compared to use of other products i.e. NRT/Varenicline/Bupropion/nothing).</p> <p>Outcome Persistent abstinence: ≥30 days abstinence from smoking cigarettes and all tobacco at T1.</p>	<p>Adjusted model: NA</p> <p>B2) Current smokers (T0): Outcome (T1): Quit smoking cigarettes, n(%): E-cigarette user during follow up: 133/769 (17.3%) E-cigarette non-user during follow-up: 49/2601 (1.9%)</p> <p>B2) Current smokers (T0) Outcome (T1): Quit smoking cigarettes (≥30 days) E-cigarette user at T0: 120/756 (15.9%) E-cigarette non-user at T0: 365/2337 (15.6%)</p>

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	<p>Weighted response rate T0 74%.</p> <p>Data collection by in-household audio-computer assisted self-interviews in English and Spanish. Address-based area probability sample design.</p> <p>Study period T0: 2013–2014 T1: 2014–2015</p>	<p>All adults, age 18 or older. 49.1% were younger than 35 years.</p> <p><i>Sex</i> F: 51.2% M: 48.8%</p> <p><i>Ethnicity:</i> White: 64.5% Non-white: 35.5%</p> <p><i>Education</i> 88.7% did not have a college degree</p> <p>Drop-out rate NA. 1990/10851 (18.3%) lost to follow-up at T1 (not necessarily eligible for analysis as information on quit attempt was collected at T1). 56/3149 (1.8%) excluded due to incomplete details on quit attempt, leaving a sample of 3093 for this analysis.</p>		
Berry 2019a [19] USA	Design Cohort study – US Population Assessment of Tobacco and Health (PATH), wave 1–3 [1].	Population Youths aged 12 to 15 years who had never used any tobacco product at wave 1	Definition of smokers Ever smokers: youth who answered yes to the question “Have you ever tried cigarette smoking, even 1 or 2 puffs?”	Adjusted model: Multivariable logistic regression analyses to evaluate the odds of ever and current cigarette use at wave 3 as a function of prior tobacco product use. Model was adjusted for

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	<p>Time to follow-up 2 years</p> <p>Description of cohort Youths aged 12 to 15 years who had never used cigarettes, e-cigarettes, or other tobacco products at wave 1.</p> <p>Study period 2013 to 2016</p>	<p>N=6123</p> <p><i>Baseline (wave 1)</i> Never users 86,4% Prior e-cigarette users 8,6% Prior other users 5.0%</p> <p><i>Age</i> Mean age (SD)= 13.4 (1.2)</p> <p><i>Sex</i> F: 49.5% M: 100—49.5=50.5%</p> <p><i>Ethnicity</i> Non-Hispanic, white 54.1% Non-Hispanic, black 13.9% Hispanic 22.8% Non-Hispanic, other 9.2%</p> <p><i>Education</i> Parent completed college or higher 35.9%</p> <p>Urban residence 80.4% Lives with tobacco user 28.9%</p> <p><i>Intention to stop smoking (% yes)</i> NR</p> <p><i>Cigarettes per day:</i></p>	<p>Exposure E-cigarette use prior to any other tobacco related product between wave 1—3.</p> <p>Outcome Ever cigarette use: Ever tried cigarette smoking, even 1 or 2 puffs</p> <p>Current cigarette use: use of cigarettes in the 30 days prior to wave 3</p>	<p>sex, age, race and ethnicity, parental education, urban or rural residence, living with a tobacco user, noticing tobacco warnings, tobacco advertisement receptivity, ever alcohol use, ever marijuana use, prescription drug abuse, enjoying frightening things, liking new and exciting experiences, preferring unpredictable friends, willingness to smoke in next year, curiosity about cigarettes, and susceptibility to cigarette peer pressure from friends. Predicted probabilities calculated for ever and current cigarette use through marginal standardization using the coefficients produced by regression models.</p> <p>1b) never users of tobacco (tobacco naïve) Outcome: ever use of cigarettes: E-cigarette never users: 201/5290 (3.8%) E-cigarette ever users: 108/527 (20.5%)</p> <p>Association between e-cigarette use and ever use of cigarettes Adjusted OR (95%CI) = 4.09 (2.97 to 5.63); p <0.001</p> <p>1b) never users of tobacco (tobacco naïve) Outcome: current use of cigarettes E-cigarette never users: 74/5290 (1.4%) E-cigarette ever users: 31/527 (5.9%)</p>

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		<p>NR</p> <p>Drop-out rate PATH Study enrolled a total of 11 046 youths</p> <p>Selected cohort based on never use status at wave 1 excluding those missing relevant information (exposure or outcome status)</p>		<p>Association between e-cigarette use and current use of cigarettes Adjusted OR (95%CI) = 2.75 (1.60 to 4.73); p <0.001</p>
<p>Berry et al 2019b [20] USA</p>	<p>Design Prospective cohort – US Population Assessment of Tobacco and Health (PATH), wave 1 and 2. [1]</p> <p>Time to follow-up 1–2 years</p> <p>Setting Non-institutionalised US population 12 years of age and older. 45 971 participants from across the USA in wave 1, of which (32 320 were adults and 13 651 were youths aged 12–17).</p>	<p>Population Current cigarette smokers at T0 aged ≥25 years who were not current e-cigarette users at T0.</p> <p>N=5832 (T0) N= 5124 (T1)</p> <p>Motivation to quit: 45.0 % of sample reported attempting to quit smoking in the year prior to T0.</p> <p>Age: Adults age 25 or older. approximately 75% of the sample younger than 55 years</p> <p>Sex: F: 45%</p>	<p>Definition of smokers Current smokers: Smoking more than 100 cigarettes in their lifetime and currently smoked every day or on some days</p> <p>Former smokers: Current smokers at T0, who reported not smoking every day or some days at T1 and had not smoked any cigarettes in the 30 days prior to T1.</p> <p>Smokers who did not smoke every day or some days but smoked ≥1 cigarette over the past 30 days (n=133) were reclassified as current smokers at T1 and were not considered to have quit smoking cigarettes.</p> <p>Exposure</p>	<p>Adjusted model Logistic regression adjusted for sex, age, race/ethnicity, region, household income, education, living in a smoking household as a child, currently living with a cigarette smoker, frequency and intensity of cigarette use, time to first cigarette in the morning, and prior quit attempt.</p> <p>2b) Current users of cigarettes Outcome: stop use of cigarettes; n=5124 E-cigarette never users: 294/4461 E-cigarette experimental users: 13/358 E-cigarette some-day users: 6/178 E-cigarette everyday users: 40/127 E-cigarette ever_users: 59/663 (8.9%)</p> <p><i>Adjusted model:</i> B2) Current smokers (T0)</p>

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	<p>The weighted retention rate between wave 1 and 2 was approximately 83 % for the cohort.</p> <p>Study period T0: 2013–2014 T1: 2014–2015</p>	<p>M: 55%) <i>Ethnicity:</i> Hispanic: 10.1% Non-Hispanic black: 14.8% Non-Hispanic white: 69.8% Non-Hispanic other: 5.4%</p> <p><i>Education:</i> Less than high school: 16.3% High school: 39.7% Some college: 32.3% Bachelor’s/advanced degree: 11.7%</p> <p>Drop-out rate NA For sample 708 individuals excluded for missing observations: 708/5832=12.1 %</p>	<p>E-cigarette use between T0 and T1.</p> <p>Current e-cigarette users: currently using e-cigarettes experimentally (no ‘regular’ e-cigarette use), on some days or every day</p> <p>Outcome Reduction in cigarette smoking: Substantial reduction in cigarette smoking defined as an average reduction in cigarettes smoked per day of at least 50% between T0 and T1.</p> <p>Cessation of cigarette smoking: ≥30-day abstinence from cigarette smoking.</p>	<p>Outcome: 30-Day cigarette cessation at T1, (n=5,124), AOR (95% CI): Non-e-cigarette user: 1.00 Experimental e-cigarette user: 0.51 (0.26; 1.00) Some-day e-cigarette user: 0.51 (0.17; 1.47) Everyday e-cigarette user: 7.88 (4.45; 13.95) E-cigarette user (Pooled): 2.02 (1.35, 3.03)</p> <p>B2) Current smokers (T0) Outcome: probability of reducing the average daily cigarette use, by at least 50%; E-cigarette never users:727/4461 E-cigarette experimental users: 61/358 E-cigarette some-day users:30/178 E-cigarette everyday users: 62/127 E-cigarette ever users:153/663</p> <p><i>Adjusted model</i> B2) Current smokers (T0) Outcome: At least 50% reduction in average cigarette consumption between T0 and T1, (n=4672), AOR (95% CI) Non-e-cigarette user: 1.00 Experimental e-cigarette user: 1.08 (0.78; 1.48) Some-day e-cigarette user: 1.00 (0.58; 1.74) Everyday e-cigarette user: 5.70 (3.47; 9.35) E-cigarette user (Pooled): 1.59 (1.24, 2.02)</p>

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Best 2018 [21] UK	<p>Design Prospective cohort survey, (DISPLAY-study)</p> <p>Time to follow-up follow-up 1 year</p> <p>Description of cohort The DISPLAY study is a 5-year multi-modal study designed to measure the impact of UK legislation to ban point-of-sale displays of tobacco products on the smoking attitudes and behaviours of young people. Annual school survey conducted in four Scottish secondary schools located in communities that differ in terms of their socioeconomic and urban–rural profiles.</p> <p>Study period Surveys administered T0 = 2015 T1 = 2016</p>	<p>Population The data presented here are from the 2015 and 2016 surveys which included all pupils (aged 11–18) in four Scottish high schools.</p> <p>N= 2125</p> <p><i>Age</i> age 11–18, mean age= na</p> <p><i>Sex, %</i> F: na; M: na</p> <p><i>Ethnicity, %</i> Na</p> <p><i>Intention to stop smoking (% yes)</i> NR</p> <p><i>Cigarettes per day:</i> NR</p> <p>Response rate T0 87% T1 70.4%</p> <p>Analysis was restricted to baseline 'never smokers'</p>	<p>Definition of smokers Never smoker answered no to “Have you ever smoked cigarettes or hand-rolled cigarettes (roll-ups), even if it is just one or two puffs?”</p> <p>Exposure Ever use of e-cigarettes (at least once or twice) at T0</p> <p>Outcome Ever smoking</p>	<p>Adjusted model: logistic regression model adjusted for smoking susceptibility, having friends who smoke, family members' smoking status, age, sex, family affluence score, ethnic group and school.</p> <p>1b) never users of cigarettes (n= 2125) Outcome: use of cigarettes E-cigarette never users: 249/1942 (12.8%) E-cigarette ever users: 74/183 (40.4%)</p> <p>Association between e-cigarette use and ever use of cigarettes Adjusted OR (95%CI) = 2.42 (1.63 to 3.60)</p>

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		(n=3001/3807), 2125 of whom were available to follow-up (70.8%)		
Biener 2015 [22] USA	<p>Design Prospective cohort</p> <p>Time to follow-up 2 years</p> <p>Description of cohort A population-based survey of adults residing in the Dallas/Fort Worth metropolitan area, Texas, and Indianapolis, Indiana metropolitan areas. The study was carried out in 2011/2012, was designed to assess receptivity to snus.</p> <p>A dual-frame, address-based sample with data collected via telephone interviews and a small supplementary mail survey.</p> <p>N=5,155, of which 1,675 were smokers interviewed by</p>	<p>Population Adult cigarette smokers who agreed to be contacted for follow-up.</p> <p>Cigarette smoking adults in two US metropolitan areas, Dallas/Fort Worth, Texas and Indianapolis, Indiana metropolitan. Subset of respondents in a population-based study.</p> <p><i>Motivation to quit:</i> For 52.6% of e-cigarette users the most important reason for starting to use E-cigarettes was the hope that e-cigarettes would help them quit smoking.</p> <p>N= 1374 (Baseline) N=695</p> <p>Age: 18–65 years Sex: Men: 57.3%; Women: (42.7%)</p> <p><i>Ethnicity:</i></p>	<p>Definition of smokers: All respondents reported being cigarette smokers at baseline</p> <p>Exposure Reported e-cigarette use at T0, grouped into three categories: Intensive user: daily use for at least 1 month Intermittent user: used more than once or twice but not daily for a month or more. Non-user/tirer: non-use or at most once or twice.</p> <p>Outcome Smoking cessation defined as abstinence from cigarettes for at least 1 month</p>	<p>Adjusted model: adjusted for gender, age, ethnicity, education, heavy smokers and electronic cigarette use</p> <p><i>All data are from adjusted models</i></p> <p>B2) Current smokers (T0) Outcome: Quit smoking cigarettes (>=30 days) (T1), OR (95% CI), (n=695) Non-e-cigarette use/trial: 1.00 Intermittent e-cigarette use: 0.31 (0.04; 2.80) Intensive e-cigarette use: 6.07 (1.11; 33.18) E-cigarette user (Pooled): 1.80 (0.49; 6.67)</p>

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	<p>telephone. Of these N=1,374 gave permission to be re-contacted.</p> <p>Study period T0: 2011/2012 T1: 2014</p>	<p>White/non-Hispanic: 82.6% Minority: 17.5%</p> <p><i>Education:</i> <4 years of college:76.2% ≥4 years of college or bachelor’s degree: 23.8%</p> <p>Drop-out rate N=679/1,374 (49.4%) between T0 and T1</p>		
<p>Bold 2018 [23] USA</p>	<p>Design Prospective cohort</p> <p>Time to follow-up 1+1 year</p> <p>Setting School based survey in three high schools in Connecticut USA. Data were collected by interviews, using a structured questionnaire covering cigarette use</p> <p>Study period T1: fall 2013 T2: spring 2014 T3: spring 2015</p>	<p>Population High school students in three public schools in Connecticut. Out of 1408 students, N= 1098 were matched from T0 to T1, and N = 972 were matched from T1 to T2.N = 808 (matched across all 3 waves)</p> <p><i>Age:</i> Mean age (SD): 15.04 (0.90) years <i>Sex:</i> Men: 380 (47%); Women: 428 (53%)</p> <p><i>Ethnicity:</i> White 708 (87.6%), Asian 46 (5.7%), Hispanic and/or Latino 41 (5.1%), Black or African</p>	<p>Definition of smokers Ever smokers: tried a cigarette, even just 1 or 2 puffs Current users: smoking a cigarette (number of days) in the past 30 days (even just 1 or 2 puffs)</p> <p>Exposure E-cigarette-use at prior wave</p> <p><i>Ever use:</i> Measured at each wave by asking, “Have you ever tried an e-cigarette?” (yes or no)</p> <p><i>Current use:</i> Past months use (yes/no). Measured at each wave by asking, “How many days out of the past 30 days did you use e-cigarettes?”</p>	<p>Adjusted models: adjusted for sex, race/ethnicity, socioeconomic status, and use of other tobacco products</p> <p>B1) Non-smokers at T0: Outcome: Cigarette use at T1, AOR, (95% CI): E-cigarette non-use at T0: 1.00 E-cigarette current use at T0: 7.08 (2.34; 21.42)</p> <p>B1) Non-smokers at T1: Outcome: Cigarette use at T2AOR, (95% CI): E-cigarette non-use at T2: 1.00 E-cigarette current use at T2: 3.87 (1.86; 8.06)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
		<p>American 21 (2.6%), American Indian, Alaskan Native 8 (1.0%), Native Hawaiian or Pacific Islander 6 (0.7%), Middle Eastern 7 (0.9%) and other 3 (0.4%)</p> <p><i>Parental education: Na</i></p> <p>Drop-out rate 600/1408=42.6% from T0 to T2</p>	<p>Outcome Cigarette use</p> <p><i>Primary outcomes of interest were past-month use (1 = yes, 0 = no) of cigarettes and e-cigarettes at each wave.</i></p>	
<p>Brose et al 2015 [24] United Kingdom</p>	<p>Design Prospective cohort</p> <p>Time to follow-up 1 year</p> <p>Description of cohort Web-based longitudinal survey of a national general population sample in the UK. 23 785 participants screened for smoking status. 6165 of which had smoked in the past year. Survey completed by 4064 smokers. Follow-up completed by 1759, response-rate 43.3%.</p>	<p>Population Adult smokers, who had smoked in the past year.</p> <p>N=1,656 population in the cessation analysis N= 1,042 (smokers initiating e-cigarette use after T0 primary reduction analysis</p> <p><i>Mean age (SD): 45.7 (15.3) years</i> <i>Sex: Men: 56.5%; Women: 43.5%</i></p> <p><i>Ethnicity: Not reported</i></p> <p><i>Education:</i> <i>No higher education:64.9%</i> <i>Some higher education: 35.1%</i></p>	<p>Definition of smokers Current cigarette smoker at T0</p> <p>Exposure Daily or non-daily e-cigarette use The primary reduction analysis included smokers using e-cigarettes at T1 but not T0.</p> <p>Outcome Smoking cessation: change from being a smoker at baseline to be an ex-smoker at follow-up.</p> <p>Smoking reduction: Substantial reduction was defined as a reduction by at least 50% from baseline cigarettes smoked per day (CPD) to follow-up CPD</p>	<p>Adjusted model: Adjusted for age, gender, education. baseline variables, dependence (strength of urges to smoke) and non-cigarette nicotine intake (at baseline for cessation and at time of follow-up for reduction).</p> <p>B2) Current smokers (T0) (n=1656) Outcome: Smoking cessation at T1, OR (95% CI) <i>Numbers in each category, n (%):</i> E-cigarette non-use (T1): 168/1307 (12.9%) E-cigarette <i>non-daily</i> use: 25/263 (9.5%) E-cigarette <i>daily</i> use: 7/86 (8.1%)</p> <p><i>Unadjusted model:</i> E-cigarette non-use: 1.00 E-cigarette <i>non-daily</i> use: 0.71 (0.46; 1.11), p= 0.13 E-cigarette <i>daily</i> use: 0.60 (0.27; 1.32) p=0.21</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>Study period T0: 2012 T1:2013</p>	<p>Drop-out rate Non-responders between T1 and T2: 2305/4064= 56.7% Excluded from cessation analysis: 245/1,759 = 13.9% Excluded from primary reduction analysis: 859/1,759=48.8%</p>		<p><i>Adjusted model:</i> E-cigarette non-use: 1.00 E-cigarette <i>non-daily</i> use: 0.77 (0.49;1.21), p= 0.25 E-cigarette <i>daily</i> use: 0.62 (0.28;1.37) p=0.24 E-cigarette any use: 0.73 (0.48;1.09) p=0.13</p> <p>B2) Current smokers (T0) (n=1,042) Outcome: Smoking reduction (≥50% in CPD), OR (95% CI) <i>Numbers in each category, n (%):</i> E-cigarette non-use (T1): 44/769 (5.7%) E-cigarette <i>non-daily</i> use: 11/201 (5.5%) E-cigarette <i>daily</i> use: 10/72 (13.9%)</p> <p><i>Unadjusted model:</i> E-cigarette non-use: 1:00 E-cigarette <i>non-daily</i> use: 0.96 (0.48; 1.89), p= 0.90 E-cigarette <i>daily</i> use: 2.66 (1.28; 5.54), p=0.009</p> <p><i>Adjusted model:</i> E-cigarette non-use: 1.00 E-cigarette <i>non-daily</i> use: 0.85 (0.43; 1.71), p= 0.66 E-cigarette <i>daily</i> use: 2.49 (1.14; 5.45), p=0.022 E-cigarette (pooled): 1.35 (0.81; 2.25)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
Buu 2018 [25] USA	<p>Design Prospective cohort – US Population Assessment of Tobacco and Health (PATH), wave 1 and 2. [1]</p> <p>Time to follow-up 1 year</p> <p>Description of cohort Non-institutionalised US population 12 years of age and older. 45 971 participants from across the USA in wave 1, of which (32 320 were adults and 13 651 were youths aged 12–17)[1].</p> <p>Study period T0: 2013–2014 T1: 2014–2015</p>	<p>Population Adult subset of PATH cohort, consisting of exclusive combustible cigarette users. N=2,727</p> <p><i>Age (years):</i> 18–24: 6.7% 25–34: 16.7% 35–44: 19.7% 45–54: 24.5% ≥55: 32.4%</p> <p><i>Sex:</i> F: 58.5%; M:41.5%</p> <p><i>Ethnicity:</i> Non-Hispanic White: 70,0% Non-Hispanic Black: 13.6% Hispanic: 12.5% Other: 5.9%</p> <p><i>Frequency of smoking in past 30 days (mean (SD)):</i> E-cig non-users: 24.66 (0.36) E-cig users:27.84 (0.51)</p> <p><i>Quantity of smoking in past 30 days (mean (SD)):</i> E-cig non-users: 12.45 (0.28) E-cig users:14.68 (0.65)</p>	<p>Definition of smokers Exclusive combustible cigarette users who had smoked cigarettes in past 12 months at T0; had smoked at least 100 or more cigarettes in their lifetime at T0; did not use any other tobacco products or e-cigarettes in past 12 months at T0; and did not use other tobacco products except combustible or e-cigarettes in past 12 months at T1.</p> <p>Exposure <i>E-cigarette users at T1:</i> e-cigarette use some days or every day in the past 30 days.</p> <p>Outcome Combustible cigarette use</p> <p><i>Frequency:</i> The number of days, in the last 30 days, when cigarettes were smoked</p> <p><i>Quantity:</i> In the last 30 days, the average number of cigarettes smoked per day the days when cigarettes were smoked.</p>	<p>Adjusted model: The statistical model for each of the outcome variables of cigarette use at Wave 2, was adjusted for corresponding variable at T0, age, gender, ethnicity/race, education level, employment, early onset status of smoking (<18y), lifetime alcohol use, lifetime marijuana use.</p> <p>B2) Current smokers (T0) (n=2,727) Outcome: Smoking frequency during the last 30 days, mean (SD): E-cigarette non-users (n=2,467): 23.30 (0.32) E-cigarette users (n=260): 21.95 (0.84)</p> <p>B2) Current smokers (T0) (n=2,727) Outcome: Smoking quantity during the last 30 days, mean (SD): E-cigarette non-users (n=2,467): 11.56 (0.27) E-cigarette users (n=260): 11.03 (0.67)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
		<p><i>Education:</i> Less than high school: 18.5% High school: 36.6% College and above: 44.8%</p> <p>Drop-out rate Na</p>		
<p>Chaffee 2018 [26,27] USA</p>	<p>Design Prospective cohort – US Population Assessment of Tobacco and Health (PATH), wave 1 and 2. [1]</p> <p>Time to follow-up 1 year</p> <p>Description of cohort Non-institutionalised US population 12 years of age and older. 45 971 participants from across the USA in wave 1, of which (32 320 were adults and 13 651 were youths aged 12–17). [1]</p> <p>The population in this study (PATH youth) was made up of adolescents (up to 2 per household)</p>	<p>Population Adolescents experimental smokers, 12–17 years. Only participants with known smoking status at follow-up were included.</p> <p>N=1,295 (With known smoking data at follow-up)</p> <p><i>Age:</i> 12–17 years, mean 15.5y</p> <p><i>Sex:</i> F: 48.3%; M: 51.7%</p> <p><i>Ethnicity:</i> Na</p> <p><i>Parental education:</i> Na</p> <p>Drop-out rate NA</p>	<p>Definition of smokers Experimental smoker: smoked a cigarette (≥1 puff) but not yet smoked 100 cigarettes</p> <p>Exposure <i>Never e-cigarette use</i> <i>Ever e-cigarette use:</i> At least tried. <i>Former e-cigarette use:</i> Non past 30 days use. <i>Past 30 days e-cigarette use</i></p> <p>Outcome <i>Established smoking:</i> Having smoked ≥100 cigarettes.</p> <p><i>Current smoking:</i> Having smoked during the past 30 days.</p> <p><i>Current established smoking</i></p>	<p>Adjusted models: Progression from cigarette experimentation to established smoking, according to baseline e-cigarette use, OR (95% CI), A) Unadjusted, B) adjusted for sex, age, and race and/or ethnicity</p> <p>B2) Experimental smokers (T0) (n=1295) Outcome: Established smoking (T1), OR (95% CI): <i>A, Unadjusted model:</i> E-cigarette never: 1:00 E-cigarette ever: 2.23 (1.55; 3.21)</p> <p><i>B, Adjusted model:</i> E-cigarette never: 1:00 E-cigarette ever: 2.07 (1.41; 3.04)</p> <p>B2) Experimental smokers (T0) (n=1295) Outcome: Current smoking (T1), OR (95% CI): <i>A, Unadjusted model:</i> E-cigarette never: 1:00 E-cigarette ever: 1.75 (1.35–2.27)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>whose parents were selected for the PATH adult sample. Enrolled: N=13,651, retention rate 87.9%</p> <p>The survey was conducted by in-home in-person-computer assisted interviews</p> <p>Study period T0: 2013–2014 T1: 2014–2015</p>		Having smoked ≥100 cigarettes and having smoked during the past 30 days.	<p><i>B, Adjusted model:</i> E-cigarette never: 1:00 E-cigarette ever: 1.65 (1.26; 2.15)</p> <p>B2) Experimental smokers (T0) (n=1295) Outcome: Current established smoking (T1), OR (95% CI): <i>A, Unadjusted model:</i> E-cigarette never: 1:00 E-cigarette ever: 2.43 (1.55–3.80)</p> <p><i>B, Adjusted model:</i> E-cigarette never: 1:00 E-cigarette ever: 2.23 (1.39–3.59)</p>
Chen 2018 [28] USA	<p>Design Prospective cohort – US Population Assessment of Tobacco and Health (PATH), wave 1 and 2. [1]</p> <p>Time to follow-up 1 year</p> <p>Description of cohort Non-institutionalised US population 12 years of age and older. 45 971 participants from across</p>	<p>Population Young adult (aged 18–34) cigarette smokers at T0 and current e-cigarette users at T1</p> <p>N=4,645 (T0)</p> <p>Cigarette smoking frequency*, % (95% CI): Some days: 29.2 (27.3, 31.1) Every day: 70.8 (69.0, 72.7)</p>	<p>Definition of smokers Smoking at least “some days” and having smoked at least 100 cigarettes in their lifetime at T0</p> <p>Quitter: respondents who indicated smoking cigarettes at T0 but not T1</p> <p>Reducer: those classified as “everyday smokers” at T0 but “some-day” smokers at T1.</p> <p>Exposure</p>	<p>Adjusted model; adjusted for: age group, gender, past year quit attempts and cigarette dependence</p> <p>B2) Smokers at T0 (n=4,645) Outcome: Reducer/Quitter at T1, OR (95% CI): <i>Unadjusted model:</i> Non-E-cigarette Use: 1.00 E-cigarette Use with TM Flavors: 0.8 (0.6; 1.2) E-cigarette Use with One NTM Flavors: 1.9 (1.4; 2.7) E-cigarette Use with Multiple NTM Flavors: 2.0 (1.6; 2.5)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>the USA in wave 1, of which (32 320 were adults and 13 651 were youths aged 12–17). [1]</p> <p>Survey, structured questionnaire, audio computer-assisted self-interviews</p> <p>Study period T0: 2013–2014 T1: 2014–2015</p>	<p>Quit attempt in the past year*, % (95% CI): Yes: 25.4 (23.8, 27.1) No: 74.6 (72.9, 76.2=</p> <p><i>Age*</i>, % (95% CI): 18–24 years: 39.1% (37.0, 40.4) 25–34 years: 60.9% (59.6, 63.0)</p> <p><i>Sex*</i>, % (95% CI): F: 42.9 (41.1; 44.7) M: 57.1 (55.4; 58.9)</p> <p><i>Ethnicity*</i> % (95% CI): Non-Hispanic Whites: 62.4 (60.7; 64.2) Non-Hispanic Blacks: 13.7 (12.5; 15.0) Hispanics: 16.8 (15.5; 18.1) Non-Hispanics Others: 7.1 (6.0; 8.3)</p> <p><i>Education*</i>, % (95% CI): Below high school: 25.4 (24.0; 26.9) High school: 27.8 (26.2; 29.5) Above high school: 46.8 (45.1; 48.5) *weighted values</p> <p>Drop-out rate</p>	<p>E-cigarette use (defined as using e-cigarettes “some days” or “everyday”) at T1</p> <p>E-cigarette flavors used at T1: Tobacco/Menthol (TM) Non-Tobacco/non-Menthol (NTM)</p> <p>Outcome Quitters or reducers of cigarette smoking</p> <p>Quitters: smoking at least some days at T0 but not smoking at T1</p> <p>Reducers: smoking every day at T0 but some days at T1.</p> <p>Consistent smokers: did not change smoking status or increased smoking frequency.</p>	<p>E-cigarette user (Pooled): 1.53 (1.31, 1.78)</p> <p><i>Adjusted model:</i> Non-E-cigarette Use: 1.00 E-cigarette Use with TM Flavors: 1.2 (0.8; 1.8) E-cigarette Use with One NTM Flavors: 2.5 (1.6; 3.8) E-cigarette Use with Multiple NTM Flavors: 3.0 (2.1; 4.3) E-cigarette user (Pooled): 2.13 (1.69, 2.68)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
		The young adult retention rate of PATH between T0 and T1 was 80.5%		
Conner 2019 [29] UK	<p>Design cluster randomised controlled trial (post-hoc analysis)</p> <p>Time to follow-up 24 months</p> <p>Description of cohort Students at 45 schools in England. Students at intervention schools read antismoking messages and formed implementation intentions about how to refuse offers of cigarettes on eight occasions. Students at control schools formed implementation intentions in relation to completing homework</p> <p>Study period T0: September to December 2014</p>	<p>Population Never smokers at baseline adolescent never smokers aged 13–14 years at baseline</p> <p>N=3994</p> <p><i>Age</i> Mean age (SD)= na</p> <p><i>Sex</i> F: 52.3%; M: 47.7%</p> <p><i>Ethnicity</i> White 688 (17.2%) Non-white 3306 (82.8%)</p> <p><i>Family members smoke</i> 2 492 (62.4%)</p> <p><i>Intention to stop smoking (% yes):</i> NR</p> <p><i>Cigarettes per day:</i> See definition of smokers</p> <p>Drop-out rate 96% of the 3994 never smokers in the sample would have been available for analysis under the</p>	<p>Definition of smokers Never smokers answered “I have never smoked”</p> <p><i>Ever smokers</i> marked any other response: “I have only tried smoking once; I used to smoke sometimes, but I never smoke cigarettes now; I sometimes smoke cigarettes now, but I don’t smoke as many as one a week; I usually smoke between one and six cigarettes a week and I usually smoke more than six cigarettes a week”</p> <p><i>Regular smokers:</i> marked “I usually smoke between one and six cigarettes a week and I usually smoke more than six cigarettes a week”</p> <p><i>Recent tobacco smoking:</i> any tobacco-use in the last 30 days.</p> <p>Exposure At least tried e-cigarettes once or twice.</p> <p>Outcomes</p>	<p>Adjusted model: Hierarchical linear models, HLM, controlling for gender, ethnicity, individual/ school level socioeconomic status, friends and family smoking, impulsivity and intentions, attitudes, norms, perceived behavioural control.</p> <p>B1) never users of combustible tobacco Outcome: ever use of combustible tobacco product: E-cigarette never users: 492/3 235 E-cigarette ever users: 322/759</p> <p><i>Association between e-cigarette use and ever smoking cigarettes</i> Unadjusted OR (95%CI) = 4.03 (3.33 to 4.88) Adjusted OR (95%CI) = 2.78 (2.20 to 3.51)</p> <p>B1) never users of combustible tobacco Outcome: recent use of combustible tobacco product: E-cigarette never users: 226/3236 E-cigarette ever users: 161/758</p> <p><i>Association between e-cigarette use and any recent tobacco smoking</i> Unadjusted OR (95%CI) = 3.38 (2.72 to 4.21)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	T1: September to December 2016	traditional listwise deletion method across variables.	Ever use of combustible tobacco product Recent use of combustible tobacco product (at least once in past 30 days). Regular use of combustible tobacco product.	Adjusted OR (95%CI) = 2.17 (1.76 to 2.69) B1) never users of combustible tobacco Outcome: regular use of combustible tobacco product: E-cigarette never users: 47/3235 E-cigarette ever users: 37/759 <i>Association between e-cigarette use and regular cigarette smoking</i> Unadjusted OR (95%CI) = 3.60 (2.35 to 5.51) Adjusted OR (95%CI) = 1.27 (1.17 to 1.39)
Conner, M. 2017 [30,31] UK	Design Prospective cohort study Time to follow-up Follow-up: 12-month Description of cohort Data were collected as part of a 4-year cluster randomised controlled trial. Data from the 20 control schools are reported here. The study was carried out in England Data collection using a self-report questionnaire Study period	Population Adolescents aged 13–14 years at baseline Total N= 2,836 (complete data) Never used cigarettes N= 1,726 <i>Age (years)</i> Mean (SD) = 13.18 (0.39) <i>Sex</i> F: 48.0%; M: 52.0% <i>Ethnicity:</i> Na <i>Parental education:</i> Na Drop-out rate At T0 2,196 reported never having smoked, 1,726 of which	Definition of smokers Adolescents ticked one of the following: 'I have never smoked; I have only tried smoking once; I used to smoke sometimes, but I never smoke cigarettes now; I sometimes smoke cigarettes now, but I don't smoke as many as one a week; I usually smoke between one and six cigarettes a week; and I usually smoke more than six cigarettes a week' Exposure Self-reported trial or use (once or twice; sometimes (more than once a month but less than once a week); often (more than once a week)) of e-cigarettes at T0.	Adjusted model: Adjusted for percentage of children at a school eligible for free school meals, sex, family smoking, friends smoking, health cognition about smoking, norms, perceived behavioural control, intention to smoke, attitudes towards smoking and self- efficacy. B1) Never users of cigarettes (T0), n=1726 Outcome: Ever use of cigarettes at follow-up (T1) E-cigarette never users, n=1383: 124/1383 (9.0%) E-cigarette ever users, n=343: 118/343 (34.4%) <i>Unadjusted model; OR (95%CI):</i> E-cigarette never users: 1.00 E-cigarette ever users: 5.38 (4.02 to 7.22); p <0.001

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	T0: 2014 T1: 2015	could be matched across timepoints (78.6%). Lost to follow-up 21.4 %.	Dichotomised into ever use and never use. Outcome Self-reported trial or use of cigarettes at follow-up, validated against breath carbon monoxide levels. According to authors the method of validation is a reliable way to detect regular but not occasional smoking	<i>Adjusted model; OR (95%CI):</i> E-cigarette never users: 1.00 E-cigarette ever users: 4.06 (2.94 to 5.60); p <0.001 B2) Baseline once or used to use cigarettes (T0), n=318 Outcome: Increased use of cigarettes at (T1), OR (95%CI): <i>Unadjusted model:</i> E-cigarette never users: 1.00 E-cigarette ever users: 2.16 (1.01 to 4.62); p =0.046 <i>Adjusted model:</i> E-cigarette never users: 1.00 E-cigarette ever users: 1.89 (0.82 to 4.33); p =0.13
Curry 2018 [32] USA	Design Longitudinal observational study (secondary analysis of an RCT) Time to follow-up 3, 6, and 12 months (T1) Description of cohort: Ohio Appalachian adults who wanted to quit	Population Participants were ≥ 18 years old, self-reported daily use of combustible tobacco, resident of a participating county, no contraindication to NRT, if female, non-pregnant, willing to participate in study protocol; and provision of written informed consent. Only participants who provided	Data collection Survey Definition of smokers Any kind of tobacco in the past 7 days. Exposure <i>E-cigarette use post-treatment:</i> Self-reported past 7-day e-cigarette use (every day or some days) Outcome	Adjusted model: NA B2) Smokers at T1, n=217 Outcome: Tobacco abstinence at 12 months follow-up, % (SE): No e-cigarette post-treatment use, 33/174: 19% (3.0) E-cigarette post-treatment use, n=2/43: 4.7% (3.2) Outcome: Tobacco abstinence at 12 months follow-up, OR (95% CI):

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>smoking and were enrolled in a community wide treatment trial.</p> <p>Six counties each were randomly assigned to one of two treatment conditions: face-to-face counseling or referral to the Ohio Tobacco Quitline. Both treatment conditions included standardised cognitive-behavioral counseling and free NRT (daily 21 mg patch for 8 weeks).</p> <p>As there was no statistically significant difference in 12-month abstinence by treatment condition ($p = .29$) and use of e-cigarettes was similar between treatment conditions ($p = .49$), data were combined for this secondary analysis. Data collection by survey.</p>	<p>complete answers on tobacco use at T0 were included.</p> <p>N= 217</p> <p>Age 18-24: 3.3 % 25-54: 60.0 % Age \geq55: N36.9 %</p> <p>Sex: Female: 70.0%; Male: 30.0%</p> <p>Ethnicity: White: 94.9 % ; Other: 5.1 %</p> <p>Education: Less than high school: 10.2% More than high school: 55.0%</p> <p>Drop-out rate Na</p>	<p>Tobacco abstinence: self-report of no tobacco use, in the past 7 days as confirmed by a saliva cotinine concentration of <15 ng/mL, or by expired air carbon monoxide level of <8 parts per million if participant was using NRT or e-cigarettes.</p>	<p>No e-cigarette post-treatment use: 1.00 E-cigarette post-treatment use: 0.208 (0.048; 0.906)</p> <p>Stratified by baseline e-cig use B2) Smokers at T1, n=217. Outcome: Tobacco abstinence at 12 months follow-up, % (SE):</p> <p>No baseline use, No e-cigarette post-treatment use, n=150: 19.3% (3.2) Baseline use, No e-cigarette post-treatment use, n=24: 16.7% (7.6) No baseline use, E-cigarette post-treatment use, n=28: 3.6% (3.5) Baseline use, E-cigarette post-treatment use, n=15: 6.7% (6.4)</p> <p>Outcome: Tobacco abstinence at 12 months follow-up, OR (95% CI):</p> <p>No baseline use, No e-cigarette post-treatment use: 1.00 Baseline use, No e-cigarette post-treatment use: 0.834 (0.265; 2.629) No baseline use, E-cigarette post-treatment use: 0.155 (0.020; 1.184) Baseline use, E-cigarette post-treatment use: 0.298 (0.038; 2.359)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>Study period 2010–2013, the secondary analysis includes a subset of participants enrolled 2012–2013</p>			
<p>Doran, N. 2017 [33] USA</p>	<p>Design Prospective longitudinal study</p> <p>Time to follow-up 3, 6, 9 and 12 (T1) months</p> <p>Description of cohort Cigarette smokers (at least monthly) for the last 6 months, never smoking daily for ≥30 days. Participants were California residents (USA). Participants recruited via online advertisements. Participants received compensation Compensated. Young adult non-daily cigarette smokers in California</p> <p>Study period</p>	<p>Population 18–24-years old, non-daily cigarette smokers. Eligibility criteria included smoking cigarettes ≥ monthly for ≥ the past six months, never smoking daily for ≥30 days, and California residency. Participants were required to have completed baseline survey.</p> <p>N= 391</p> <p><i>Age (years):</i> M (SD) = 20.5 (1.8)</p> <p><i>Sex</i> F= 48%; M= 52%</p> <p><i>Ethnicity</i> Non-Hispanic Caucasian: 45% Asian American: 20% Hispanic/Latino: 26%</p>	<p>Definition of smokers Self-reported use of cigarettes.</p> <p>Exposure Self-reported trial or use of e-cigarettes, assessed all timepoints.</p> <p>For modelling: e-cigarette use was a binary, time-varying predictor indicating whether participants reported any e-cigarette use at each timepoint and was lagged by one timepoint to predict cigarette outcomes at the next timepoint.</p> <p>Outcome Self-reported trial or use of cigarettes at T1.</p> <p><i>Cigarette quantity:</i> average number of cigarettes smoked per day</p> <p><i>Cigarette frequency:</i> Number of days when cigarettes were smoked</p>	<p>Adjusted model: All data adjusted for age, sex, student status, significant other who smoked, race/ethnicity, smokers in participants' households, intent to quit cigarettes in the next year assessment day, pre-baseline cigarette and e-cigarette frequency, time, time 2, and their interactions with predictors.</p> <p>B2) Non-daily smokers at T1 Outcome: Cigarette quantity during follow-up (one time point after e-cigarette measurement): Non-use of e-cigarettes (any time-point): 1.00 Use of e-cigarettes (any time-point): IRR* = 1.40 (1.17–1.68). Group difference: z = 3.60; p < 0.001</p> <p>B2) Non-daily smokers at T1 Outcome: Cigarette frequency during follow-up (one time point after e-cigarette measurement):</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	March 2015 and December 2016.	Other or from multiple backgrounds: 9% <i>Education: Na</i> Drop-out rate Nineteen participants (5%) were missing data at 9 and 12 months and were considered to have dropped out.	Cigarette and e-cigarette outcome were assessed on 9 consecutive days for 3, 6- and 9-months follow-up, T0 and T1 assessments were done on 14 consecutive days.	Non-use of e-cigarettes (any time-point): 1.00 Use of e-cigarettes (any time-point): IRR* = 1.18 (1.03–1.37) Group difference: z = 2.33; p=0.020 <i>Those who used e-cigarettes at one timepoint smoked 40% more cigarettes, and used cigarettes on 18% more days, at the next timepoint.</i> *IRR = Incidence Rate Ratio
East 2017 [34] United Kingdom	Design Prospective cohort – Action on Smoking and Health Great Britain Youth longitudinal survey Time to follow-up 4-5 months Description of cohort Sample drawn from Young people 11–18- years old (online panel volunteers from the general public, quotas on age, gender and region to ensure representativeness).	Population Young people (11–18 years). N= 2,916 (completed baseline survey) N= 1,469 (completed respondent at follow-up) N=1,152 (Final sample), of whom 923 (80%) were baseline never smokers and 1,020 (89%) were baseline never e-cigarette users. <i>Age: 11–18 years</i> <i>Sex:</i> F: 53.8%; M: 46.2%	Definition of smokers <i>Never smoker:</i> Never smoked cigarettes, not even a puff <i>Ever smoker: not never smokers</i> <i>Initiated smoking:</i> Never smokers at baseline but ever smokers at follow-up Respondents were classified using the same procedure for e-cigarette use Exposure Ever e-cigarette use	Adjusted for: Age, gender, school performance, problem behaviour, monthly alcohol use, smoking susceptibility, e- cigarette susceptibility, some friends smoke, some friends use e-cigarettes, at least one parent smokes (yes, no), at least one parent uses e-cigarettes, sibling(s) smoke, sibling(s) use e- cigarettes, public approve of smoking, and public approve of e-cigarettes. For school performance, problem behaviour, monthly alcohol use, and smoking and e-cigarette susceptibility, “Don’t know” and “Prefer not to say” responses were excluded from all analyses. B1) Never cigarette smokers (T0) (n=923) Outcome: smoking initiation (T1); n(%)

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>Online survey with e-mail invitation.</p> <p>Study period T0: April 2016 T1: August–October 2016</p>	<p><i>Ethnicity:</i> Na</p> <p><i>Parental education:</i> Na</p> <p>Drop-out rate 1,764 lost between baseline and follow up 1,764/2,916=60.4 %</p> <p><i>Excluded:</i> 317 respondents (22%) who had never heard of e-cigarettes and selected “don’t know” or “prefer not to say” to some questions</p>	<p>Outcome at time T2 Smoking initiation: never smoker at baseline but ever smoker at follow-up</p>	<p>Never e-cigarette use: 74/902 (8.2%) Ever e-cigarette use: 11/21 (52.6%)</p> <p><i>Unadjusted model; OR (95% CI):</i> Never e-cigarette use: 1.00 Ever e-cigarette use: 12.41 (4.53; 33.99)</p> <p><i>Adjusted model; OR (95% CI):</i> Never e-cigarette use: 1.00 Ever e-cigarette use: 10.57 (3.33; 33.50)</p>
<p>Flacco 2019 [35] Italy</p>	<p>Design Observational study, 4 year follow up, contact via phone or internet</p> <p>Time to follow-up 4 years</p> <p>Description of cohort Participants were recruited via general practitioners, e-cigarette shops, internet advertisements, and social networks</p> <p>Study period</p>	<p>Population Adults between the ages of 30 and 75 who have smoked tobacco (only), e-cig (only), or both (dual users) for at least 6 months.</p> <p>N = 915 at 4-year-followup 471 tobacco smokers 228 e-cig smokers 216 dual users</p> <p><i>Age</i> Mean (SD)= 48.4 (na)</p> <p><i>Sex, %</i> F: 43.7%; M: 56.3%</p>	<p>Definition of smokers Tobacco smokers smoke ≥ 1 cigarette/day</p> <p>E-cig users inhale ≥ 50 puffs weekly from any type of e-cig</p> <p>Dual users use both tobacco and e-cig as defined above. Smoking abstinence is defined as complete abstinence from tobacco smoking (not even a puff) for the 30 days period prior to the visit.</p> <p>Exposure E-cig users inhale ≥ 50 puffs weekly from any type of e-cig</p>	<p>Adjusted model: Multivariate random-effect logistic/linear regression, with geographical region as the cluster unit, adjusted for baseline age, gender, BMI, marital status, educational level, occupation, alcohol use, hypertension, hypercholesterolemia, diabetes, self-rated health, smoking/vaping amount, and years of tobacco smoking.</p> <p>2b) Current users of combustible tobacco product (4-year follow-up) E-cigarette never users: 126/471 E-cigarette ever users: 73/216</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	T0 2013	<p><i>Ethnicity, %: Italian 100%</i></p> <p>Drop-out rate Total enrolled 1355 N=959 at 12-month follow-up (provided some data) 70.8%</p>	<p>A1 Provided data at 12-month follow-up, exposure defined by baseline use status, regardless of product use switching</p> <p>A2 Provided data at 48-month follow-up, exposure defined by baseline use status, regardless of product use switching</p> <p>A3 Provided data at 48-month follow-up, exposure defined by baseline use status, never switched product use</p> <p>Outcomes Rate of cessation of all products (>30 days): Quit all products, Quit tobacco</p> <p>Rate of abstinence/cessation from tobacco smoking at 48 months</p> <p>Change in number of tobacco cigarettes smoked per day (self-reported)</p> <p>Health outcomes including rate of possibly smoking-related diseases (PSRD; validated through hospital</p>	<p>Association between e-cigarette use and continuous tobacco abstinence from baseline or cessation from tobacco during follow-up. Adjusted OR (95%CI) = 1.41 (0.98 to 2.02); p= 0.066</p> <p>Outcome: Number of tobacco cigarettes per day - Mean difference 4y-baseline E-cigarette never users, n=471: -4.3 (8.5) E-cigarette ever users, n=216: -4.9 (11.2)</p> <p>Association between e-cigarette use and number of tobacco cigarettes per day Adjusted Beta (95%CI) = 0.38 (-0.97 to 1.73); p= 0.6</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
			discharge data or visit in 62.6% of the sample)	
Gomajee 2019 [36] France	<p>Design Prospective cohort (subgroup analysis), (CONSTANCES)</p> <p>Time to follow-up 2 years</p> <p>Description of cohort The CONSTANCES cohort was designed as a randomly selected sample of 200 000 adults drawn from France's compulsory health insurance scheme. Sampling adjusted to get more representation from normally underrepresented groups.</p> <p>Study period T0 Jan 2012 to 2015 T1 Feb 2017 to Oct 2018</p>	<p>Population Daily smokers N=5400 n=4578 e-cig non-users n=822 e-cigarette users</p> <p><i>Age (smokers)</i> E-cigarette-non-users: mean (SD)=44.7 (12.5) E-cigarette-users: mean (SD)=45.9 (11.6)</p> <p><i>Sex, %</i> F: 53.8% <i>E-cig-non-users: 54.8%</i> <i>E-cig-users: 48.5%</i></p> <p><i>M: 46.2%</i> <i>E-cig-non-users: 45.2%</i> <i>E-cig-users: 51.5%</i></p> <p><i>Ethnicity, %</i> <i>Non-French: 1.7%</i></p> <p><i>Education:</i> <i>No tertiary education: 45.0%</i> <i>E-cigarette-non-users: 46,8%</i> <i>E-cigarette-users: 45.9%</i></p>	<p>Definition of smokers An active smoker reported currently smoking at least 1 cigarette per day</p> <p>A pack-year is defined as 20 cigarettes smoked every day for 1 year</p> <p>Exposure Participants reported current regular (daily) e-cig use (yes or no) at T0.</p> <p>Outcome The number of cigarettes smoked per day</p> <p>The change in the number of cigarettes smoked per day</p> <p>Smoking cessation among smokers (i.e. 0 cigarettes per day in any year of follow-up)</p>	<p>Adjusted for: age, sex, educational level, income, financial difficulties, marital status, number of cigarettes smoked at baseline, number of pack-years of smoking, duration of previous quit attempts, history of depression and depression at baseline and respiratory problems.</p> <p>B2) current users of combustible tobacco Outcome: Longitudinal changes in number of cigarettes smoked per day</p> <p>- unadjusted β (95%CI): E-cigarette never users, n=4578: 9.8 (9.6 to 10.0) E-cigarette ever users, n=822: 11.2 (10.8 to 11.7) Group difference (95% CI) = p< 0.001</p> <p>- adjusted β (95%CI): E-cigarette never users, n=4578: 12.2 (11.6 to 12.8) E-cigarette ever users, n=822: 11.2 (10.5 to 11.8) Group difference (95% CI) = p< 0.001</p> <p>Outcome: Longitudinal changes in difference in number of cigarettes per day between baseline and follow-up</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
		<p><i>Cigarettes per day (IQR):</i> <i>E-cigarette-non-users:</i> 10.0 (5 to 15) <i>E-cigarette-users:</i> 11.0 (8 to 17)</p> <p>Selection of data / missing data N=40 311 participants with at least 1 completed follow up report Excluded participants with no data collected on e-cig use (1023 daily smokers and 21 former smokers) E-cig users at baseline = 194 Overall, less than 2% of data were missing, except for data on number of pack-years of smoking, which were unavailable for 718 of 7425 participants (9.7%).</p>		<p>- unadjusted β (95%CI): E-cigarette never users, n=4578: -1.8 (-2.9 to -0.7) E-cigarette ever users, n=822: -4.0 (-5.1 to -2.8) Group difference (95% CI) = $p < 0.001$</p> <p>- adjusted β (95%CI): E-cigarette never users, n=4578: -2.7 (-3.1 to 2.4) E-cigarette ever users, n=822: -4.4 (-4.8 to -3.9) Group difference (95% CI) = $p < 0.001$</p> <p>Outcome: Longitudinal changes in smoking cessation</p> <p>- unadjusted RR (95%CI): E-cigarette never users, n=4578: reference E-cigarette ever users, n=822: 1.59 (1.45 to 1.76) Group difference (95% CI) = $p < 0.001$</p> <p>Outcome: Longitudinal changes in smoking cessation</p> <p>- adjusted RR (95%CI): E-cigarette never users, n=4578: reference E-cigarette ever users, n=822: 1.67 (1.51 to 1.84) Group difference (95% CI) = $p < 0.001$</p>
Grana, R. A 2014	Design	Population	Definition of smokers	Adjusted model: Adjusted for intent to quit, consumption of cigarettes and dependence.

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
[37] USA	<p>Longitudinal cohort – Knowledge networks (now GfK)</p> <p>Time to follow-up 1 year</p> <p>Description of cohort Probability-based web-enabled panel of a national sample of current US smokers</p> <p>Study period 2011–2012</p>	<p>completed both the baseline and the follow-up surveys and were current cigarette smokers. Current smokers who completed the baseline and follow-up survey.</p> <p>N= 1189</p> <p><i>Age (years):</i> 18–29: 9.4% 30–44: 20.5% 45–59: 46.4% ≥60: 23.7%</p> <p><i>Sex:</i> F: 52.4%: M: 47.6%</p> <p><i>Ethnicity:</i> White, non-Hispanic: 75.3% Black, non-Hispanic: 10.4% Hispanic: 8.3% Other, non-Hispanic: 5.9%</p> <p><i>Education (%):</i> Less than high school: 9.2% High school: 39.6% Some college: 32.6% College and higher: 18.7%</p> <p><i>Intention to quit:</i></p>	<p>Current cigarette smokers: smoking cigarettes in the past 30 days</p> <p>Exposure at time T0 E-cigarette use: use of e-cigarettes at least once in the last 30 days.</p> <p>Outcome at time T1 Smoking status: quit smoking (not defined).</p>	<p>Regression analyses including demographic variables (age, sex, education, ethnicity) found that none of these variables were significant, so they were omitted from the final models.</p> <p>B2) Smokers at T0 Outcome: Cigarette non-users at T1: Non e-cigarette users: 119/861 (13.8%) E-cigarette users: 9/88 (10.2%)</p> <p><i>Unadjusted model:</i> Non e-cigarette users: OR:1.0 E-cigarette ever users: OR: 0.71 (0.35-1.46), p=0.35</p> <p><i>Adjusted model:</i> Non e-cigarette users: OR:1.0 E-cigarette past 30-day users: OR: 0.76 (0.36-1.60)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
		<p>Never expect to quit: 12.4% Will quit, but not in the next 6 m: 57.0% Will quit in the next 6 m: 23.8% Will quit within next month: 6.8%</p> <p>Drop-out rate Response rate 81.9 %. Respondents who provided nonsensical data were excluded, yielding a final sample of N=949 (79.8%)</p>		
Hair, E. C 2018 [38] USA	<p>Design Prospective cohort – Sample drawn from the Truth Longitudinal Cohort and subsamples from the GfK’s Knowledge Panel and recruited through random digit dialling.</p> <p>Time to follow-up Follow up period: 6 months, in total 6 waves</p> <p>Setting A large, probability-based, nationally representative sample of youth and young adults</p>	<p>Population Youth and young adults, 15–21 years old, who completed two or more follow up surveys across six waves.</p> <p>N=15,275 (Completed at least two waves, i.e. 6 months follow-up)</p> <p><i>Age:</i> Mean: 18.61 yrs. SD: 2.11</p> <p><i>Sex:</i> F: 48.7%; M: 51.3%</p> <p><i>Ethnicity:</i></p>	<p>Definition of smokers <i>Combustible tobacco:</i> Includes cigarettes hookah and all types of cigars</p> <p>Exposure ENDS use: includes e-cigarettes and e-hookah.</p> <p>ENDS use defined as never, non-current (not in the past 30 days), ENDS-only use, Dual use and combustible only use (i.e. no ENDS).</p> <p>Outcome Transitions between never use, noncurrent use, and past 30-day use of combustible</p>	<p>Adjusted model adjusted for age, gender, ethnicity, parental education</p> <p><i>All data is calculated from the adjusted model:</i></p> <p>B1) Non-smokers at T0 Outcome (T1): use of only combustible tobacco product n(%) Never use: 176/9241 (1.9%) ENDS-only use:47/474 (10.0%)</p> <p>B1) Non-smokers at T0 Outcome (T1): dual use of combustible tobacco product and e-cigarettes; n(%) Never use: 55/9241 (0.6%) ENDS-only use:60/474 (12.7%)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	(drawn from the Truth Longitudinal Cohort (TLC)). Subsamples recruited through random digit dialling and from GfK's Knowledge Panel. Study period T0: 2014–2017. T0: time of first observation, T1: 6 months later.	White: 66.6%; Other: 33.1%; No info: 0.03% <i>Parent education:</i> More than High school: 84.0% High school or less: 14.6% No information: 1.4% Drop-out rate Retention rates across all waves ranged from 61% to 71%.	tobacco, e-cigarettes (ENDS), and dual use of both kinds of products. <i>Smoking initiation:</i> Any use of combustible tobacco <i>Current use:</i> Use of combustible tobacco in the past 30 days. <i>Smoking cessation:</i> No use of combustible tobacco in past 30 days.	B1) Non-smokers at T0 Outcome (T1): Pooled, Current use of combustible tobacco product (smokers); n(%) Never use: 231/9241 (2.5%) ENDS-only use:107/474 (22.7%) B2) Smokers at T0 Outcome (T1): Stopped smoking 30 d; n(%) Combustible only: 547/1359 (40.2%) Dual use:252/932 (27.0%)
Hammond, D. 2017 [39] Canada	Design Cohort study (COMPASS) Time to follow-up 1 year Setting Students in 9 th –12 th grades in 86 selected Canadian secondary schools. Data collected using paper-based surveys administered by teachers, under the supervision of study research assistants. Study period	Population Canadian secondary school students. N= 57 229 (enrolled T0) N=44 163 (analysed T0)) N=41 262 (analysed T1) N=19 310 (longitudinal; answered both waves) <i>Age (years at T0)</i> ≤14: 32.4 15: 33.7% 16: 27.1% 17: 6.2% ≥18: 102/19310=0.5% <i>Sex (%)</i> F: 53.4%; M: 46.6%	Definition of smokers <i>Current daily smokers:</i> Smoked ≥100 cigarettes in a lifetime and smoked every day the past 30 days <i>Current occasional smokers:</i> Smoked ≥100 cigarettes in a lifetime and smoked ≥1 day but less than 30 in the past 30 days <i>Experimental smokers:</i> smoked ≥1 cigarette but less than 100 in a lifetime. <i>Puffers:</i> Have tired smoking but less than a whole cigarette in a lifetime. Exposure	Adjusted model for both outcomes, the models were adjusted for age, sex, race/ethnicity, spending money, smoking status, and past 30-day e-cigarette use as fixed effects, and a random effect of school (to account for student clustering within schools). B1) Never smokers at T0 Outcome: Smoker at T1; n(%) E-cigarette non-users: 1313/16831 (7.8%) E-cigarette users: 136/487 (27.9%) <i>Unadjusted model; OR (95% CI):</i> E-cigarette non-users: 1.0 E-cigarette users: 4.81 (3.90-5.94) <i>Adjusted model; OR (95% CI):</i> E-cigarette non-users: 1.0

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	T0: 2013/14 T1: 2014/15	<p><i>Ethnicity:</i> White: 77.7%; Black: 3.1% Asian: 5.1%; Aboriginal: 2.5% Hispanic/Latino:1.6%; Other/Mixed ethnicity: 10.0%.</p> <p><i>Parental education:</i> NA</p> <p><i>Susceptibility to ever try smoking among never smokers at T0:</i> <i>Susceptible:</i> 29.9% Non-susceptible: 70.1% Yes: 4719 (24.4%) No: 11075 (57.4%)</p> <p>Drop-out rate Participants with missing data were excluded</p>	<p>Past 30-day use of e-cigarettes at T0</p> <p>Outcome Smoking initiation: never smoked at T0 but at T1 Daily smoking initiation: not ever smoked every day for at least 7 days in a row at T0 but at T1.</p>	<p>E-cigarette users: 2.12 (1.68-2.66)</p> <p>B2) Current cigarette smokers at T0, n=455, Outcome: Stopped smoking (T1) (n=39): E-cigarette non-users: 23/39 (59.0%) E-cigarette users: 16/39 (41.0%)</p>
Harlow, A 2019 [40] USA	<p>Design Prospective cohort – US Population Assessment of Tobacco and Health (PATH), wave 1 and 2. [1]</p> <p>Time to follow-up 1 year</p> <p>Description of cohort</p>	<p>Population PATH participants who were 18 years or older at T0, and established cigarette smokers but not current e-cigarette users</p> <p>T1: N=8,852 T2: N=7,219 (answered both waves) Final sample: N=6,592</p>	<p>Definition of smokers Dual users (began using e-cigarettes between T0 and T1 and continued smoking cigarettes) Exclusive e- cigarette users (began using e- cigarettes and quit smoking between T0 and T1). Former smokers (did not begin using e-cigarettes and quit smoking). No transition (did not begin using e-cigarettes and continued smoking cigarettes).</p>	<p>Adjusted model: Adjusted for age, sex, ethnicity, geographic region and socio- economy, where income and education were considered two separate proxies for socioeconomic differences.</p> <p>B2) Current smokers (T0): Outcome (T1): Quit smoking cigarettes, n(%): E-cigarette ever user (T1): 285/3404 (8.4%) E-cigarette never-user (T1): 238/2839 (8.4%)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>More than 49 000 participants from across the US.</p> <p>Recruitment using a stratified address-based, area-probability sampling design</p> <p>Study period T0: 2013–2014 T1: 2014–2015</p>	<p><i>Age</i> About 75% were between 18 and 54 years. 25% were older than 54 years.</p> <p><i>Sex</i> F: 44.39% M: 55.61%</p> <p><i>Ethnicity:</i> White: 68.79% Black: 14.45% Hispanic:10.98% Other: 5.78%.</p> <p><i>Education:</i> Less than high school: 16.2% High school or GED: 39.2% Some or more college: 44.65%</p> <p>Drop-out rate, n (%) 2260/8,852 = 25.5% <i>Non-responders at T1: 1,633.</i> <i>Excluded due to non-response and missing data: 627</i></p>	<p>Exposure Uptake of e-cigarettes between T0 and T1. E-cigarette defined as currently using e-cigarettes every day, some days, or experimentally.</p> <p>E-cigarette use at T0 defined as using e-cigarettes experimentally, some days or every day.</p> <p>Outcome Quit smoking: not currently smoking cigarettes, and not having smoked any cigarettes in the past 30 days.</p> <p><i>Established cigarette users:</i> smoking at least 100 cigarettes in their lifetime, and currently smoke every day or some days.</p>	
Kasza, K. A. 2018 [41] USA	Design Prospective cohort – US Population Assessment of Tobacco and Health (PATH), wave 1 and 2. [1]	Population Adult (≥18 years) tobacco users and non-users in the USA, followed for one year.	Definition of smokers: <i>Current cigarette users:</i> reported smoking at least 100 cigarettes in their lifetime, and currently smoking every day or some days.	Adjusted model: NA B1) Non-smokers at T0 Outcome: Smoking at T1 (combustible only), current use:

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>Time to follow-up 1 year</p> <p>Description of cohort Nationally representative longitudinal study of tobacco use, and health among non-institutionalized civilian adults and youths in the U.S.</p> <p>Stratified address-based, area-probability sampling design. Data collected using audio. computer assisted self-interviews administered in English or Spanish. Weighted response rate for the adult interview was 74.0% at T0 and 83.2% at T1.</p> <p>Study period T0: 2013–2014 T1: 2014–2015</p>	<p><i>Participants who answered both waves:</i> Young (18-24 years): N=7,324 Older (25 and older): N=19,115</p> <p><i>Age (at T0)</i> 18-24 years: N= 28.2% 25 or older: N= 71.8%</p> <p><i>Sex: Na</i> <i>Ethnicity: Na</i> <i>Education: Na</i></p> <p>Drop-out rate <i>between T0 and T1:</i> 18-24 years: N=1,785/9,109 (19.6%) 25 and older: N=4,079/23,194 (17.6%)</p>	<p><i>Current hookah users:</i> currently smoking every day, some days, usually weekly or usually monthly.</p> <p><i>Current user of other tobacco products:</i> smoking/using every day or some days.</p> <p>Exposure Use of e- cigarettes at baseline, defined as now smoking/using every day or some days</p> <p>Outcome Transition from never smoking combustible tobacco to current combustible use</p> <p>Transition from smoking combustible tobacco to no tobacco use or no combustible use in the past 30 days.</p>	<p><i>Young adults (18-24 years at T0): 4739 participants</i> E-cigarette never users: 400/4658 (8.6%) E-cigarette ever users: 17/81 (20.6%)</p> <p><i>Older adults (25 years and older at T0): 14 623 participants</i> E-cigarette never users: 494/14 451 (3.4%) E-cigarette ever users: 23/172 (13.4%)</p> <p>B1) Non-smokers at T0 Outcome: Smoking combustible tobacco + ENDS (dual use) at T1, current use: <i>Young adults (18–24 years at T0) (4739 participants</i> E-cigarette never users: 0/4658 (0%) E-cigarette ever users: 17/81 (21.0%)</p> <p><i>Older adults (25 years and older at T0): 14 623 participants</i> E-cigarette never users: 0/14451 (6.4%) E-cigarette ever users: 25/172 (14.3%)</p> <p>B1) Non-smokers at T0 Outcome: Smoking combustible tobacco at T1, current use (pooled): <i>Young adults (18-24 years at T0) 4739 participants</i> E-cigarette never users: 400/4658 (8.6%) E-cigarette ever users: 34/81 (41.6%)</p> <p><i>Older adults (25 years and older at T0):</i></p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
				<p>14 623 participants E-cigarette never users: 494/14451 (3.42%) E-cigarette ever users: 47/172 (27.5%)</p> <p>B2) Current smokers at T0 Outcome: Non-smoking at T1: Young adults (18-24 years at T0): 2527 participants E-cigarette never users: 486/1977 (24.6%) E-cigarette ever users: 77/549 (14.1%)</p> <p>Older adults (25 years and older at T0): 8315 participants E-cigarette non-users: 499/3575 (14%) E-cigarette current users: 88/745 (11.8%)</p>
Kurti, A. N 2018 [42] USA	<p>Design Prospective cohort – US Population Assessment of Tobacco and Health (PATH), wave 1 and 2. [1]</p> <p>Time to follow-up 1 year</p> <p>Description of cohort Nationally representative longitudinal study of tobacco use, and health among non- institutionalized civilian</p>	<p>Population All women in reproductive age (18–44 years) who completed the first two waves of the PATH- study.</p> <p>Women not pregnant in either wave: N = 7,480 Women not pregnant at T0 and pregnant at T1: N = 332 Women pregnant at T0 and not pregnant at T1: N = 325. Total: N = 8,137</p> <p><i>Age</i> 18-24 years: 28.0%</p>	<p>Definition of smokers <i>*Non-users:</i> Did not meet the criteria for using cigarettes or other tobacco products.</p> <p><i>*Current users:</i> Smoking ≥100 lifetime cigarettes and smoking every day or some days (current established smokers) or did not report smoking ≥100 lifetime cigarettes but were smoking every day or some days (current experimental smokers).</p> <p><i>Users of other products (e-cigarettes):</i> Having ever used the product fairly,</p>	<p>Adjusted model: NA</p> <p>Among women not pregnant in either wave B2) Current cigarette smokers at T0 Outcome: no tobacco-use at T1: E-cigarette non-current users: 125/1062 (11.8%) E-cigarette current users: 27/232 (11.6%)</p> <p>Among women not pregnant in either wave B2) Current combustible tobacco users at T0 Outcome: no tobacco-use at T1: E-cigarette non-users: 220/1272 (17.3%) E-cigarette current users: 27/232 (11.6%)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>adults and youths in the U.S.</p> <p>Stratified area probability sample design, with data collection by computer-assisted personal interviewing or audio computer assisted self-interviewing administered in English or Spanish.</p> <p>The overall weighted response rate was 74.0% at T0, weighted retention rate 88.4% at T1.</p> <p>Study period T0: 2013–2014 T1: 2014–2015</p>	<p>25-34 years: 37.4% 35-44 years: 34.7%</p> <p><i>Sex</i> F: 100%; M: 0%</p> <p><i>Ethnicity:</i> White: 57.4%, Black:12.1%; Hispanic: 21.1%, Other: 8.8%</p> <p><i>Education Level</i> <High School/GED:13.2% High School Graduate: 20.0% Some college/ associate degree: 36.4% Bachelor's/Advanced degree:30.5%</p> <p>Drop-out rate Seventeen women were pregnant in both waves and were excluded.</p>	<p>regularly and using some days or every day now (current established users), or reported using the product before but not fairly, regularly and using some days or every day now (current experimental users)</p> <p>Exposure Current established or current experimental e-cigarette use at T0.</p> <p>Outcome Transition from smoking cigarettes to non-use of cigarettes</p>	
<p>Leventhal, A. M. 2016 [43] USA</p>	<p>Design Prospective cohort study</p> <p>Time to follow-up 6 months</p> <p>Description of cohort</p>	<p>Population Students in 10 public high schools</p> <p>T0: N= 3396 T1: N= 3251</p> <p>Complete smoking and vaping data: N=3084</p>	<p>Definition of smokers</p> <p><i>Cigarettes</i> <i>Non-smoker:</i> Never used, or not used in the last 30 days <i>Current user:</i> Used in the last 30 days</p> <p><i>E-cigarettes: Never user</i> <i>Prior use:</i> Ever used, but not used in the past 30 days</p>	<p>Adjusted model adjusted for age, sex, ethnicity, highest parental education, whether the student lived with both parents, ever use of alcohol or drugs, ever use of any combustible tobacco product, family history of smoking, depressive symptoms (Cronbach $\alpha = .94$), UPPS Impulsive Behavior Scale lack of premeditation</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>High school students, in 10 public high schools in Los Angeles County, USA. Among 4100 eligible students 82.8% provided assent and parental consent. Response rate 96.6% at T0.</p> <p>Surveys administered during school semesters</p> <p>Study period T0: 2014 (fall) T1:2015 (spring)</p>	<p>Age: Mean at T0: 15.5 yrs.</p> <p>Sex: F: 54.3%, M: 45.7%</p> <p>Ethnicity: Hispanic: 47.3%, Other: 52.7%</p> <p>Parental education: NA</p> <p>Drop-out rate 312/3396 (9.2%)</p>	<p><i>Current user:</i> Used in the last 30 days <i>Ever used:</i> Prior and current use</p> <p>Exposure Use of e-cigarettes at T0</p> <p>Outcome <i>Current use of cigarettes: smoking in past 30 days</i> <i>Smoking frequency:</i> N.o days of smoking in the last 30 days.</p>	<p>($\alpha = .94$) and sensation seeking ($\alpha = .91$) subscales, delinquent behavior ($\alpha = .81$), peer smoking, smoking susceptibility ($\alpha = .87$), and smoking expectancies ($\alpha = .46$).</p> <p>B1) Non-smokers at T0 (n=2966) Outcome: Cigarette current users at T1: Never e-cigarette users: 25/2059 (1.2%) Prior e-cigarette users: 43/702 (6.1%) Current e-cigarette users:26/205 (12.7%) (Pooled) Ever e-cigarette user: 69/907 (7.6%)</p> <p><i>Adjusted model:</i> Never e-cigarette users: OR: 1.00 E-cigarette users: OR: 2.51 (2.30-2.75)</p> <p>B2) Current smokers at T0 (n=118) Outcome: Non-smokers at T1: Never e-cigarette users: 9/16 Prior e-cigarette users: 17/28 Current e-cigarette users:35/74 (Pooled) Ever e-cigarette user: 52/102</p>
Leventhal, A. M. et al 2015 [44] USA	<p>Design Prospective cohort study</p> <p>Time to follow-up 6 and 12 months</p> <p>Description of cohort</p>	<p>Population 9th gradeers in high schools, never-smoking students who completed follow-up at T1 and T2.</p> <p>2 530 students who reported never using combustible</p>	<p>Definition of smokers Any use during the prior 6 months of combustible tobacco products, combustible cigarettes, cigars and hookah.</p> <p>Exposure Ever use of e-cigarettes at T0.</p>	<p>Adjusted model: adjusted for sociodemographic characteristics (including, age sex, race/ethnicity, and highest parental education); environmental factors (living situation family history of smoking, and peer smoking); intrapersonal factors (mental health, personality traits, psychological processes linked with experimentation, risky</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>High-school students, in public high schools in the Los Angeles metropolitan area, USA. 10 of 40 eligible schools participated.</p> <p>Data collected through self-report surveys during in-classroom data collections</p> <p>4,100 eligible students, 82.8% of which provided assent and parental consent.</p> <p>Study period T0: 2013 (fall) T1: 2014 (spring) T2:2014 (fall)</p>	<p>tobacco were included in the analysis.</p> <p><i>Age</i>; mean (95%CI) 14.06 (14.04–14.07)</p> <p><i>Sex</i> F: 53.2%, M: 46.8%</p> <p><i>Ethnicity</i> American Indian/Alaska Native: 0.8% Asian: 19.0%, Black: 4.8%, Hispanic: 44.2%, Native Hawaiian/Pacific Islanders: 3.6%, White: 16.2% Other: 5.7%, Multi-ethnic or multiracial: 5.7%</p> <p>Parental education (highest level): ≤8th grade: 3.3% Some high school: 7.8% High school graduate: 15.2% Some college: 19.5% College graduate 33.7%, Graduate degree: 20.6%</p> <p>Drop-out rate 866/3396=25.5% 28 Excluded due to no follow-up data</p>	<p>Outcome Use of smoked tobacco products (combustible tobacco products, combustible cigarettes, cigars or hookah).</p>	<p>behaviour, and smoking, depressive symptoms, impulsivity, use of non-nicotine or tobacco substances, and susceptibility to smoking).</p> <p>B1) Never users of combustible tobacco Outcome: Past 6-month use of any combustible tobacco product at 6-month follow-up E-cigarette never users: 182/2308 (8.1%) E-cigarette ever users: 67/222 (30.7%)</p> <p>Past 6-month use of combustible cigarettes at 6-month follow-up E-cigarette never users: 68/2308 (3.0%) E-cigarette ever users: 21/222 (9.7%)</p> <p>Past 6-month use of any combustible tobacco product at 12-month follow-up E-cigarette never users: 210/2258 (9.3%) E-cigarette ever users: 54/214 (25.2%)</p> <p>Past 6-month use of combustible cigarettes at 12-month follow-up E-cigarette never users: 74/2258 (3.3%) E-cigarette ever users: 17/214 (7.9%)</p> <p>Association between baseline e-cigarette use and use of combustible tobacco product (averaged across the 2 follow-up periods): - Any combustible tobacco product</p>

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		70 excluded due to missing data on key variables 768 excluded due to having already smoked at T0.		Unadjusted OR (95%CI) = 4.27 (3.19–5.71) Adjusted OR (95%CI) = 2.73 (2.00–3.73)
Loukas, A. 2018 [45] USA	<p>Design Prospective cohort study, the Marketing and Promotions across Colleges in Texas project (Project M-PACT)</p> <p>Time to follow-up Four-wave data collection with six months between each wave</p> <p>Description of cohort Project M-PACT is a rapid response surveillance study, collecting data every six month from a cohort of 5,482 students in 24 colleges in Texas, USA.</p> <p>Students were recruited to participate in the online survey regarding tobacco use via email invitation.</p>	<p>Population Cigarette-naïve (never cigarette users but could be ever users of tobacco products) students from 24 Texas colleges who had complete data on T0 predictor variables and information on cigarette use from at least one follow-up wave.</p> <p>N= 2558, included in analysis.</p> <p><i>Age</i> 18–25-year-old M (SD) =19.71 (1.61)</p> <p><i>Sex</i> F= 67.7%, M= 32.3%</p> <p><i>Ethnicity</i> Non-Hispanic white: 31.8% Hispanic/Latino: 27.4% Asian: 23.4% African-American: 9.8%</p>	<p>Definition of smokers Any use of cigarettes</p> <p>Exposure Ever use of ENDS e-cigarette, vape pen, or e-hookah) at T0.</p> <p>Outcome Cigarette ever use</p>	<p>Adjusted model: multivariable, multilevel discrete-time hazard model predicting cigarette initiation over a 1.5 year period from wave 1 ever ENDS use, over and above other wave 1 predictor variables: socio-demographics (sex, race/ethnicity, age, two-year or four-year college); cigarette use susceptibility; interpersonal factors; ever other tobacco use</p> <p>B1) never cigarette smokers (n=2558) Outcome: ever cigarette use at T3; n=282 E-cigarette never users: 168/1990 (8.4%) E-cigarette ever users: 114/568 (20.1%) Group difference: $\chi^2[1] = 61.25, p < 0.001$.</p> <p><i>Adjusted model, OR (95%CI):</i> E-cigarette never users: 1.0 E-cigarette ever users: 1.36 (1.01 to 1.83)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>Study period T0: November 2014– February 2015. Follow-up data collected every six months for 3 waves (T4).</p> <p>Retention rates ranging from 70% for T1 and T2 to 81% for T3.</p>	<p>Another race/ethnicity or reported two or more races/ethnicities: 7.5%</p> <p><i>Education: NA</i></p> <p>Drop-out rate T1: 9.8% T2: 10.9% T3: 8.2%</p>		
<p>Lozano 2019 [46] Mexico</p>	<p>Design Prospective cohort study (International Tobacco Control Policy Evaluation Surveys)</p> <p>Time to follow-up T0: wave 6 (October to December 2012) T1: wave 7 (November 2014 to March 2015)</p> <p>Description of cohort Adult smokers participating in the International Tobacco Control Policy Evaluation Surveys in Mexico. A population- based, representative</p>	<p>Population At entry into the cohort, eligible participants were aged 18 or more years, had smoked at least once during the previous week, and had smoked at least 100 cigarettes in their lifetime. Those who quit smoking over the study period were still surveyed and followed up.</p> <p>T0: 2 129 (992 from cities included at T1) T1: 944 Participants with data at T0 and T1: 760 Complete data for: 752 Analytical sample for change in CPD: 739</p> <p>Age</p>	<p>Definition of smokers smoked at least once during the previous week and had smoked at least 100 cigarettes in their lifetime.</p> <p>Exposure Participants were using e-cigarettes at least once in the last month (daily, weekly, 1-3 times per month) or not (other responses).</p> <p>Outcome Change in CPD T0-T1. Quitters (at either wave) were assigned a value of 0</p>	<p>Adjusted model: Several individual-level sociodemographic variables were examined as covariates, including age (18-29, 30-39, 40- 54, 55 or older), sex, education (dichotomized into individuals that had a middle-school education or less, and those with high school education or more), and monthly household income</p> <p>B2) Smokers at T0 Outcome: Change in cigarettes smoked per day at T1 (n= 739) <i>Unadjusted</i> No Use of e-cigarettes in past 30 days at T1: ref Use of e-cigarettes in past 30 days at T1 (β, 95% CI): β -0.42 (-3.06, 2.23)</p> <p><i>Adjusted</i> No Use of e-cigarettes in past 30 days at: ref</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>cohort in seven major Mexican cities, 3 cities included in follow-up.</p> <p>The initial data collection took place in 2006, using a stratified, multi-stage sampling scheme with face-to-face household interviews. At each wave, the sample is replenished in order to maintain sample size.</p>	<p>18-29: 12% 30-39: 34% 40-54: 32% ≥55: 23%</p> <p>Sex:F: 46%, M: 54% Ethnicity: NA Education: Middle school or less: 65% High school or more: 35%</p> <p>Smoking: Daily smokers: 61% Non-daily smokers: 22% Quitters: 17%</p> <p>Drop-out rate 232/992= 23.4%</p>		<p>Use of e-cigarettes in past 30 days at T1 (β, 95% CI): β -0.58 (-3.25, 2.10)</p>
<p>Lozano, P. 2017 [47] Mexico</p>	<p>Design Prospective cohort study</p> <p>Time to follow-up 20 months</p> <p>Description of cohort 60 public middle schools from the three largest cities in Mexico (Mexico City, Guadalajara, and Monterrey) selected using a stratified, multi-</p>	<p>Population First year middle-school students (12–13 years old) who had not tried conventional cigarettes, cocaine, or marijuana at T0</p> <p>N= 6574 (enrolled) N= 4695 (analytical sample)</p> <p>Age M (SD) = na 11 to 12 years =33%</p>	<p>Definition of smokers T0 measure current smoking, students were asked: “During the past 30 days, on how many days did you smoke cigarettes?”, with current smokers defined as those who reported smoking at least once.</p> <p>Trial/experimentation: Tried or experimented with cigarette smoking (even one or two puffs)</p> <p>Exposure</p>	<p>Adjusted model: adjusted for: sex, age, parent education, sensation seeking, friends that smoke, parents that smoke, siblings that smoke, tried alcohol, binge drinking and internet tobacco product advertising.</p> <p>B1) Never users of conventional cigarettes; n= 4695 Outcome: conventional cigarette trial at T1 E-cigarette never users: 1070/4460 (24%) E-cigarette ever users: 101/235 (43%)</p> <p><i>Unadjusted model, RR (95%CI):</i></p>

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	<p>stage random sampling scheme. Data collected by self-administered questionnaires.</p> <p>Response rate 84% at T0.</p> <p>Study period T0: February and March 2015 T1: October and November 2016.</p>	<p>13 or more = 67%</p> <p><i>Sex</i> F= 52%, M= 48%</p> <p><i>Ethnicity: na</i></p> <p><i>Parental education:</i> Primary: 16% Secondary: 38% High school: 19% University: 19% Unknown: 8%</p> <p>Drop-out rate 63% of students successfully followed up (n = 6574)</p> <p>Students who had tried conventional cigarettes, cocaine, or marijuana at T0 were excluded (n=1,748), as were students with missing data for key covariates at T0 (n=124), or for conventional cigarettes at follow-up (n=7)</p>	<p>Tried e-cigarettes at T0</p> <p>Outcome</p> <p>Trial/experimentation with cigarettes Current cigarette use</p>	<p>E-cigarette never users: 1.0 E-cigarette ever users: 1.82 (1.54 to 2.14)</p> <p><i>Adjusted model, RR (95%CI):</i> E-cigarette never users: 1.0 E-cigarette ever users: 1.40 (1.22 to 1.60)</p> <p>B1) never users of conventional cigarettes; n= 4695 Outcome: conventional cigarette use in past 30 days at T1 E-cigarette never users: 223/4460 (5%) E-cigarette ever users: 24/235 (10%)</p> <p><i>Unadjusted model, RR (95%CI):</i> E-cigarette never users: 1.0 E-cigarette ever users: 1.87 (1.25 to 2.78)</p> <p><i>Adjusted model, RR (95%CI):</i> E-cigarette never users: 1.0 E-cigarette ever users: 1.43 (0.94 to 2.16)</p>
Mantey, D. S. 2017 [48] USA	Design Prospective cohort study, the Marketing and Promotions across	Population 18–29-year-old college students reporting a history of cigarette smoking at T0, defined as having smoked 100 cigarettes in	Definition of smokers <i>Definition of smoker:</i> participants reporting a history of cigarette smoking at T0, defined as	Adjusted model: Multilevel analyses were conducted for all models to account for the nesting of participants within their Wave 1 college or university and adjusted for: Cigarettes Smoked Per Day at wave 1, Quit

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>Colleges in Texas project (Project M-PACT)</p> <p>Time to follow-up 6 and 12 months</p> <p>Description of cohort Project M-PACT is a rapid response surveillance study, collecting data every six month from a cohort of students in 24 colleges in Texas, USA.</p> <p>Students were recruited via email to participate in the online survey regarding tobacco use.</p> <p>13,714 students eligible to participate in survey, 5,428 provided consent and completed survey.</p> <p>Study period T0: November 2014 - February 2015. - T1: May-June 2015 - T32: October-November 2015</p>	<p>their lifetimes, were eligible. (N = 1018).</p> <p>Analytical sample: N= 627</p> <p><i>Age</i> M (SD) = 22.2 (3.1)</p> <p><i>Sex</i> F= 57.3% M= 42.7%</p> <p><i>Ethnicity</i> non-Hispanic white: 50.4% Hispanic/Latino: 28.6% African American: 3.2% Asian-American: 9.1% "other": 8.8%</p> <p><i>Education:</i> Four-year college/university: 549/627 (87.6%)</p> <p><i>Smoking behaviour at T0 (% of people):</i> Quit attempts in the past 12-months: 62.0% Reported use of e-cigarette in the past 30-days for reasons other than cigarette smoking cessation 19.1%, for cigarette smoking cessation 18.5%.</p>	<p>having smoked 100 cigarettes in their lifetime.</p> <p><i>Current smoker:</i> On the question "reporting smoking cigarettes "everyday" or "someday".</p> <p><i>Non-cigarette smokers – abstainers/former smokers:</i> On the question "Do you now smoke cigarettes?" reporting "not at all".</p> <p>Exposure Self-reported use of e-cigarettes (i.e., an e-cigarette, vape pen, or e-hookah) in the past 30-days at T0, even one or 2 puffs, as intended (i.e. with nicotine cartridges and/or e-liquid/e-juice)?"</p> <p>Stratified by "Use for smoking cessation" and "Not use for smoking cessation".</p> <p>Outcome Self-reported use of cigarettes "everyday" or "someday"</p>	<p>Attempt in Past 12-months at wave 1, age, sex, race/ethnicity , 2 or 4-year college.</p> <p>B2) Ever cigarette smokers at T0 Outcome: Cigarette smoking cessation at 6 months follow-up, OR (95%CI): <i>Adjusted model:</i> B2) Ever cigarette smokers E-cigarette non-users: 1.00 E-cigarette users (not for smoking cessation): 0.72 (0.44; 1.19) E-cigarette users (for smoking cessation): 1.95 (1.16; 3.28) E-cigarette user (Pooled): 1.15 (0.81, 1.65)</p> <p>B2) Ever cigarette smokers at T0 Outcome: Cigarette smoking cessation 12 months follow-up, OR (95%CI): <i>Adjusted model:</i> E-cigarette non-users: 1.00 E-cigarette users (not for smoking cessation): 0.81 (0.50 to 1.30) E-cigarette users (for smoking cessation): 1.66 (1.00 to 2.74) E-cigarette user (Pooled): 1.14 (0.80, 1.62)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	Retention rates ranging from 79% for T1 and T2 to 79% for T3.	Drop-out rate Among eligible participants, 391/1018=38.4% missing data.		
Manzoli et al 2017 [49] [50] Italy	Design Prospective cohort study Time to follow-up 1–2 years Description of cohort Participants recruited through newspaper and internet advertisements, and via tobacco outlets, social networks and general practitioners. Data collected by structured questionnaire administered through phone interview and/or by internet. Overall response rate 68.8 %. Study period Not reported which year the study was conducted, but enrollment planned for June-December 2013. T0: baseline	Population Adult residents in Italy, 30 to 75-year old smokers of e-cigarettes (inhaling at least 50 puffs/week) or cigarettes (at least 1 cigarette/day), or both, for a minimum of 6 months. Enrolled: N=1,598 Complete baseline data and eligible for inclusion: N= 1,355 Analytical sample (T1): N= 932 Age: Mean (SD): 44.4y (11.6) Sex: F: 43.8%, M: 56.2% Ethnicity: Na Education: Elementary/Middle school: 21.6% High school: 46.6% Bachelor or higher: 31.9% Drop-out rate T1: 423/1,355= 31.2% 1 year: 330 (20.7 %)	Definition of smokers <i>Tobacco smokers:</i> smoked ≥1 tobacco cigarette/day for ≥6 months <i>E-cigarette users:</i> inhaled ≥50 puffs/week of any type of e-cigarette for ≥6 months <i>Dual users:</i> smoked tobacco cigarettes and used e-cigarettes for ≥6 months. Exposure Use of e-cigarettes Outcome Sustained abstinence from smoking for at least 30 days, at 24 months follow-up. Reduction in number of cigarettes smoked per day (50% reduction). Carbon monoxide levels were tested in 50% of those declaring tobacco smoking abstinence.	Adjusted model: multivariate analyses. Random-effect logistic regression with region as the cluster level, adjusting for the following baseline characteristics: age, gender, BMI, marital status, educational level, occupation, alcohol use, hypertension, hypercholesterolemia, diabetes, self-reported health, years of tobacco smoking, number of tobacco cigarettes smoked per day. A total of 682 participants were included in the final model due to 21 missing items in the self-reported health item at baseline B2) Current users of conventional cigarettes, at T0 Outcome: Smoking abstinence of at least 30 days at T1, n (%) E-cigarette non-users at T1: 111/480 (23.1%) E-cigarette users at T1: 58/223 (26.0%) <i>Unadjusted OR (95 % CI):</i> E-cigarette non-users at T0: 1.00 E-cigarette users at T0: 1.17 (0.81; 1.69) <i>Adjusted OR (95 % CI):</i> E-cigarette non-users at T1: 1.00 E-cigarette users at T1: 1.25 (0.85; 1.84)

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	T1: 24-month follow-up	2 year: 27 (22.3 %)		<p>B2) Ever users of tobacco cigarettes, at baseline (T1) Outcome: Reduction of tobacco cigarette consumption by 50% or more per day from baseline to 24 months, n (%) E-cigarette non-users at T1: 166/480 (34.5%) E-cigarette users at T1: 89/223 (39.7%)</p> <p><i>Unadjusted OR (95 % CI):</i> E-cigarette non-users at T1: 1.00 E-cigarette users at T1: 1.25 (0.89; 1.76)* E-cigarette users at T1: 1.25 (0.76; 2.05)** * model included whole sample of tobacco and dual smokers at T0 ** model included only the subsample of baseline smokers who continued smoking at 24 months.</p> <p><i>Adjusted OR (95 % CI):</i> E-cigarette non-users at T1: 1.00 E-cigarette users at T1: 1.28 (0.90; 1.82)* E-cigarette users at T1: 0.99 (0.56; 1.71)** * model included whole sample of tobacco and dual smokers at T0 ** model included only the subsample of baseline smokers who continued smoking at 24 months.</p> <p>B2) cigarette smokers at T=0</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
				<p>Outcome: difference in the daily number of cigarettes between T0 and T1 (coefficient (95%CI))</p> <p><i>Unadjusted model</i> E-cigarette non-users at baseline 0 E-cigarette users at T0: 0.10 (-1.41; 1.61)* E-cigarette users at T0: 0.87 (-0.42; 2.15)** * model included whole sample of tobacco and dual smokers at T0 ** model included only the subsample of baseline smokers who continued smoking at 24 months.</p> <p><i>Adjusted model</i> E-cigarette non-users at baseline 0 E-cigarette users at T0: 0.44 (-0.88; 1.77)* E-cigarette users at T0: 0.75 (-1.13; 2.63)** * model included whole sample of tobacco and dual smokers at T0 ** model included only the subsample of baseline smokers who continued smoking at 24 months.</p> <p><i>Crude</i></p>
McMillen 2019 [51] US	<p>Design longitudinal study (PATH) [1]</p> <p>Time to follow-up 1 year (within 4 months)</p> <p>Description of cohort</p>	<p>Population Civilian, non-institutionalised, never combustible cigarette smoker US adults aged >18</p> <p>Never smokers at t0 n=5776 (Analytical sample: 5762) -Never e-cig: 98.5%</p>	<p>Definition of smokers Never combustible cigarette smokers answered when asked: "Have you ever smoked a cigarette, even 1 or 2 puffs?"</p> <p>Never e-cigarette user either had never seen or heard of e-cigarettes or</p>	<p>Model adjusted for: race/ethnicity, sex, age, education, household smoking rules, and living with someone who smokes cigarettes</p> <p>1b) Never users of cigarettes Outcome: past 30-day smoker at follow-up (recent) E-cigarette never users: 16/5472</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>Nationally representative sampling of civilian non-institutionalised US adults surveyed using a computer-assisted audio interview in English or Spanish. Tobacco users were intentionally oversampled. Households recruited by using address-based, area-probability sampling, and an in-house screener selected up to 2 adults in each household to be interviewed.</p> <p>Study period T0 2013 to 2014 (wave 1) T1 October 23, 2014 to October 30, 2015 (wave 2)</p>	<p>-At least tried e-cig: 1.5%</p> <p><i>Age: 18-34 years / ≥35</i> 59% / 41%</p> <p><i>Sex, %:</i> F: 3402, 59%, M: 2363, 41%</p> <p><i>Ethnicity, %</i> Non-Hispanic white: 3706, 66% Non-Hispanic black: 1206, 22% Other: 675, 12%</p> <p><i>Education</i> < High school: 678, 12% High school / GED: 1617, 28% Some college: 1999, 35% ≥ college degree: 1438, 25%</p> <p><i>Intention to stop smoking (% yes)</i> NR</p> <p><i>Cigarettes per day:</i> NR</p> <p>Drop-out rate Relevant respondents were missing data for the following variables: race/ethnicity (n=745), sex (n=27), age (n=5), education (n=133), lives with a</p>	<p>answered that they have never used e-cig, even 1 or 2 times.</p> <p>Tested e-cigarettes (not recent) user answered affirmatively that they had ever used an e-cigarette, even 1 or 2 times, but not in the past 30-days.</p> <p>Recent e-cig user reported using in the last 30-days</p> <p>Exposure See definition of smokers</p> <p>Outcomes Initiation of smoking: Having smoked a cigarette, even 1 or 2 puffs. Established smoking: Having smoked a cigarette, even 1 or 2 puffs in the past 30 days.</p>	<p>E-cigarette ever users: 10/288</p> <p>Outcome: ever tried cigarettes at follow-up (ever 12-month) E-cigarette never users: 115/5473 E-cigarette ever users, 51/288</p> <p>Association between tested e-cigarettes and initiation of cigarette smoking: Unadjusted OR (95%CI) = 7.7 (5.4 to 11.0) Adjusted OR (95%CI) = 4.0 (2.6 to 6.1)</p> <p>Association between recent use of e-cigarette and initiation of cigarette smoking: Unadjusted OR (95%CI) = 16.4 (9.8 to 27.5) Adjusted OR (95%CI) = 6.6 (3.7 to 11.8)</p> <p>Pooled: Association between e-cigarette use (tested and recent) and initiation of cigarette smoking: Adjusted OR (95%CI) = 4.78 (3.38 to 6.76)</p> <p>Association between tested e-cigarettes and established cigarette smoking: Unadjusted OR (95%CI) = 5.9 (1.7 to 20.7) Adjusted OR (95%CI) = 2.5 (0.6 to 10.9)</p> <p>Association between recent use of e-cigarettes and established cigarette smoking:</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
		combustible cigarette smoker (n=88), never combustible cigarette smoker at wave 1 (n=13), never to ever combustible cigarette smoker at wave 2 (n=8), and current established combustible cigarette smoker (n=39).		Unadjusted OR (95%CI) = 25.5 (10.6 to 61.4) Adjusted OR (95%CI) = 8.0 (2.8 to 22.7) Pooled: Association between e-cigarette use (trial and 30 days) and established use of cigarettes: Adjusted OR (95%CI) = 5.32 (2.28 to 12.39)
Morgenstern 2018 [52] Germany	Design Prospective cohort study Time to follow-up T0: baseline T1: 6 months T2: 12 months Setting 10 th -graders in German schools Description 4 163 10 th -graders in the German states of Lower Saxony and Schleswig-Holstein were surveyed, 2,358 had never tried conventional cigarettes. Study period 2015-2016	Population 10 th -graders who had never smoked conventional cigarettes Enrolled: N = 2358 Ever e-cig users at T1: N=347 Age: Mean (SD)= 15.5 (0.65) years <i>Sex</i> F: 53.6 %, M: 46.4 % <i>Ethnicity:</i> Migration background:26.4% <i>Parental education:</i> No secondary school certification: 60.5% Drop-out rate Total:172/2358 (7.3%) Among T0 e-cig ever users: 34/347 (9.8%)	Definition of smokers The consumption of conventional cigarettes was measured using the question “How many cigarettes have you smoked in your life so far? “. The following answer alternatives were made provided: “none/only a few puffs/1–19/20–100/more than 100“. Exposure Ever use of e-cigarettes at T0 Outcome Cigarette smoking (even if only a few puffs)	Adjusted model: Adjusted for age, sex, state, immigrant background, type of school, socioeconomic status, various personality traits, and the use of alcohol, cannabis, and other illicit drugs. B1) Never users of tobacco cigarettes, at T0 Outcome: Initiation of conventional cigarette use at T1, RR (95 % CI) <i>Unadjusted:</i> E-cigarette never users at T0: 1.00 E-cigarette ever users at T0: 3.18 (2.55; 3.97) <i>Adjusted</i> E-cigarette never-users at T0: 1.00 E-cigarette ever users at T0: 2.18 (1.68; 2.83) B2) Non-daily users of tobacco cigarettes, at T0 Outcome: Initiation of daily tobacco use (increased use) within the 6-month, RR (95 % CI): <i>Adjusted:</i>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
				E-cigarette never users at T0: 1.00 E-cigarette ever user at T0: 2.88 (1.54; 5.39)
Niaura 2019 [53] USA	<p>Design Prospective cohort (analysis of a subset of participants)</p> <p>Time to follow-up 6-month intervals over 3 years</p> <p>Description of cohort This study used seven consecutive, bi-annual waves of data from the Truth Initiative Young Adult Cohort Study. The sample was recruited via address-based sampling methods to provide a statistically valid representation of the US population. After Wave 1, subsequent waves included a refreshed sample to retain the initial sample size.</p> <p>Study period T0: December 2011 (wave 2)</p>	<p>Population A national sample of US young adult tobacco product users and non-users between the ages of 18 and 34 years at baseline.</p> <p>T0 N=8060 Never use: 3700, 45.9% Non-current use: 2221, 27.5% Dual use: 182, 2.3% Combustible use: 1890; 23.3% E-cig use: 67, 0.8%</p> <p><i>Age</i> Mean (SD) = 25.97 (4.87) years</p> <p><i>Sex, %</i> F: 58%, M: 42%</p> <p><i>Ethnicity, %</i> White: 60.2% Black: 9.3% Hispanic: 22.8% Other: 7.6%</p> <p><i>Education</i> <High school: 9.5% High school: 21.8% Some college: 39.7%</p>	<p>Definition of smokers Categories based on self-reported tobacco product use over the last 30-days: - never use - non-current use (respondents who replied they had used a product but not in the last 30 days) - current use - dual use</p> <p>Combustible tobacco: cigarettes, cigars, pipe tobacco, little cigars/cigarillos, or hookah</p> <p>Exposure past 30-day use of e-cigarettes</p> <p>Outcome Past 30-day use Smoking initiation Smoking cessation</p>	<p>Adjusted model: Transition probabilities between the specified states of interest were estimated in 6-month increments using multistate, continuous time, first-order Markov models. Participant age (in years) at baseline was included as a covariate in the analytic model.</p> <p><i>All data from adjusted model</i></p> <p>B1) never users of combustible tobacco; outcome: use of combustible tobacco product; (transition prob. to combustible and dual use * n t0) 6-month follow-up E-cigarette never users: 46/3700 E-cigarette ever users: 12/67)</p> <p>B2) current users of combustible tobacco; Outcome: use of combustible tobacco product; (transition prob. for combustible and dual use * n t0) 6-month follow-up E-cigarette never users: 1724/1890 E-cigarette ever users: 164/182)</p> <p>B2) current users of combustible tobacco;</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	T6: July 2015 (wave 8)	<p>Bachelor or graduate degree: 29.1%</p> <p>Drop-out rate Initial recruitment rate ranged from 13.5% to 14.9% across all waves Key demographic information provided by 64.2% to 65.7% of households The completion rate ranged from 46.2% to 68.4% The cumulative response rate ranged from 4.4% to 6.6% A total of 9271 unique respondents were sampled, of which 8060 were eligible/available for this analysis.</p>		<p>Outcome: Stop using combustible tobacco product; (transition prob. for only e-cigarette or non-use * n t0) 6-month follow-up E-cigarette never users: 166/1890 E-cigarette ever users: 19/182</p>
Pasquereau 2017 [54] France	<p>Design Prospective cohort study</p> <p>Time to follow-up 6 months</p> <p>Description of cohort Participants recruited through an Access panel for two internet-based survey waves. Recruitment before and after the launch of the</p>	<p>Population Smokers aged 15–85 years.</p> <p>N at T0= 3,000 (2661 tobacco smokers and 229 dual users) N at T1= 2,057 (1805 tobacco smokers and 252 dual users)</p> <p><i>Age:</i> 15–24: 18.1% 25–34: 23.8% 35–49: 34.8% 50-85: 23.4%</p>	<p>Definition of smokers Smokers who defined themselves as current smokers, even if occasionally.</p> <p>Dual use was defined as current use of both e-cigarettes (regularly) and conventional cigarettes (even occasionally).</p> <p>Exposure Regular use of e-cigarettes in the last 30 days at T0</p>	<p>Adjusted model: Adjusted for sex, age, occupational status, level of education, level of income per CU, socio-professional category, size of urban unit, heaviness of smoking index, intention to stop smoking in the next 6 months and quit attempts in the previous 30 days, reported at T0.</p> <p>B2) Tobacco smokers at T0 Outcome: smoking cessation (≥7 days) at T1; n (%) E-cigarette non-user: 165/2661 (6.2%)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>French National Smoking reduction Program (described as a highly emotional media campaign with negative health effect messages). Quotas based on sex, age, occupational status and socio-professional category size of 'urban unit', and region.</p> <p>Study period T0: 2014 T1: 2015</p>	<p>Sex: F: 45.9%, M: 54.1% Ethnicity: NA Education: Less than secondary: 26.4% Secondary: 27.5% Post-secondary: 46.1%</p> <p><i>Intention to quit in the next 6 months at T0:</i> No: 56.2%, Yes: 43.8%</p> <p><i>Number of cigarettes smoked per day:</i> 0–10: 61.8% 11–20: 31.3% >20: 6.9%</p> <p>Drop-out rate Tobacco smokers: 856/2661= 32.2% Dual smokers: 87/229= 38.0%</p>	<p>Outcome <i>Smoking cessation:</i> Smoking abstinence for at least 7 days or at least 30 days.</p> <p><i>Smoking reduction:</i> A minimum of 50% reduction in the number of cigarettes smoked daily since T0 (quitters excluded from analysis).</p>	<p>E-cigarette user: 32/339 (9.4%)</p> <p><i>Adjusted model:</i> E-cigarette non-users at T0: 1.00 E-cigarette users at T0: 1.2 (0.8; 1.9)</p> <p>B2) Tobacco smokers at T0 Outcome: Quit smoking for at least 30 days (n=2,057), AOR (95 % CI) E-cigarette non-users at T0: 1.00 E-cigarette users at T0: 1.1 (0.7; 1.8)</p> <p>B2) Tobacco smokers at T0 Outcome: Minimum reduction of 50% in the number of cigarettes smoked per day, (n=1,860), AOR (95 % CI) E-cigarette non-users at T0: 1.00 E-cigarette users at T0: 2.6 (1.8; 3.8); p>0,001</p>
<p>Penzes 2018 [55] Romania</p>	<p>Design Prospective cohort study</p> <p>Time to follow-up 6 months</p> <p>Description of cohort Secondary analysis of a school-based, cluster</p>	<p>Population 9th grade students participating in both waves.</p> <p>N=1,369 (analytical sample)</p> <p><i>Age:</i> Mean 14.88 (SD 0.48) years at T0</p>	<p>Definition of smokers Experimentation: ever tried smoking (even one or two puffs)</p> <p>Exposure Ever tried e-cigarettes at T0</p> <p>Outcome Use of cigarettes (ever tried smoking)</p>	<p>Adjusted model: Intervention/control condition, gender, and age were included in the analyses in order to control for confounding variables.</p> <p>B1) Never users of tobacco cigarettes, at T0 Outcome: Having tried conventional cigarettes at T1, OR (95% CI): <i>Unadjusted:</i></p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>randomised controlled trial designed to test a web-based multimedia program to prevent smoking initiation (detailed description of the original study design is provided elsewhere [56]). Participants were 9th grade students in Tirgu Mures, Romania, comprised 79 classes from 16 schools, including 2002 students (68.4% providing responses at both T0 and T1, yielding final sample of 1,369). Intervention consisted of five sessions of a web-based, multimedia smoking prevention education program.</p> <p>T0 online self-reported questionnaire carried out one week before the intervention and T1 one week after a booster-session.</p>	<p><i>Sex:</i> F: 54.3%, M: 45.7%</p> <p><i>Ethnicity:</i> Romanian: 52.4%, non-Romanian:47.6%</p> <p><i>Parental education:</i> Na</p> <p>Drop-out rate Not reported. Notes that dropouts were more likely to have low grades (36.9% vs. 28.0%), to report having more friends who smoke (37.6% vs. 30.7%), to be ever smokers (63.7% vs. 48.4%), and to be current smokers (32.2% vs. 21.4%) compared to those who completed the study.</p>		<p>E-cigarette non-users at T0: 1.00 E-cigarette ever users at T0: 2.75 (1.52; 4.96)</p> <p><i>Adjusted:</i> E-cigarette non-users at T0: 1.00 E-cigarette ever users at T0: 3.57 (1.96; 6.49)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	Study period T0: 2014 (November) T1:2015 (May)			
Piper 2019 [57,58] USA	Design longitudinal, observational study Time to follow-up 4-month intervals for 1 year. Description of cohort Recruited via television and social media advertisements Study period T0 T1 (4 months) T2 (8 months) T3 (12 months)	Population Adult, daily smokers who were not interested in quitting smoking in the next 30 days Overall N= 322 Exclusive smokers n=117 Dual users n=205 <i>Age</i> mean (SD) = 42.28 (14.05) <i>Sex, %</i> F: 51.2%, M: 48.8% <i>Ethnicity, %</i> White: 63%, Black: 23%, Other: 14% (Hispanic: 5.3%) <i>Education</i> Less than high school: 9% High school / GED: 29% More than high school: 62%	Definition of smokers Smoking only: smoked ≥ 5 cigarettes per day for the past 6 months and had not used e-cigarettes within the last 3 months Dual users: used nicotine-containing e-cigarettes at least once a week for the past 3 months and smoked daily for the last 3 months, with no plans to quit using e-cigarettes Exposure ≥ 5 cigarettes per day for the past 6 months (smoking only) or smoked daily for the last 6 months (dual use) Outcome Smoking cessation	Adjusted model: Na B2) Current users of cigarettes Outcome: use of cigarettes at 4 month (t1) E-cigarette never users: 135/138 E-cigarette ever users: 209/218 Outcome: Smoking cessation at 4 month (t1) E-cigarette never users: 3/138 E-cigarette ever users: 9/218 B2) Current users of cigarettes Outcome: use of cigarettes at 1 year E-cigarette never users: 114/117 E-cigarette ever users: 190/205 Outcome: Smoking cessation at 1 year E-cigarette never users: 3/117 E-cigarette ever users: 15/205

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
		<p><i>Intention to stop smoking (% yes)</i> 0%</p> <p><i>Cigarettes per day:</i> Overall Mean (SD): 13.68 (8.59) <i>Smokers</i> Mean (SD): 15.73 (10.02) <i>Dual users</i> Mean (SD): 12.52 (7.43)</p> <p><i>Vaping events per day:</i> <i>Dual users</i> Mean (SD): 10.0 (14.2)</p> <p>Drop-out rate 422 enrolled 322 (76.3%) completed the year 1 assessment Total 100 (24%) lost to follow-up T1: 66 lost T2: 18 lost T3: 16 lost</p>		
Primack 2015 [59] USA	Design Prospective cohort study Time to follow-up 1 year	Population Never-smoking young adults age 16-26 years, not susceptible to smoking at T0 in the USA. N at T0=728	Definition of smokers Smoker: having smoked at least 1 puff of a cigarette in her or his lifetime. Exposure E-cigarette use at T0.	Adjusted model: adjusted for age, sex, race/ethnicity, maternal educational level, sensation-seeking tendency, parents and friends smoking B1) Never smokers, at baseline (T1)

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>Description of cohort 2nd and 3rd waves of the Dartmouth Media, Advertising, and Health Study, a national study of adolescents and young adults recruited via random digit dialing using landline and cellular telephone numbers.</p> <p>Study period T0: 2012-2013 T1: 2013-2014</p>	<p>N at T1=507 N primary sample = 694 (analytical sample)</p> <p><i>Age (years); mean (SD):</i> E-cigarette users at T0: 19.5 (2.0) E-cigarette non-users: 20.0 (2.4)</p> <p><i>Sex</i> F: 53.9%, M: 46.1%</p> <p><i>Ethnicity:</i> Non-Hispanic white: 76.5% Non-Hispanic black: 6.8% Hispanic: 7.6% Other: 9.1%</p> <p><i>Maternal education, Mean (SD):</i> <i>E-cig non-users:</i> 6.9 (2.5) <i>E-cig users:</i> 7.5 (1.8)</p> <p><i>Scores ranged from 0 (did not complete eight grade) to 10 (completed a graduate or professional degree).</i></p> <p>Drop-out rate</p>	<p>Outcome Smoking initiation at T1 (ever use of cigarettes).</p>	<p>Outcome: Initiation of cigarette smoking, at 12 months, n (%): E-cigarette non-users at T1: 65/678 (9.6%) E-cigarette ever users at T1: 6/16 (37.5%)</p> <p><i>Adjusted, OR (95 % CI):</i> E-cigarette non-users at T1: 1.00 E-cigarette ever users at T1: 8.3 (1.2; 58.6)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
		Between T0 and T1 221/728 =30.4 %		
Primack 2018 [60] USA	<p>Design Prospective cohort study – Growth from Knowledge</p> <p>Time to follow-up 18 months</p> <p>Description of cohort Participants from the Growth from Knowledge nationally representative probability based online access panel (USA). Recruitment through random digit dialing and address-based sampling.</p> <p>Study period T0: 2013 (March) T1: 2014 (October)</p>	<p>Population Participants were noninstitutionalised English-speaking never-smoking young adults (age 18-30) in the USA.</p> <p>N at T0= 1,506 never-smoking young adults N at T1= 915 (60.8%) completed follow-up</p> <p><i>Age:</i> 18–20: 21.8% 21–23: 32.7% 24–26: 24.2% 27–30: 21.4%</p> <p><i>Sex:</i> F: 61.6%, M: 38.4 %</p> <p><i>Ethnicity:</i> White, non-Hispanic:64.8% Black, non-Hispanic: 10.9% Hispanic: 14.2% Other: 10.1%</p> <p><i>Education:</i> High school or less: 28.0% Some college: 39.6%</p>	<p>Definition of smokers Never use of cigarettes, even if only one puff.</p> <p>Exposure Respondents asked if they had ever smoked e-cigarettes at T0.</p> <p>Outcome Smoking initiation: never smoking at T0 but having had at least a puff of a cigarette at T1.</p>	<p>Adjusted model: Multivariable model adjusted for ever e-cig use, age, sex, ethnicity, relationship statues, living situation, household income, education level, self-esteem, sensation seeking, rebelliousness.</p> <p>B1) Never smokers, at (T0) Outcome: Initiation of cigarette smoking, at 18 months, n (%): E-cigarette never users at T0: 81/899 (9.0%) E-cigarette ever users at T0: 6/16 (37.5%)</p> <p><i>Unadjusted, OR (95 % CI):</i> E-cigarette never users at T0: 1.00 E-cigarette ever users at T0: 7.98 (1.87; 34.1)</p> <p><i>Adjusted, OR (95 % CI):</i> E-cigarette never users at T0: 1.00 E-cigarette ever users at T0: 6.82 (1.65; 28.25)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
		Bachelor's degree or higher: 32.5% Drop-out rate 591/1506 =39.2 %		
Selya 2018a [61] USA	Design Prospective cohort study – Social and Emotional Contexts of Adolescent Smoking Patterns Study (SECASP) Time to follow-up 5- (T5), 6- (T6), 7- (T7) and 8-year (T8) follow-up Description of cohort Adolescent smokers, in 9 th and 10 th grade, from 16 high schools in Chicago, USA Novice smokers (smoked <100 cigarettes/ lifetime, light smokers (smoked >100 cigarettes/lifetime and smoked within the past 30 days but smoked ≤5 cigarettes/day), and a random sample of nonsmokers asked to	Population Adolescent smokers in the greater Chicago area. Excluding non-smokers of conventional cigarettes. N= 3654 invited N=1263 enrolled at T1N at T8: 1,007 N at T8= 586 (analytical sample, excluding 421 nonsmokers of conventional cigarettes throughout the study). <i>Age, mean (SD) at T8</i> 24.3yrs. (0.8) <i>Sex</i> F: 42.0%, M: 58.0% <i>Ethnicity):</i> White: 75.9% Nonwhite: 24.1% <i>Parental education: Na</i>	Definition of smokers Novice smokers: smoked <100 cigarettes/lifetime Light smokers: smoked >100 cigarettes/lifetime and smoked within the past 30 days but smoked ≤5 cigarettes/day. Exposure Smoking reduction: E-cigarette use (ever tried) at T8. Smoking cessation: E-cigarette use (ever tried) at previous wave. Outcome Smoking cessation: smoking frequency at the next sequential wave. Smoking frequency (no. of days) in the past 30 days	Models adjusted for: age, sex, white race/ethnicity, and past-week smoking frequency and time varying intercept. B2) Smokers at T5 Outcome: Smoking reduction at follow-up (frequency during the past month (95% CI)): Non-e-cigarette users: 0.0 (ref index) E-cigarette users, NDSS <1.2: 1.8 (0.2; 3.2) E-cigarette users, NDSS 1.2-3.4: 0.5 (-0.8; 1.9) E-cigarette users, NDSS >3.4: -5.6 (-8.2; -3.1) <i>E-cigarette users in general: Recent e-cig use was not associated with past month smoking frequency.</i> B2) Smokers at T5, using e-cigarettes to quit. Outcome: Smoking reduction after one-year follow-up (frequency during the past month (95% CI)): Non-e-cigarette users: 0.0 (ref index) E-cigarette recent users: 0.1 (-0.2;0.4) B2) Smokers at T5, NOT using e-cigarettes to quit.

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	<p>participate (N=3,654). 1,263 consented to participated and completed T= survey. Retention at year 8= 79.7%.</p> <p>Data presented from the 5-, 6-, 7-, and 8-year follow-ups.</p> <p>Study period T0: 2006 T8: 2014</p>	<p>Drop-out rate 1,007/1,263= 20.3%</p>		<p>Outcome: Smoking reduction after one-year follow-up (frequency during the past month (95% CI)): Non-e-cigarette users: 0.0 (ref index) E-cigarette users, NDSS <1.2: 1.1 (0.2; 2.0) E-cigarette users, NDSS 3.1-3.8: 0.9 (0.2-1.6)</p> <p><i>The odds of using e-cigarettes to quit smoking were nonsignificant across the full range of NDSS</i></p>
Selya 2018b [62] USA	<p>Design Prospective cohort study – Social and Emotional Contexts of Adolescent Smoking Patterns Study (SECASP)</p> <p>Time to follow-up Annual follow-up year 5, 6, 7 and 8 (T5–T8)</p> <p>Description of cohort Adolescent smokers, in 9th and 10th grade, from 16 high schools in Chicago, USA</p>	<p>Population Adolescent smokers in the greater Chicago area. Excluding non-smokers of conventional cigarettes.</p> <p>N= 3654 invited N=1263 enrolled at T1 N at T8= 1,007 N at T8= 586 (analytical sample, including 421 nonsmokers of conventional cigarettes throughout the study). The sample contained 299 participants who reported past month e-cigarette use at any of</p>	<p>Definition of smokers Novice smokers: smoked <100 cigarettes/lifetime</p> <p>Light smokers: smoked >100 cigarettes/lifetime and smoked within the past 30 days but smoked ≤5 cigarettes/day.</p> <p>Exposure e-cigarette use during the past 30-days, assessed at each wave</p> <p>Outcome Smoking frequency (no. of days) in the past 30 days the respondent had</p>	<p>Models adjusted for: NA</p> <p>B2) Smokers (novice or light) at T5-T8 Outcome: Smoking reduction at follow-up (frequency during the past month (95% CI)): Non-e-cigarette users: 0.0 (ref index) E-cigarette users: 0.021 (-0.00; 0.04) Group difference: p=0.081</p> <p><i>These results fail to show that e-cigarette use is associated with changes in later conventional smoking, either directly or via nicotine dependence</i></p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>Novice smokers (smoked <100 cigarettes/ lifetime, light smokers (smoked >100 cigarettes/lifetime and smoked within the past 30 days but smoked ≤5 cigarettes/day), and a random sample of nonsmokers asked to participate (N=3,654). 1,263 consented to participated and completed T= survey. Retention at year 8= 79.7%.</p> <p>Data presented from the 5-, 6-, 7-, and 8-year follow-ups.</p> <p>Study period T0: 2006 T8:2014</p>	<p>the four waves. 254 were dual users.</p> <p><i>Age at T8, median (IQR):</i> 23.6y (0.6)</p> <p><i>Sex</i> F: 61.7%, M: 38.3%</p> <p><i>Ethnicity:</i> White: 73.9%, Non-white: 26.1%</p> <p><i>Parental education:</i> Na</p> <p>Drop-out rate Drop-out rate T0–T5: 237/1263, 18.8% Drop-out rate T0–T8: 256/1263, 20.3%</p>	<p>smoked or tried cigarettes, assessed at each wave.</p>	
<p>Spindle, T. R. 2017 [63] USA</p>	<p>Design Prospective cohort study - Subset of the Spit for Science (S4S) project</p> <p>Time to follow-up 1-year follow-up</p>	<p>Population University students (freshmen) aged 18 or older who provided response at T0 and T1. (n=3757).</p> <p>N at T0 5,779 N at T1 = 4,748</p>	<p>Definition of smokers Ever cigarettes/e-cigarette users: use of products at least once.</p> <p>Current cigarettes/e-cigarette users: use of products at least once in the past 30 days.</p>	<p>Model adjusted for gender, age, ethnicity, psychological characteristics, impulsivity and other (other tobacco use). Reported as OR (95% CI)</p> <p><i>Unadjusted data:</i> 1B) Never smokers at T0 Outcome: Only cigarette ever users at T1:</p>

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	<p>Setting Description of cohort: A subset of the S4S, a longitudinal study (online survey) of university students aimed at assessing genetic and environmental influences on substance use and emotional health.</p> <p>All freshmen aged 18 or older were invited, approximately 70 % response rate.</p> <p>Study period T0: 2014 T1: 2015</p>	<p>N=3,757 (analytical sample)</p> <p><i>Age:</i> Mean (SD): 18.5yrs. (0.43)</p> <p><i>Sex:</i> F: 62%, M: 38%</p> <p><i>Ethnicity:</i> White: 47% Black: 19% Asian: 17% Hispanic/Latino:6% Mixed race/ethnicity: 7%. Other: 4%</p> <p><i>Parental education:</i> Na</p> <p>Drop-out rate 2022/5779 (35.0%)</p>	<p>Exposure Ever use of e-cigarettes at T0 (use of product at least once)</p> <p>Past 30 days e-cigarette use (current use): use of product at least once in the last 30 days.</p> <p>Outcome Ever use of cigarettes: Use of product at least once</p> <p>Past 30 days use of cigarettes (current use): use of product at least once in the last 30 days</p>	<p>Never e-cigarette users: 154/2163 (7.1%) Ever e-cigarette users: 8/153 (5.2%)</p> <p>1B) Never smokers at T0 Outcome: dual ever users at T1: Never e-cigarette users: 76/2163 (3.5%) Ever e-cigarette users: 37/153 (24.2%)</p> <p>B1) Never smokers at T0 Outcome: pooled cigarette or dual ever users at T1 Never e-cigarette users: 230/2163 (10.6%) Ever e-cigarette users: 45/153 (29.4%)</p> <p>1B) Never cigarette smokers at T0 Outcome: Only cigarette current users at T1: Never e-cigarette users: 18/2163 (0.8%) Ever e-cigarette users: 8/153 (5.2%)</p> <p>1B) Never cigarette smokers at T0 Outcome: dual current users at T1: Never e-cigarette users: 9/2163 (0.4%) Ever e-cigarette users: 3/153 (2 %)</p> <p>B1) Never smokers at T0 Outcome: pooled cigarette or dual current users at T1 Never e-cigarette users: 27/2163 (1.2%) Ever e-cigarette users: 11/153 (7.2%)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
				<p><i>All data below are from adjusted models:</i></p> <p>1B) Never smokers at T0 Outcome: Cigarette ever users at T1: Never e-cigarette users: OR:1.0 Ever e-cigarette users: 3.37 (1.91; 5.94)</p> <p>1B) Never smokers at T0 Outcome: Current cigarette use at T1: Never e-cigarette users: OR:1.0 Ever e-cigarette users: 3.30 (1.20; 9.05)</p>
Stanton 2019 [64] USA	<p>Design Longitudinal study (PATH)</p> <p>Time to follow-up 1 year</p> <p>Description of cohort PATH cohort is a nationally representative longitudinal cohort study of USA youth (12–17 years) and adults (18+ years). Briefly, participants were recruited via a stratified, address-based, area-probability sample design. Data were collected in the household using audio</p>	<p>Population Longitudinal analysis restricted to participants from the PATH cohort with complete data for all variables needed in the analysis, and who were 17 at T0 and not older than 18 at T1.</p> <p>Ever cigarette n=1589 Never cigarette n=10 393 Never cigarette, never ENDS n=9932 Never cigarette, ever ENDS n=425 Ever ENDS n=1257 Never ENDS n=10 699 Never ENDS, ever cigarette</p>	<p>Definition of smokers Never-use: never used an individual tobacco product or any product in a category of products. Ever use: Used the product at least one or two times/puffs, irrespective of use status of any other tobacco product</p> <p>Cigarette naïve ENDS user: user of ENDS who has never smoked a cigarette</p> <p>Exposure 30-day 12-month</p> <p>Outcome Past 30-day use of cigarettes, change in the number of days that cigarettes were smoked in the last 30 days</p>	<p>Adjusted model: Unweighted models that use propensity score matching, logistic regression. The following variables were included in the construction of the propensity scores for these primary models: sex, race, ethnicity, education, allowance, live with a smoker, parental education, house tobacco use rules, house access to tobacco products, family structure.</p> <p>B1)* never users of cigarettes (cigarette-naïve) Outcome: ever cigarette smoking Never e-cigarette users: 390/9932 Ever e-cigarette users: 78/425</p> <p><i>Adjusted model</i> Adjusted OR (95%CI) = 3.21 (1.95 to 5.45)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>computer-assisted self-interviews administered in English or Spanish.</p> <p>Study period T0: 2013–2014 T1: 2014–2015</p>	<p>n=755</p> <p>Age: 17 yrs.</p> <p>Sex, %: NA</p> <p>Ethnicity, %: NA</p> <p>Education: NA</p> <p>Drop-out rate T0: N= 13651 T1: N= 12172 The weighted response rate for the T0 household screener was 54.0%. Among screened households, the overall weighted response rate was 78.4% for the youth interview, with a weighted retention rate of 88.4% for continuing youth at T1.</p> <p>Youth with data available from T0 and T1 (N=11996)</p> <p>Selected subset for longitudinal analysis: Participants with complete data on variables needed for the study, who were</p>	<p>Ever use of cigarettes, initiation of smoking</p>	<p>B2)* ever users of cigarettes Outcome: change in the mean number of smoking days in the past 30 days between W1 and W2 Never e-cigarette users (n=712), days (95%CI) = 1.44 (0.93 to 1.95) Ever e-cigarette users (n=785), days (95%CI) = 2.08 (1.40 to 2.76) Group difference (95% CI) = non-significant</p> <p><i>Adjusted model</i> Beta (95% CI) = 0.31 (0.76 to 1.39); p=0.57</p> <p>*Weighted sample based on 1915 individuals.</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
		17 at t0 and not older than 18 at t1 (N=1915).		
Sutfin, E. L. 2015 [65] USA	<p>Design Prospective cohort study – the Smokeless Tobacco Use in College Students study.</p> <p>Time to follow-up 3 years (6 waves), Wave 6 = T5</p> <p>Description of cohort First-semester college students at 7 colleges in North Carolina and 4 in Virginia, USA. Nine of the colleges were public and 2 privates.</p> <p>4902 students invited at T0, 3146 completed baseline survey (response rate 64.2%). Data collected through an online survey.</p> <p>Study period T0: 2010 (fall) T1: 2011 (spring) T2: 2011 (fall)</p>	<p>Population First-semester college students, cigarette smokers but not e-cigarette users at T0.</p> <p>N=669 (cigarette smokers with no history of e-cigarette use at T0) N=581 (after exclusion of those who were not current smokers when trying e-cigarettes) N= 271 (analytical sample, after exclusion due to missing data))</p> <p><i>Age</i> M (SD) = na</p> <p><i>Sex</i> F= 51.7%, M= 48.3%</p> <p><i>Race</i> White: 89.7%, Non-White: 10.3%</p> <p><i>Ethnicity</i> Hispanic: 5.9%, Non-Hispanic: 94.1%</p> <p><i>Maternal education:</i></p>	<p>Definition of current smokers: Current smokers: Respondents who have smoked a whole cigarette in the past 30 days.</p> <p>Exposure Self-reported trial or use of e-cigarettes. Trying e-cigarettes was defined as use of e-cigarettes in the past 6 months between T1 and T4, and still being a current cigarette smoker. Users having tried e-cigarettes at T0 and first users at T5 were excluded.</p> <p>Outcome Current cigarette smoking at T5</p> <p>Smoking frequency: number of days smoked in the past month (1–2; 3–14; 15–30)</p>	<p>Model adjusted for: demographics, membership in fraternities or sororities, lifetime other tobacco use, family members' and friends' smoking, sensation seeking, and trying e-cigarettes during waves 2 to 5</p> <p>B2) Trial or use of e-cigarettes between T0 and T4 among baseline smokers. Outcome (adjusted model): Current cigarette use at T5 (OR (95% CI): Never e-cigarette users: OR:1.0 E-cigarette ever users: OR: 2.48 (1.32 to 4.66)</p> <p>B2) Trial or use of e-cigarettes between T0 and T4 among baseline smokers. Outcome (adjusted model): Non-use of cigarettes at T5 (OR (95% CI): Never e-cigarette users: OR:1.0 E-cigarette ever users: OR: 0.40 (0.21 to 0.76)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	T3: 2012 (spring) T4: 2012 (fall) T5: 2013 (fall)	College degree or higher: 59.4% Smoking frequency at T0 (days per month): 12: 39.1% 3–15: 39.5% >15: 21.4% Drop-out rate 310/581 (53.4%)		
Treur 2018 [66] The Netherlands	Design Prospective cohort stud (Cohort I) Time to follow-up 6 months Data collected between 2014 and 2015 from 19 secondary schools randomly selected in the Netherlands. Consisted of 6,819 adolescents (age 11-17yrs.) enrolled in a study that investigated the impact of school smoking policy on changes in smoking behavior. Study period	Population Dutch adolescents from secondary schools. Of the total of 6819 adolescents, 2100 had longitudinal data available on smoking and alternative tobacco use. N= 6819 <i>Age, mean (SD):</i> 13.8y (1.1) <i>Sex</i> F: 48.2%, M 51.8 % <i>Ethnicity (parental):</i> Netherlands: 81.6%Surinam/Aruba/ Netherlands Antilles: 1.9% Morocco:3.1%, Turkey: 2.1% Other: 10.6%, NA: 0.7%	Definition of smokers <i>Non-smokers:</i> never smoked cigarettes or only tried once or twice <i>Ever smoker:</i> Not non-smoker <i>Current smokers:</i> smoked occasionally or daily Exposure Self-reported trial or use of e- cigarettes (ever use) at T0. Outcome Ever smoker of cigarettes	Model adjusted for: age, sex, educational attainment, composite score of smoking propensity at T1, interaction term between propensity to smoke and ever use of e- cigarettes with nicotine/e-cigarettes without nicotine/waterpipe B1) Non-smokers at T0 Outcome (adjusted): Ever cigarette use at T1; (N=2100), OR (95%CI): Never e-cigarette users: 1.00 Ever nicotine e-cigarette users: 11.90 (3.36; 42.11) B1) Non-smokers at T0 Outcome (adjusted): Ever cigarette use at T1; (N=2099), OR (95%CI): Never e-cigarette users: 1.00 Ever non-nicotine e-cigarette users: 5.36 (2.73; 10.52)

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	2014–2015	Parental education: Na Drop-out rate Na		Adjusted pooled models: Outcome (adjusted): Ever cigarette use at T1; OR (95%CI): E-cigarette never users at T1: OR:1.0 E-cigarette ever users at T2: OR: 6.40 [3.53, 11.60]
Verplaetse T. L. 2019 [67] USA	Design Cohort study – US Population Assessment of Tobacco and Health (PATH), wave 1 and 2. [1] Time to follow-up Follow-up: 1 year Description of cohort Non-institutionalised US population 12 years of age and older., including 45 971 participants from across the USA in wave 1, of which (32 320 were adults aged 18 and older and 13651 were youths aged 12–17). Weighted response rate T0 74%. Data collection by in- household audio- computer assisted	Population Adults (≥18 years), who smoked conventional cigarettes at baseline, and completed follow- up. N at T0 = 32,320 N at T1 = 28,362 <i>Age at baseline</i> Men: 18–29: 38.6% 30–44: 24.5% >45: 36.9% Women: 18–29: 38.0% 30–44: 25.0% >45: 36.9% <i>Sex</i> No information <i>Ethnicity:</i> <i>Men:</i>	Definition of smokers <i>Current smoker:</i> having smoked at least 100 cigarettes in their life and currently smoke every day or some days. <i>Former smoker:</i> having smoked at least 100 cigarettes in their life but currently do not smoke at all. <i>Quit:</i> current smoker at wave 1, but not at wave 2. Exposure <i>Daily e-cigarette users:</i> current use every day at T0. <i>Nondaily e-cigarette users:</i> current use some days at T0. <i>Never e-cigarette users:</i> Never having used an e-cigarette in the past 12 months at T0. Outcome	Adjusted model <i>Age, race, and education were evaluated as potential covariates and were removed from the final models if there was no impact on the pattern of results.</i> <i>All data from adjusted models:</i> B2) Smokers at T0 Outcome: Stopped smoking at T1: Never e-cigarette users: OR:1.0 Nondaily e-cigarette users: OR 0.83 (0.68; 1.02) Daily e-cigarette users: OR 1.56 (1.12; 2.18) E-cigarette user (Pooled): 0.98 (0.83, 1.16) B2) Female smokers at T0 Outcome: Stopped smoking at T1: Never e-cigarette users: OR:1.0 Nondaily e-cigarette users: OR 0.81 (0.61–1.07) Daily e-cigarette users: OR 1.41 (0.89–2.22) B2) Male smokers at T0 Outcome: Stopped smoking at T1:

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	<p>self-interviews in English and Spanish. Address-based area probability sample design.</p> <p>Study period T0: 2013–2014 T1: 2014–2015</p> <p>Time to follow-up 1 year</p> <p>Setting A nationally representative sample of adults (≥18 years), who smoked conventional cigarettes at baseline, and completed wave 2 follow-up of PATH</p> <p>Study period Wave 1: 2013–2014 Wave 2: 2014–2015</p>	<p>Caucasian: 61.4% African American: 13.3% Hispanic: 17.4% Other: 7.9%</p> <p><i>Women:</i> Caucasian: 60.1% African American: 15.0% Hispanic: 17.5% Other: 7.4%</p> <p><i>Educational level:</i> <i>Men:</i> Less than high school or general educational development: 22.0 Completed high school or some college: 57.3% Bachelor’s degree or higher: 20.8%</p> <p><i>Women:</i> Less than high school or general educational development: 18.1% Completed high school or some college: 60.2% Bachelor’s degree or higher: 21.6%</p> <p>Drop-out rate NA</p>	<p>Use of cigarettes at follow-up</p>	<p>Never e-cigarette users: OR:1.0 Nondaily e-cigarette users: OR 0.85 (0.65–1.12) Daily e-cigarette users: OR 1.73 (1.05–2.84) E-cigarette user (Pooled): 1.84 (1.27, 2.68)</p>
Watkins, LS.	Design	Population	Definition of smokers	<i>Adjusted model</i>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
2018 [68] USA	<p>Prospective cohort – US Population Assessment of Tobacco and Health (PATH), wave 1 and 2. [1]</p> <p>Time to follow-up 1 year</p> <p>Description of cohort A nationally representative longitudinal cohort of 13 651 US youth, aged 12–17 years at T0. Stratified area probability sample design. Questionnaires were administered through in-person computer-assisted interviews at home.</p> <p>The PATH youth sample consisted of individuals whose parent were sampled for the PATH adult survey, up to two youths per household. The weighted response rate for the youth survey was 78.4% at T0.</p>	<p>Youths 12-17 years, who never smoked a conventional cigarette at T0 and completed the first two waves of the PATH-study.</p> <p>N = 10,384</p> <p><i>Age at baseline</i> Mean (SD): 14.3 (1.7) years</p> <p><i>Sex</i> F: 49.1%, M: 50.9%</p> <p><i>Ethnicity:</i> White: 52.5%, African American:13.9% Latino: 22.3%, Other: 11.3%</p> <p><i>Parent’s educational level</i> Bachelor’s degree or higher: 44.8%</p> <p>Drop-out rate PATH youth retention at follow-up was 87.9%</p>	<p><i>Ever use:</i> Having ever smoked a cigarette, even 1 or 2 puffs.</p> <p><i>Past 30-day use:</i> Having smoked a cigarette at least 1 day in the past 30 days.</p> <p>Exposure Ever use (even once or twice) and past 30-day use of e-cigarettes and former use: used but not in the past 30-days at T0.</p> <p>Outcome Ever use and past 30-day use of cigarettes at T1</p>	<p>Model includes all ever tobacco use categories and the following T0 covariates: female, age, race/ethnicity, parental educational level, urban residence, sensation seeking, alcohol ever use, living with tobacco user, notice of cigarette warning labels, tobacco advertising receptivity, and summer season.</p> <p>B1) Never smokers at T0 Outcome: Cigarette ever users at T1 (n=469)*: Never e-cigarette users: 387/9923** (3.9%) Ever e-cigarette users:81/425** (19.1%)</p> <p><i>Adjusted model, OR (95%CI):</i> Never e-cigarette users (n=9923**): OR:1.0 Ever e-cigarette users (n=425**): OR 2.53 (1.80–3.56)</p> <p>B1) Never smokers at T0 Outcome: Cigarette Past-30-day users at T1 (n=219)*: Never e-cigarette users: 179/9923** (1.8%) Ever e-cigarette users:35/425** (8.2%)</p> <p><i>Adjusted model, OR (95%CI):</i> Never e-cigarette users (n=9923**): OR:1.0 Ever e-cigarette users (n=425**): 1.87 (1.15-3.05)</p>

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	Study period T0: 2013–2014 T1: 2014–2015 (PATH)			*weighted for nonresponse **No. of observations before multiple imputation.
Weaver 2018 [69] USA	Design Prospective cohort study - GfK's Knowledge Panel) Time to follow-up 1 year Description of cohort Participants were recruited from GfK's Knowledge Panel, a probability-based web-panel designed to be representative of non-institutionalised U.S. adults. A sample of 1,284 current established smokers was identified among respondents to the Tobacco Products and Risk Perception Survey for a 12-month follow-up survey. Study period 2015-2016	Population A random probability sample of current adult smokers N= 1284 invited at T0 N=1018 invited for follow -up at T1 N=858 (analytical sample) <i>Current smokers:</i> All baseline smokers (n=822) <i>Current daily smokers:</i> Baseline daily smokers (n=613) <i>Mean age (SD):</i> Any ENDS Use During Study 41.5 (39.1; 44.0) years No ENDS Use 45.1 (43.1; 47.2) years <i>Sex</i> Women: 409 (47.9%), Men: 445 (52.1%) <i>Race/ethnicity:</i> White, Non-Hispanic N= 656, Black, Non-Hispanic N= 69,	Definition of smoking Current smokers: smoked at least 100 cigarettes in lifetime and reported smoking cigarettes every day or some days. Current daily smokers: smoked at least 100 cigarettes in lifetime and reported smoking cigarettes everyday Smoking abstinence (quitter): Not smoking in the past 30 days, not even one or two puffs. Exposure <i>Use of e-cigarettes defined as currently using ENDS, "everyday", "some days", or "rarely". ENDS use assessed at T0</i> <i>Users were categorized as daily e-cigarette users if they reported daily use of ENDS or using ≥25 days during the past 30 days at either baseline or follow-up otherwise non-daily user.</i>	Model adjusted for: baseline perceptions of addiction, cravings to smoke, cigarettes smoked per day, number of years having smoked, past year quit attempts, use of nicotine replacement therapy, poly-use of other combusted tobacco, smoker regret, socio-demographics (age, gender, race/ethnicity, education, household income, MSA status, marital status, sexual orientation, US Census region, children in household), perceived physical health, presence of asthma, chronic bronchitis or COPD, receiving psychological therapy, alcohol consumption, and past year participation in other tobacco studies through GfK. <i>Unadjusted model</i> B2 Current smokers at T0 Outcome: stopped smoking (≥30 days) at T1 E-cigarette users at T0: 87/582 (14.9%) Not e-cigarette user at T0: 25/240 (10.4%) B2 Daily smokers at T0 Outcome: stopped smoking (≥30 days) at T1 E-cigarette users at T0: 39/440 (8.9%)

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
		<p>Other, Non-Hispanic N=22, Hispanic, Any Race N= 82, 2+ Races, Non-Hispanic N= 25</p> <p><i>Educational level (highest education received on 14-level scale, higher score = higher educated) :</i> Any ENDS use during study: 9.1 (8.7; 9.6) No ENDS use: 9.4 (9.2; 9.7)</p> <p>Any ENDS use during study: 3.97 (3.7, 4.2) No ENDS use: 4.2 (4.0, 4.4)</p> <p><i>Average cigarettes smoked per day at T0, mean (95% CI):</i> Any ENDS use during study: 11.4(10.0; 12.7) No ENDS use: 10.5 (9.4; 11.6)</p> <p>Drop-out rate N= 426/1284 (33,2 %) Response rate for follow-up survey 84%</p>	<p>Outcome Smoking abstinence for at least 30 days at follow-up.</p>	<p>Not e-cigarette user at T0: 13/173 (7.5%)</p> <p>B2 Current smokers at T0, e-cigarette use during T0-T1 Outcome: stopped smoking (≥30 days) at T1 No e-cigarette use: 83/486 (17.7%) Non-daily e-cigarette use: 19/283 (6.7%) Daily e-cigarette use: 10/53 (18.9%)</p> <p>B2 Daily smokers T0, e-cigarette use during T0-T1 Outcome: stopped smoking (≥30 days) at T1 No e-cigarette use: 36/365 Non-daily e-cigarette use: 7/213 Daily e-cigarette use: 9/35</p> <p><i>Adjusted model</i></p> <p>B2) Current smokers at T0 Outcome: Stopped smoking (≥30 days) at T1; AOR (95 % CI): Never e-cigarette users: OR:1.0 Ever e-cigarette users: OR 0.30 (0.13; 0.72)</p> <p>B2) Daily smokers at T0 Outcome: Stopped smoking (≥30 days) at T1; AOR (95 % CI): Never e-cigarette users: OR:1.0 Ever e-cigarette users: OR 0.37 (0.13; 1.05)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
				<p><i>Number of cigarettes smoked (adjusted)</i></p> <p>B2) Current smokers at T0, non-quitter at T1 Outcome: average cigarette consumption at T1 (n, adjusted mean difference (95% CI)) No e-cigarette use at T0, n=469: 1.0 E-cigarette use at T0, n=211: -0.56 (-1.68; 0.56)</p> <p>B2) Daily smokers at T0, non-quitter at T1 Outcome: average cigarette consumption at T1 (n, adjusted mean difference (95% CI)) No e-cigarette use at T0, n=386: 1.0 E-cigarette use at T0, n= 157: -0.99 (-2.26; 0.29)</p>
<p>Wills 2017 [70] USA</p>	<p>Design Prospective cohort study</p> <p>Time to follow-up 1 year</p> <p>Description of cohort School-based (paper questionnaire filled in in classroom) survey of 9th and 11th grade from four public and two private schools on Oahu students in Hawaii. Response rate at T0 was 70 % and at T1 71%.</p>	<p>Population Adolescents in 9th-11th grade graders, 42% were 10th graders and 9% were 11th graders</p> <p>N= 2,338 (T0) N= 2239 (T1) N=1302 (T1, with complete data)</p> <p><i>Age, mean age (SD):</i> 14.7y (0.7) 49% of students were in 9th grade, 42% in 10th grade, 9% in 11th grade. Age range 14–16 years.</p>	<p>Definition of smokers <i>Smoking was categorized on a 0–6 scale from 'I have never smoked cigarettes in my life' to 'I usually smoke cigarettes every day'</i></p> <p><i>Never smokers:</i> Have never tried cigarettes in my life</p> <p><i>Ever smokers:</i> Have tried cigarettes</p> <p>Exposure Ever use of e-cigarettes at T0</p> <p>Outcome <i>Smoking initiation:</i></p>	<p>Regression analysis adjusted for T1 e-cigarette use, age, gender, ethnicity, parental education, parental support and rebelliousness</p> <p><i>Unadjusted models</i></p> <p>B1) never smokers at T0 Outcome: cigarette smoker (exclusive) at T1; n(%) Ever e cigarette users: 1/215 (0.5%) Never e-cigarette users: 15/926 (1.6%)</p> <p>B1) never smokers at T0 Outcome: dual use at T1; n(%) Ever e cigarette users: 41/215 (19.1%)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>Study period T0: 2013 T1:2014</p>	<p><i>Sex</i> F: 53%, M: 47%</p> <p><i>Race/ethnicity:</i> Asian-American: 24% Caucasian: 19% Filipino-American: 27% Native Hawaiian/Other Pacific Islanders: 20% Other: 10%</p> <p><i>Parental (mean paternal) education:</i> 4.2 (SD=1.2) on a 1-6 scale with anchor points grade school and post-college.</p> <p>Drop-out rate 99 between T0 and T1 99/2,338 =4.2 %</p>	<p>T0 never-smokers who reported ever smoking at T1</p>	<p>Never e-cigarette users: 35/926 (3.8%)</p> <p>B1) never smokers at T0 Outcome: all cigarette smokers T1 (pooled); n(%) Ever e cigarette users: 42/215 (19.5%) Never e-cigarette users: 50/926 (5.4%)</p> <p><i>Adjusted models</i></p> <p>B1) Never smokers at T1 Outcome: Ever smoking at T2, AOR (95 % CI): Never e-cigarette users: 1.0 Ever e-cigarette users: 2.87 (2.03; 4.05), p=0.0001</p>
Wills 2016 [71] USA	<p>Design Prospective cohort study</p> <p>Time to follow-up 1 year</p> <p>Description of cohort School-based (paper questionnaire filled in in classroom) survey of 9th</p>	<p>Population Non-smoking adolescents in grade 911. <i>The sample is the same as in the report by Wills et al 2017 [70]</i></p> <p>N= 2,338 (T0) N= 2,239 (T1)</p> <p><i>Age, mean age (SD): 14.8 (0.7)</i></p>	<p>Definition of smokers <i>Never smokers:</i> Have never tried cigarettes in my life <i>Ever smokers:</i> Have tried cigarettes</p> <p>Exposure Ever use of e-cigarettes at T0</p> <p>Outcome</p>	<p>Model adjusted for gender, ethnicity, father's education.</p> <p><i>Unadjusted model</i></p> <p>B1) Never-smokers at T0 Outcome: ever-smoker at T1; n (%) Ever e-cigarette users at T0: 50/922 (5.4%) Never e-cigarette users at T0: 42/210 (20%)</p> <p><i>Adjusted models:</i></p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>and 11th grade from four public and two private schools on Oahu students in Hawaii. Response rate at T0 was 70 % and at T1 67%.</p> <p>Study period T0: 2013 T1:2014</p>	<p>Sex F: 57% M: 43%</p> <p>Race/ethnicity: Asian-American background (Chinese, Japanese or Korean): 34%, Caucasian: 17% Filipino-American: 25% Native Hawaiian or another Pacific Islander: 17% Other: 7%</p> <p><i>Parental (mean paternal) education:</i> 4.3 (SD=1.1) on a 1-6 scale with anchor points grade school and post-college.</p> <p>Drop-out rate 99 between T0 and T14.2% for full cohort, not available for non-smokers at T0.</p>	<p>Smoking initiation (T1 never-smokers who reported any smoking at T2) among youth with low or high propensity to smoke.</p>	<p><i>Persons who had used e-cigarettes were more likely to smoke. (Model estimate (95% CI))</i> Index:0.0 E-cigarette use: 0.80 (0.45;1.15)</p> <p><i>High-risk participants (high propensity to smoke) were more likely to start smoking</i> Index: 0.0 Propensity to smoke: 0.39 (0.12; 0.65)</p> <p><i>Interaction effect in the model:</i> Index: 0.0 E-cigarette use x propensity: -0.13 (-0.23; -0.03)</p>
<p>Zhuang, Y. L. 2016 [72] USA</p>	<p>Design Longitudinal cohort study - Population drawn from GfK's Knowledge Panel</p> <p>Time to follow-up</p>	<p>Population Adult smokers in the US</p> <p>N= 2,028</p> <p><i>Age, %</i></p>	<p>Definition of smokers Smokers were defined as those who had smoked at least 100 cigarettes in their lifetime and smoked every day or some days at the time of the survey</p>	<p>Adjusted model: Logistic regressions adjusted for baseline social demographics (age, gender, education ($\leq 12y / > 12y$), ethnicity, cigarettes per day (CPD) and intention to quit smoking.</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
	<p>2 years</p> <p>Description of cohort A representative sample of 2028 US adult smokers (probability sample recruited through random dialling and address-based sampling.) of the US population.</p> <p>Study period T0: 2012 T1:2014</p>	<p><i>18–24 years:</i> Long-term users: 26.5 Short-term users: 15.3 Non-users: 9.6</p> <p><i>25–44 years:</i> Long-term users: 16.8 Short-term users:40.0 Non-users:40.5</p> <p><i>45–64 years:</i> Long-term users: 51.0 Short-term users:38.8 Non-users: 40.2</p> <p><i>65+ years</i> Long-term users:5.8 Short-term users:5.9 Non-users: 9.7</p> <p><i>Sex, %</i> Long-term users: F: 51.5, M: 48.5 Short-term users: F: 47.0, M: 53.0 Non-users: F: 48.2, M: 51.8</p> <p><i>Ethnicity, %</i> <i>Non-Hispanic white:</i> Long-term users: 77.3 Short-term users: 72.3 Non-users: 64.5</p>	<p>Exposure Used e-cigarettes on at least 10 days in the last 30 days before T0.</p> <p><i>Long-term e-cigarette users:</i> E-cigarette use at both T0 and T1</p> <p><i>Short-term e-cigarette users:</i> E-cigarette use only at T0 or only at T1.</p> <p>Outcome Smokers at follow-up who had quit smoking for at least 3 months</p>	<p>B2) Ever users of combustible tobacco at T1 Outcome: Quit smoking for at least 3 months since baseline E-cigarette never users: 234/1500 (15.6%) E-cigarette short term user: 65/456 (14.2%) E-cigarette long term user: 31/72 (42.4%)</p> <p><i>Unadjusted model; OR (95%CI):</i> E-cigarette never users: 1.00 E-cigarette short term user: 0.90 (0.56; 1.43) E-cigarette long term user: 3.98 (1.52; 10.42)</p> <p><i>Adjusted model; OR (95%CI):</i> E-cigarette never users: 1.00 E-cigarette short term user: 0.87 (0.53; 1.43) E-cigarette long term user: 4.14 (1.50; 11.42) E-cigarette user (Pooled): 1.17 (0.75, 1.83)</p>

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
		<p><i>Non-Hispanic black:</i> Long-term users: 4.6 Short-term users: 12.3 Non-users: 15.2</p> <p><i>Hispanic:</i> Long-term users: - Short-term users: 7.3 Non-users: 13.6</p> <p><i>Other:</i> Long-term users: 18.1 Short-term users: 8.1 Non-users: 6.6</p> <p><i>Education, more than 12 years (%)</i>: Long-term users: 36.7 Short-term users: 43.5 Non-users: 41.1</p> <p><i>Intention to stop smoking (% yes)</i> Long-term users: 49.7 Short-term users: 33.4 Non-users: 27.7</p> <p>Cigarettes per day (%): <15 cigarettes Long-term users: 57.1 Short-term users: 56.7</p>		

First author Publication year Reference Country	Design Time to follow-up Setting Study period	Population Drop-out rate	Definition of smokers/quitters/abstinence Exposure Outcome	Results
		<p>Non-users: 63.4</p> <p>Drop-out rate 2097 out of 3111 participants who were identified as current smokers at the 2012 baseline completed a follow-up survey (67.4%). Another 69 respondents excluded due to missing or inconsistent data.</p>		

CI= confidence interval; **F**=female; **M**=male; **MD**= mean difference; **Na**= Information not available; **T1**=first measurement (baseline); **T2**= second measurement; **T3**=third measurement; **OR**= Odds ratio; **RD**= Risk Difference; **RR**= Relative risk; **IRR** = Incidence Rate Ratio

Table 5.2 E-cigarette use- RCT

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/abstinence	Intervention Comparison Outcome	Analysis model Results
Bullen 2013 [73] New Zealand	<p>Design RCT (ITT-analysis) (ASCEND trial)</p> <p>Time to follow-up 1, 3 and 6 months</p> <p>Setting Advertisement recruited adult smokers wishing to quit smoking</p> <p>Study period 2011-2013</p>	<p>Population Adult smokers, ≥ 18 years, that smoked ≥ 10 cigarettes per day for the past year and wanted to stop smoking. Exclusion criteria were among others current use of any cessation drug or being in an existing cessation program.</p> <p>N=657 (randomised)</p> <p>Nicotine e-cigarettes (N=289) <i>Mean age (SD):</i> 43.6 (12.7) <i>Sex</i> N=178 women (62 %) N= 111 men (38 %) <i>Ethnicity:</i> New Zealand Māori: 95 (33%), Non-Māori: 194 (67%)</p>	<p>Data collection Recruited via community newspapers, inviting people to call the study center for eligibility. Pre-screening, done by research assistants, who also completed follow-up assessments.</p> <p>Participants were supplied with vouchers to cover dispensing costs. E-cigarette groups were couriered an e-cigarette, spare batterie and charger and cartridges.</p>	<p>Intervention <i>E-cigarettes:</i> the liquid was free of diethylene glycol (a toxin detected in fluid in one brands of e-cigarettes); nicotine cartridges (labelled 16 mg) contained 10–16 mg nicotine per ml. 300 puffs from one nicotine e-cigarette cartridge delivered 3–6 mg nicotine, equivalent to smoking between one and five tobacco cigarettes.</p> <p>Comparison <i>Nicotine patches:</i> Daily use, from 1 week before until 12 weeks after their chosen quit day, consistent with smoking cessation guidelines.</p> <p><i>Placebo e-cigarettes:</i> The placebo cartridges contained no nicotine.</p> <p>Outcome</p>	<p>Analysis model Continuous abstinence, RR (95 % CI); RD (95 % CI). All analyses are intention to treat, ITT (assumes all participants with missing smoking status were smoking).</p> <p>Results B2) Users of combustible tobacco at T0 Outcome: Smoking abstinence <i>3 months</i> Placebo e-cig: 5/73 (6.8%) Nicotine patches: 27/295 (9.2%) Nicotine e-cigarettes: 38/289 (13.1%)</p> <p><i>6 months</i> Placebo e-cig: 3/73 (4.1%) Nicotine patches: 17/295 (5.8%) Nicotine e-cigarettes: 21/289 (7.3%) All e-cigarettes: 24/362 (6.6%)</p> <p>B2) Users of combustible tobacco at T0</p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/ab stinence	Intervention Comparison Outcome	Analysis model Results
		<p><i>Lost to follow-up was 22%: 17% (48 of 289) in the nicotine e-cigarettes group</i></p> <p>Patches (N=295) <i>Mean age (SD):</i> 40.4 (13.0) <i>Sex</i> N=182 women (62 %) N= 113 men (38 %) <i>Ethnicity:</i> New Zealand Māori: 95 (32%), Non-Māori: 200 (68%) <i>Lost to follow-up was 27% (80 of 295) in the patches group</i></p> <p>Placebo e-cigarettes (N=73) <i>Mean age (SD):</i> 43.2 (12.4) <i>Sex</i> N= 45 women (62 %) N= 28 men (38 %) <i>Ethnicity:</i></p>		<p>Continuous smoking abstinence (self-reported over the whole follow-up period, allowing ≤5 cigarettes in total). At last follow-up, 6 months after quit day, abstinence was verified at that point in time by exhaled breath carbon monoxide measurement (<10 ppm).</p>	<p>Outcome: change from baseline in cigarettes consumed per day at 6 months follow-up mean (SD). Nicotine e-cigarettes: 9.7 (0.4) Patches: 7.7 (0.4)</p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/abstinence	Intervention Comparison Outcome	Analysis model Results
		<p>New Zealand Māori: 23 (32 %), Non-Māori:50 (68%)</p> <p><i>Lost to follow-up was 22% (16 of 73) in placebo e-cigarettes group.</i></p> <p>Drop-out rate Lost to follow-up is reported above.</p>			
<p>Carpenter et al 2017 [74] USA</p>	<p>Design RCT</p> <p>Time to follow-up 4 months</p> <p>Setting Advertisement recruited adult smokers not seeking treatment to quit smoking</p> <p>Study period 2014–2016</p>	<p>Population Non-treatment seeking adult smokers from urban area, age >18, current smoker of ≥5 cigarettes per day (CPD) for ≥1 year, having at least some concern for health effects of smoking, and never purchased an ENDS product. Exclusion criteria were among others having used any ENDS product in the past 6 months.</p> <p>N=68 (Baseline)</p>	<p>Data collection Recruited from the local community using various media outlets.</p> <p>Randomization to group was stratified by motivation to quit in the next 30 days (0–6 vs. 7–10 on a VAS scale) but proportioned 2:1 (ENDS:control) to increase precision estimates for e-cigarette uptake and usage.</p>	<p>Intervention A: BluCig ENDS (16 mg) (N=25) B: BluCig ENDS (24 mg) (N=21)</p> <p>Both ENDS group participants were offered free ENDS with the choice of either traditional tobacco or menthol flavour.</p> <p>Comparison Control group not offered any free ENDS. Thus, trial outcomes are reported across three groups: control</p>	<p>Analysis model Assessment of cessation-related behaviours (quit attempts, abstinence) followed an intent-to-treat approach (ITT), in which all missing cases were assumed as having no quit attempts/abstinence.</p> <p>Results B2) Smokers at T0 Outcome: Smoking abstinence <i>Average during the whole study period:</i> Control group: 1.01/22 (4.6%) ENDS 16 mg group: 2.0/25 (8.0%) ENDS 24 mg group: 5.00/21 (23.8%)</p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/ab stinence	Intervention Comparison Outcome	Analysis model Results
		<p>Control (N=22) Mean age (SD): 42.3 (14.2) Sex Women: (64 %), Men: (36 %) Ethnicity: White 59%, Black or African American, 41% Completed study: n=16</p> <p>BluCig ENDS (16 mg) (N=25) Mean age (SD): 43.3 (14.4) Sex Women: (72 %), Men: (28 %) Ethnicity: White 56%, Black or African American, 40% Completed study: n=19</p> <p>BluCig ENDS (24 mg) (N=21) Mean age (SD): 40.9 (12.3) Sex</p>	<p>Participants were compensated up to \$346</p>	<p>versus 16 mg versus 24 mg ENDS.</p> <p>Outcome Primary outcomes, assessed via daily diaries during sampling period and in-person laboratory visits over 4 months, included uptake and usage of ENDS, changes in smoking and cessation-related outcomes, and exposure to smoke constituents (i.e., cotinine, carbon monoxide, and NNAL).</p>	<p><i>4 months (follow-up):</i> Control group: 1.01/22 (4.6%) ENDS 16 mg group: 1.0/25 (4.0%) ENDS 24 mg group: 2.00/21 (9.5%)</p> <p>B2) Smokers at T0 Outcome: 50% reduction in cigarette consumption <i>4 months (follow-up):</i> Control group: 4.18/22 (19%) ENDS 16 mg group: 4.0/25 (16%) ENDS 24 mg group: 9.87/21 (47%)</p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/abstinence	Intervention Comparison Outcome	Analysis model Results
		<p>Women: (43 %) Men: (57 %) <i>Ethnicity:</i> White 48%, Black or African American, 52% <i>Completed study:</i> n=15</p> <p>Drop-out rate N=18 (18/68= 26 %)</p>			
<p>Hajek 2019 [75] United Kingdom</p>	<p>Design RCT (pragmatic, multicentre, individually randomized, controlled trial)</p> <p>Time to follow-up 4 weeks 52 weeks</p> <p>Setting Three U.K. National Health Service free stop-smoking service sites: Tower Hamlets (London borough), City of London, and</p>	<p>Population Adult smokers attending U.K. National Health Service stop-smoking Services, who were not pregnant or breast-feeding and had no strong preference to use or not to use nicotine replacement or e-cigarettes and were currently not using either type of product.</p> <p>N= 886 randomised</p> <p><i>Intention to stop smoking</i></p>	<p>Definitions <i>Sustained abstinence</i> Self-report of smoking no more than five cigarettes from 2 weeks after the target quit date, validated biochemically by an expired carbon monoxide level of less than 8 ppm at follow-up and not contradicted by any previous self-report or validation result (Russel Standard) Participants who were lost to follow-up or did not provide biochemical validation were</p>	<p>Intervention Treatment included weekly behavioural support for at least 4 weeks. <i>E-cigarettes:</i> One Kit starter pack with 30-ml bottle of flavoured e-liquid (18mg/ml nicotine). 2.1-ohm atomizer abd 650-mAh battery or 1.5-ohm atomizer and 1000-mAH battery (the latter used by 42 participants). Those unable to obtain their own supply of e-liquid were supplied with one further 10-ml bottle.</p> <p>Comparison</p>	<p>Analysis model: The primary and secondary abstinence outcomes were analysed by regression of smoking status at each time point onto trial group. Primary analyses were adjusted for trial center to account for the stratification factor.</p> <p>Results B2) Smokers at T0 (N=866) Outcome: Sustained smoking abstinence (cigarettes) <i>12 months</i> Nicotine-replacement products: 44/446 (9.9%) E-cigarettes: 79/438 (18.0%)</p> <p><i>6–12 months</i></p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/ab stinence	Intervention Comparison Outcome	Analysis model Results
	<p>Leicester / East Sussex</p> <p>Study period May 2015 to February 2018</p>	<p>100%, only those who had quit smoking by the target quit date were randomized</p> <p>Nicotine e-cigarettes N=438 <i>Mean age (IQR)</i> 41 (33-53) years <i>Sex, %</i> F: 48.2 %, M: 51.8%</p> <p><i>Ethnicity:</i> NR</p> <p><i>Education, %</i> Primary school: 4.3% Secondary school: 32.2% Further education / diploma: 26.7% Higher education 36.7%</p> <p><i>Cigarettes per day, median (IQR)</i> 15 (10-20) cigarettes</p> <p><i>Loss to follow-up</i> E-cigarettes</p>	<p>considered to not be abstinent No validation by expired carbon monoxide levels for abstinence reported between week 2 to 26.</p> <p><i>7-day abstinence</i> Self-reported abstinence rates at each time point (probably for the last 7 days, but details are not explicitly provided)</p>	<p>Nicotine-replacement products: participants could choose between patch, gum, lozenge, nasal spray, inhalator, mouth spray, moth strip, and microtabs. Participants could change and combined products. Supplies provided for up to 3 months.</p> <p>Outcomes <i>Primary outcome:</i> Sustained abstinence (1- year)</p> <p><i>Secondary outcomes:</i> Sustained abstinence (6- month, from week 26 to week 52; at 4 weeks, at 26 weeks)</p> <p>Smoking reduction $\geq 50\%$ in cigarette consumption, validated by carbon monoxide-measurement (in participants without sustained abstinence from week 26-52)</p>	<p>Nicotine-replacement products: 53/446 (11.9%) E-cigarettes: 93/438 (21.2%)</p> <p><i>6 months</i> Nicotine-replacement products: 112/446 (25.1%) E-cigarettes: 155/438 (35.4%)</p> <p>B2) Smokers at T0 (N=866) Outcome: 7-day abstinence from smoking <i>6 months</i> Nicotine-replacement products: 115/446 (25.7%) E-cigarettes: 158/438 (36.0%)</p> <p><i>6 months, unadjusted relative risk (95% CI)</i> Nicotine-replacement products: 1.0 E-cigarettes: 1.39 (1.14 to 1.70)</p> <p><i>12 months</i> Nicotine-replacement products: 98/446 (21.9%) E-cigarettes: 146/438 (33.3%)</p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/ab stinence	Intervention Comparison Outcome	Analysis model Results
		<p>432/439 attended at least 1 session after quit date, overall loss to follow-up: 7 4-week: 63 6-month: 87 12-month: 83</p> <p>Nicotine replacement: n=446 <i>Mean age (IQR)</i> 41 (33-51) years</p> <p><i>Sex, %</i> F: 47.8 % M: 52.2%</p> <p><i>Ethnicity:</i> NR</p> <p><i>Education, %</i> Primary school: 4.9% Secondary school: 29.2% Further education / diploma: 28.5% Higher education 37.5%</p>		<p>7-day abstinence (at 4 weeks, 26 weeks, and 52 weeks)</p>	<p><i>12 months, unadjusted relative risk (95% CI)</i> Nicotine-replacement products: 1.0 E-cigarettes: 1.52 (1.23 to 1.90)</p> <p>B2) Smokers at T0 Outcome: Smoking reduction (≥50% reduction in cigarette consumption) <i>12 months, crude</i> Nicotine-replacement products: 29/393 (7.4%) E-cigarettes: 44/345 (12.8%)</p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/ab stinence	Intervention Comparison Outcome	Analysis model Results
		<p><i>Cigarettes per day, median (IQR)</i> 15 (10-20) cigarettes</p> <p><i>Loss to follow-up</i> 438/447 attended at least 1 session after quit date, overall loss to follow-up: 9 4-week: 91 6-month: 110 12-month: 105</p>			
Holliday 2019 [76] UK	<p>Design RCT (pilot)</p> <p>Time to follow-up 6 months</p> <p>Setting Dental care clinics (hospital and private practices)</p> <p>Study period Recruitment from 20 September 2016 to 7 December 2017) Data collection ended 7 June 2018</p>	<p>Population Adult (18+) tobacco smoker, having periodontitis and a minimum of 16 natural teeth, and not currently using an e-cigarette (more than 2 days in last 30 days)</p> <p>N=80</p> <p>E-cigarettes (N=40) <i>Age, mean (SD)</i> 44.0 (11.8) years</p> <p><i>Sex (%)</i></p>	<p>Definitions Smoker of burnt tobacco (≥ 10 factory-made cigarettes/day or 7g loose tobacco/day or 14 hand-rolled cigarettes/day)</p> <p>Smoking cessation calculated using Russel Standard 6-month quitter method</p> <p>Participants with missing smoking outcome data (e.g. those not attending for</p>	<p>Intervention - standard non-surgical periodontal therapies - brief smoking cessation advice - E-cigarette starter kit (included Vype eTank clearomizer and 2x 10 ml vaping liquid in choice of flavour and nicotine strength) Participants were asked to use only the recommended brand of e-liquid during the trial.</p> <p>Comparison</p>	<p>Analysis model ITT</p> <p>Results B2) Users of combustible tobacco at T0 Outcome: quitter 6 months Nicotine e-cigarettes: 6/40 (15%, 95% CI 7 to 29%) No e-cig: 2/40 (5%, 95% CI 1 to 17%)</p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/abstinence	Intervention Comparison Outcome	Analysis model Results
		<p>N=22 women (55%) N=18 men (45%)</p> <p><i>Ethnicity:</i> White N=39 (97.5%) Asian or Asian British N=1 (2.5%)</p> <p><i>Cigarettes per day (any), mean (SD)</i> 17.4 (6.4)</p> <p><i>Education</i> NA</p> <p><i>Lost to follow-up</i></p> <p>Control (N=40)</p> <p><i>Age, mean (SD)</i> 44.6 (9.5) years</p> <p><i>Sex (%)</i> N=20 women (50%) N=20 men (50%)</p> <p><i>Ethnicity:</i> White N=36 (90%)</p>	<p>review) were considered as continuing smokers or to have resumed smoking</p>	<p>- standard non-surgical periodontal therapies - brief smoking cessation advice - asked not to use e-cigarettes during the first 4 weeks</p> <p>Outcome Carbon monoxide-verified continuous abstinence</p>	

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/abstinence	Intervention Comparison Outcome	Analysis model Results
		<p>Asian or Asian British N=4 (10%)</p> <p><i>Cigarettes per day (any), mean (SD)</i> 17.5 (6.9)</p> <p><i>Education</i> NA</p> <p>Loss to follow-up Loss to follow-up was balanced between groups: four participants withdrew from the study, and 18 were lost to follow-up at 6 months. 30% of participants achieved $\geq 80\%$ completion of weekly smoking questionnaire</p>			
Lee 2019 [77] Republic of Korea	Design RCT single-centre, prospective, open-label, randomized controlled, clinical pilot trial	Population Participants must have smoked at least 10 cigarettes per day in the preceding year, smoked for at least 3 years, and were motivated to stop	Data collection Continuous abstinence was determined using self-reported questionnaires, verified with measurements of urine cotinine and end-	Intervention <i>E-cigarettes:</i> - Fifty-minute education sessions on smoking cessation and the use of smoking-cessation aids	Analysis model Continuous variables were analysed with independent t test. Categorical variables were analyzed using the Chi2 test or Fisher-Freeman-Halton extension of Fisher's probability

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/abstinence	Intervention Comparison Outcome	Analysis model Results
	<p>Time to follow-up 12 weeks 24 weeks</p> <p>Setting Adult Korean men employed at a motor company in Cheonan, Republic of Korea.</p> <p>Study period January to September 2012</p>	<p>smoking or reduce their cigarette consumption</p> <p>N=150</p> <p>Nicotine e-cigarettes (N=75) <i>Mean age (SD):</i> 44.0 (7.8) years</p> <p><i>Sex</i> N= 0 women (0 %) N= 150 men (100 %)</p> <p><i>Ethnicity:</i> NA (Korean)</p> <p><i>Education, N (%)</i> High school or below: 51 (68.0) College or above: 24 (32.0)</p> <p><i>Cigarettes per day smoked, pack (SD)</i> 1.05 (0.37)</p> <p><i>Lost to follow-up</i> 4 participants withdrew before treatment began</p>	<p>expiratory carbon monoxide (<10ppm) levels</p>	<p>- provided with a 12-week supply for using e-cigarette (eGO-C Ovale, nicotine 0.01 mg/mL; Janty-Korea Co.)</p> <p>Comparison <i>Nicotine gum:</i> - Fifty-minute education sessions on smoking cessation and the use of smoking-cessation aids - provided with a 12-week supply of nicotine gum (Nicoman, nicotine 2 mg/tablet; Daewoong Pharmaceuticals)</p> <p>Outcome <i>Primary</i> 9 to 12-week and 9 to 24-week continuous abstinence rates <i>Secondary</i> 7-day point prevalence of abstinence at 12 and 24 weeks</p>	<p>Test, as appropriate. Multivariable logistic regression analyses were performed controlling for possible confounders in both groups.</p> <p>Results B2) Users of combustible tobacco at T0 Outcome: Continuous Abstinence Rate <i>9 to 12 weeks</i> Nicotine e-cigarettes: 45.3% Nicotine gum: 46.7%</p> <p><i>9 to 24 weeks</i> Nicotine e-cigarettes: 21.3% Nicotine gum: 28.0%</p> <p>B2) Users of combustible tobacco at T0 Outcome: 7-Day Point Prevalence of Abstinence <i>12 weeks</i> Nicotine e-cigarettes: 65.3% Nicotine gum: 66.7%</p> <p><i>24 weeks</i></p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/ab stinence	Intervention Comparison Outcome	Analysis model Results
		<p>Nicotine gum (N=75) <i>Mean age (SD):</i> 40.7 (8.4) years</p> <p><i>Sex</i> N=0 women (0%) N=75 men (100%)</p> <p><i>Ethnicity:</i> NA (Korean)</p> <p><i>Education, N (%)</i> High school or below: 40 (53.3) College or above: 35 (46.7)</p> <p><i>Cigarettes per day smoked, pack (SD)</i> 0.96 (0.36)</p> <p><i>Lost to follow-up</i> 14 participants withdrew before treatment began</p>			<p>Nicotine e-cigarettes: 22.7% Nicotine gum: 29.3%</p> <p>B2) Users of combustible tobacco at T0 Outcome: mean number of cigarettes consumed in a day</p> <p><i>12 weeks</i> Nicotine e-cigarettes, Mean (SD): 11.06 (7.03) Nicotine gum, Mean (SD): 12.60 (5.65)</p> <p><i>24 weeks</i> Nicotine e-cigarettes, Mean (SD): 6.55 (2.87) Nicotine gum, Mean (SD): 6.60 (3.75)</p>
Lee, S. M 2018 [78]	Design RCT	Population Participants were eligible if they	Data collection Healthcare providers were blinded	Intervention <i>Electronic Nicotine Devices (ENDS) (n=20):</i>	Analysis model: ITT (those lost to follow up were assumed to have continued smoking).

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/abstinence	Intervention Comparison Outcome	Analysis model Results
USA	<p>Time to follow-up 6 months follow-up</p> <p>Setting 6 weeks preoperative patients at the San Francisco Veteran's Affairs Medical Center</p> <p>Study period Recruitment between August 2015 and February 2016. 6-month follow-up calls were completed in August 2016</p>	<p>presented to the anaesthesia preoperative (APO) clinic for elective surgery 3 or more days before surgery, were current cigarette smokers of more than two cigarettes per day, having smoked at least once in the last 7 days, and could provide consent.</p> <p>ENDS: N=20 NRT: N=10</p> <p><i>Age (mean years (SD))</i> ENDS: 54 (12.7) NRT: 53 (10.6)</p> <p><i>Male sex (N (%))</i> ENDS: 18 (90%) NRT: 9 (90%)</p> <p><i>Ethnicity (N (%))</i> <i>White:</i> ENDS: 11 (55%) NRT: 5 (50%)</p>	<p>throughout the perioperative period. Outcome adjudicators were blinded wherever possible</p> <p>Definition of quitters/abstinence At six months follow-up, self-reported seven-day point prevalence smoking status and use of e-cigarettes was assessed</p>	<p>Patients randomized to the ENDS group received a 6-week supply of NJOY e-cigarettes (Scottsdale, AZ, USA). The supply for the last week were without nicotine. The number of e-cigarettes issued corresponded to the reported baseline cigarettes smoked per day, calculated assuming one NJOY e-cigarette was equivalent to 10 cigarettes.</p> <p>Comparison Nicotine patches (NRT) (n=): <i>Nicotine Replacement Therapy (NRT) (n=10):</i> Patients randomized to the NRT group received a 5-week supply of NicodermCQ patches and 1-week supply of placebo patches (the last week). Nicotine concentration in the patches for the first five weeks varied depending on if baseline cigarette consumption was</p>	<p>Results: 2B) Current smokers at T1 Outcome: Non-smokers at 6 months follow-up NRT users: 1/10 (10%); RR: 1.0 END users: 5/20 (25%); RR: 2.5 (0.34-18.6) (No statistically significant difference between the groups; p=0.63)</p> <p>2B) Current smokers at T1 Outcome: Smoking reduction at 6 months follow-up NRT users: 5/10 (50%); RR: 1:0 END users: 6/20 (30%); RR: 0.62 (0.31-1.24) (No statistically significant difference between the groups; p=0.43)</p> <p><i>There were no statistically significant differences between smoking cessation or reduction rates between NRT and END groups at any time point.</i></p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/ab stinence	Intervention Comparison Outcome	Analysis model Results
		<p><i>Latino:</i> ENDS: 2 (10%) NRT: 0 (0%)</p> <p><i>Education (N (%)) College degree or higher:</i> UC: 183 (22.6) Free aids: 443 (27.9) e-cig: 305 (25.5)</p> <p><i>Desire to quit:</i> <i>No plan to quit:</i> UC: 74 (9.1) Free aids: 147 (9.3) e-cig: 109 (9.1) <i>Want to quit, need help:</i> UC: 238 (29.3) Free aids: 425 (26.8) e-cig: 315 (26.3)</p> <p>Drop-out rate ENDS: 1/20 (5%) NRT: 1/10 (10%)</p>		<p>ten or more per day, or less than ten per day.</p> <p>Outcome <i>Smoking cessation (7-day point-prevalence abstinence)</i></p> <p><i>Smoking reduction (decreased number of consumed cigarettes per day, with 50% or more as compared to baseline)</i></p>	
Masiero 2019 [79] Italy	Design RCT (COSMOS II) Time to follow-up	Population Participants were smokers that had smoked ≥10 cigarettes a day for the past 10	Data collection Enrolled at the IEO within the COSMOS II (Continuous Observation of Smoking	Intervention <i>E-cigarette and support (n=70):</i> Each participant received an e-cigarette kit (VP5) and 12	Analysis model Na Results B2) Current smokers at T0

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/abstinence	Intervention Comparison Outcome	Analysis model Results
	<p>3 months</p> <p>Setting Italian adult smokers with a very high motivation to stop smoking.</p> <p>Study period September 2015-January 2016</p>	<p>years and were highly motivated to stop smoking. Exclusion criteria were among others, use of NRT or e-cigarettes or enrolled in other smoking cessation programs.</p> <p><i>Participants were randomized into three arms</i></p> <p>N=210 <i>Mean age, years (SD):</i> 62.8 (4.59)</p> <p><i>Sex</i> Women:78, Men: 132 <i>Ethnicity:</i> Not reported</p> <p><i>Ethnicity:</i> Na</p> <p><i>Education:</i> Na</p> <p>Drop-out rate</p>	<p>Subjects) screening program.</p> <p><i>All COSMOS II participants are ≥55 years and have a long smoking history and a high risk of developing a smoking-related cancer</i></p> <p>Definition of e-cigarette users Ever regular use of e-cigarettes for more than 1 week, alone or in combination with tobacco cigarettes.</p>	<p>10-mL liquid car-tridges (8 mg/mL nicotine) free of charge.</p> <p>Comparison <i>Placebo and support (n=70):</i> Each participant received an e-cigarette kit and 12 10-mL liquid that did not contain nicotine (placebo condition) free of charge.</p> <p><i>Support only (n=70):</i> Participants in this group did not use e-cigarettes</p> <p>Participants in all arms also received a low-intensity telephone counselling that included interviews at weeks 1, 4, 8, and 12.</p> <p><i>All e-cigarette using participants had the same flavour of the e-liquid (Tobacco 7 Foglie).</i></p> <p>Outcome</p>	<p>Outcome: Smoking abstinence (past 30 days), N (%) at 3 months Support only group: 6/58 (10.34%) Placebo e-cig group: 13/55 (23.6%) Nicotine e-cig group: 15/57 (26.3%)</p> <p>B2) Current smokers at T0 Outcome: stopped smoking n (%) at 3 months (calc. as ITT from numbers provided in article) Support only group: 6/70 (8.57%) Placebo e-cig group: 13/70 (18.57%) Nicotine e-cig group: 15/70 (21.43%)</p> <p>Outcome: Reduction in number of smoked cigarettes per day, Mean (SD) at 3 months Support only group: -9.1 (8.812) Placebo e-cig group: -10.8 (8.156) Nicotine e-cig group: -11.7 (7.574)</p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/ab stinence	Intervention Comparison Outcome	Analysis model Results
		<i>E-cigarette and support:</i> 12/70 (17.1%) <i>Placebo and support</i> (<i>n</i> =70): 15/70 (21.4%) <i>Support only (n=70):</i> 13/70 (18.6%)		The number of smoked cigarettes, self-reported by participants.	
O'Brien 2015 [80] New Zealand	<p>Design RCT (ASCEND trial)</p> <p><i>ASCEND trial protocol and main findings have been described in detail elsewhere, [73,81]</i></p> <p>Time to follow-up 1, 3 and 6 months</p> <p>Setting Advertisement recruited adult smokers wishing to quit smoking</p> <p><i>Only data for participants without</i></p>	<p>Population Adult smokers, ≥18 years, that smoked ≥10 cigarettes per day for the past year and wanted to stop smoking and could provide consent.</p> <p>N= 571 N= 260 (21 mg nicotine patch) N = 250 (16 mg e-cigarette) N = 61 (0 mg e-cigarette)</p> <p><i>Data on patients with mental illness is also available in the article</i></p>	<p>Data collection Recruited via community newspapers. Telephone interview at baseline, quit date (one-week post-baseline), and 1, 3 and 6 months post quit-date</p>	<p>Intervention <i>E-cigarettes:</i> the liquid was free of diethylene glycol (a toxin detected in fluid in one brands of e-cigarettes); nicotine cartridges (labelled 16 mg) contained 10–16 mg nicotine per mL. 300 puffs from one nicotine e-cigarette cartridge delivered 3–6 mg nicotine, equivalent to smoking between one and five tobacco cigarettes.</p> <p>Comparison <i>Nicotine patches:</i> Daily use, from 1 week before until 12 weeks after their chosen quit day, consistent with smoking cessation guidelines.</p>	<p>Analysis model Continuous abstinence, RR (95 % CI); RD (95 % CI). All analyses are intention to treat, ITT (assumes all participants with missing smoking status were smoking).</p> <p>Results B2) Users of combustible tobacco at T0 Outcome: Biochemically verified continuous abstinence at 6 months, % (n) 0 mg e-cigarette: 5 % (3/61) 21 mg nicotine patch: 5 % (12/260) 16 mg e-cigarette: 7 % (19/250)</p> <p>Outcome: Mean reduction in CPD* from baseline to six</p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/abstinence	Intervention Comparison Outcome	Analysis model Results
	<p><i>mental illness reported here.</i></p> <p>Study period 2011–2013</p>	<p>Age: ≥18 years old</p> <p>Sex: Na</p> <p>Ethnicity: Na</p> <p>Education: Na</p> <p>Drop-out rate: Na</p>		<p><i>Placebo e-cigarettes:</i> The placebo cartridges contained no nicotine.</p> <p>Outcome Continuous smoking abstinence (self-reported over the whole follow-up period, allowing ≤5 cigarettes in total). At last follow-up, 6 months after quit day, abstinence was verified at that point in time by exhaled breath carbon monoxide measurement (<10 ppm).</p>	<p>months in those that did not quit, Mean (SD) 0 mg e-cigarette: 8.3 (5.9), n= 61 21 mg nicotine patch: 7.4 (7), n=260 16 mg e-cigarette: 9.4 (7.1), n=250</p> <p>Outcome: Percentage reduction in CPD from baseline to six months in those that did not quit Mean (SD) 0 mg e-cigarette: 47% (28%), n= 61 21 mg nicotine patch: 41% (35%), n=260 16 mg e-cigarette: 51% (31%), n=250</p> <p><i>*CPD =Cigarettes per day</i></p>
Walker 2019 [82] New Zealand	<p>Design RCT</p> <p>Time to follow-up 6 moths</p> <p>Setting</p>	<p>Population Adult (≥18-year-old) tobacco smokers, motivated to quit in the next 2 weeks</p> <p>Excluding, people who had used an e-cigarette for smoking cessation</p>	<p>Data collection Sustained abstinence: self-reported smoking of ≤5 cigarettes since quit date, verified by exhaled carbon monoxide measurements (≤9 ppm)</p>	<p>Intervention E-cigarettes in combination with nicotine patches. E-cigarette: 2nd-generation e-cigarette starter kit, containing five 2.2 mL, 1.8 Ohm atomisers. Participants could choose one of two tobacco e-liquid flavours (18</p>	<p>Analysis model: ITT</p> <p>Results B2) Cigarette users at T0 Outcome: Smoking sustained abstinence, 6 months Nicotine patches: 10/125 (8%) Placebo e-cigarette +nicotine patches: 53/499 (11%)</p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/ab stinence	Intervention Comparison Outcome	Analysis model Results
	<p>General population recruited using media advertising</p> <p>Study period Mars 2016- November 2017</p>	<p>for more than 1 week anytime in the past year, people currently using smoking cessation medication, people enrolled in another cessation programme or study.</p> <p>N=1124</p> <p>Nicotine e-cigarettes (plus nicotine patches) (N=500) <i>Mean age (SD):</i> 41.4 (12.3) years</p> <p><i>Sex</i> N=329 women (66%) N=170 men (34%) N=1 diverse (<1%)</p> <p><i>Ethnicity, N (%)</i> New Zealand Maori: 202 (40%) Non-Maori: 295 (59%) Missing: 3 (1%)</p> <p><i>Education</i></p>	<p>7-day point prevalence abstinence: self-reported abstinence defined as no cigarettes, not a single puff, in the previous 7 days</p> <p>Change in number of cigarettes smoked: - self-reported number of cigarettes smoked per day or other time for non-daily smokers - number of participants who self-reported $\geq 50\%$ reduction in the number of cigarettes smoked</p>	<p>mg/mL nicotine). 4x20 ml provided per participant.</p> <p>Comparison <i>Nicotine patches:</i> Participants were provided with 14-week supply of 21 mg, 24h nicotine patches.</p> <p><i>Placebo e-cigarettes:</i> E-cigarettes in combination with nicotine patches. E-cigarette: 2nd-generation e-cigarette starter kit, containing five 2.2 mL, 1.8 Ohm atomisers. Participants could choose one of two tobacco e-liquid flavours (0 mg/mL nicotine). 4x20 ml provided per participant.</p> <p>All participants were advised to start using one patch per day, 2 weeks before their quit date. E-cigarette users were advised to use the device as and when necessary or desired. Participants were instructed</p>	<p>Nicotine e-cigarette +nicotine patches: 89/500 (18%) e-cigarette (all)+ nicotine patches: 142/999(14.2%)</p> <p>B2) Cigarette users at T0 Outcome: 7-day point prevalence abstinence, 6-month Nicotine patches: 14/125 (11%) Nicotine e-cigarette +nicotine patches: 119/500 (40%) Placebo e-cigarette +nicotine patches: 83/499 (17%) e-cigarette (all)+ nicotine patches: 202/999 (20.2%)</p> <p>B2) Cigarette users at T0 Outcome: 6 months, Cigarettes smoked per day (change from baseline, in those smoking at T), mean (SE) Placebo e-cigarette +nicotine patches: 8.3 (0.4) Nicotine patches: 8.6 (1.0) Nicotine e-cigarette +nicotine patches: 8.3 (0.5)</p> <p>B2) Cigarette users at T0</p>

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/abstinence	Intervention Comparison Outcome	Analysis model Results
		<p>Below year 12 or no qualification: N=179 (36%)</p> <p><i>Cigarettes per day (daily smokers only)</i> N=17.3 (SD 8.1)</p> <p><i>Motivation to quit¹</i> 3.9 (SD 0.9)</p> <p><i>Lost to follow-up/withdrawals</i> Quit date: 64/4 One-month: 172/8 Three-month: 175/8 Six-month: 152/9</p> <p>Patches only (N=125) <i>Mean age (SD):</i> 42.3 (13.1)</p> <p><i>Sex</i> N=89 women (71%) N=36 men (29%) N=0 diverse (0%)</p>		<p>to continue with their allocated treatment for 12 weeks.</p> <p>Outcome <i>Primary</i> - Sustained smoking cessation (6-month) <i>Secondary</i> - Sustained smoking cessation (1-, 3-, 12-month) - 7-day point prevalence abstinence - Relapse - Change in number of cigarettes smoked - ≥50% reduction in the number of cigarettes smoked per day - Adverse effects</p>	<p>Outcome: Proportion who reduced the number of cigarettes smoked per day by at least 50% (all participants) Nicotine patches: 32/125 (26%) Placebo e-cigarette +nicotine patches: 190/499 (38%) Nicotine e-cigarette +nicotine patches: 218/500 (44%) e-cigarette (all)+ nicotine patches: 408/999 (40.8%)</p>

¹ Motivation to quit was measured on a five-point Likert scale, where 1=very low motivation and 5=very high motivation.

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/ab stinence	Intervention Comparison Outcome	Analysis model Results
		<p><i>Ethnicity, N (%)</i> New Zealand Maori: 50 (40%) Non-Maori: 75 (60%) Missing: -</p> <p><i>Education</i> Below year 12 or no qualification, N=43 (36%)</p> <p><i>Cigarettes per day (daily smokers only)</i> N= 17.3 (SD 8.0)</p> <p><i>Motivation to quit¹</i> 3.8 (SD 0.9)</p> <p><i>Lost to follow-up/withdrawals</i> Quit date: 23/14 One-month: 54/18 Three-month: 51/20 Six-month: 42/20</p> <p>Placebo e-cigarettes (plus patches) (N=499) <i>Mean age (SD): 41.2 (12.6) years</i></p>			

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/ab stinence	Intervention Comparison Outcome	Analysis model Results
		<p><i>Sex</i> N=350 women (70%)N=149 men (30%) N=0 diverse (0%)</p> <p><i>Ethnicity, N (%)</i> New Zealand Maori: 199 (40%) Non-Maori: 294 (59%) Missing: 6 (1%)</p> <p><i>Education</i> Below year 12 or no qualification: N=177 (36%)</p> <p><i>Cigarettes per day (daily smokers only)</i> N= 17.2 (SD 8.7)</p> <p><i>Motivation to quit¹</i> 3.9 (SD0.8)</p> <p><i>Lost to follow- up/withdrawals</i> Quit date: 65/2 One-month: 190/4 Three-month: 204/5</p>			

First author Publication Year Reference Country	Design Time to follow-up Setting Study period Aim Relevant review question	Population Drop-out rate	Data collection Definition of smokers/quitters/ab stinence	Intervention Comparison Outcome	Analysis model Results
		Six-month: 155/7			

CI = confidence interval; **F**=female; **IRR** = Incidence Rate Ratio; **MD**= mean difference; **Na** = Information not available; **M** = male; **T1** = first measurement (baseline); **T2** = second measurement; **T3** = third measurement; **OR** = Odds ratio; **RD** = Risk Difference; **RR** = Relative risk

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