

Scoping review of guidance on cessation interventions for electronic cigarettes and dual electronic and combustible cigarettes use.

Appendix 2. General characteristics and recommendations of included studies.

Author and year	Study Design	Target population	Sample size	Vaping frequency at baseline	Objective	Methods	Primary Outcome Results	Conclusions/recommendations	Limitations/special features
Graham et al, 2020 ⁴⁸	Pretest-post test experimental study	Adolescent and youth	27,000	NM	To evaluate 'This is Quitting (TIQ)' text-message program delivering motivational and skill training exercises for vaping cessation	-One message per day was sent to all users -Self-reported e-cigarette use and abstinence were assessed at 14 and 90 days post-enrollment	-At 14 days, 60.8% respondents indicated they reduced or stopped vaping -At 90 days, point prevalence of last vaping within 7 days was 24.7% and more than 30 days ago was 15.5%.	Concluded that youth engagement and acceptance of the program was high among those who wanted to quit vaping.	-Did not conduct bio-chemical verification of abstinence. -Further evaluation was conducted through a RCT.
Graham et al., 2021 ⁴⁹	RCT	Youth	2588	Daily (93.1%), weekly (5.6%), monthly (1.3%)	To determine effectiveness of 'TIQ' text message program delivering cognitive and behavioural skills training for vaping cessation	All participants in the intervention and the control arms were followed up at 1 month and 7 months post-randomization	Self-reported 30-day abstinence rate at 7 months was 24.1% among intervention participants and 18.6% among controls with an odd ratio of 1.39 (95% CI 1.15, 1.68, p<0.001)	The 'This is Quitting' text message program was an effective vaping cessation intervention among youth.	Did not conduct bio-chemical verification of abstinence.
Substance Abuse and Mental Health Services Administration, 2020 ⁵⁰	Guidance	Youth	NA	NA	Review evidence and recommend on reduction and cessation of	Environmental scans for public health evidence of vaping reduction of	- <i>SmokeSCREEN (videogame)</i> : Improved belief and knowledge about vaping (no evaluation of vaping reduction yet)	Recommended multifaceted approach at different levels,	-Most individual and community measures should be tested further

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					e-cigarette use among youth	cessation interventions	<p><i>-This is Quitting (text message):</i> Effective in vaping cessation</p> <p><i>-CATCH My Breath (School-based):</i> Effective in reducing vaping</p>	<p><i>-Individual:</i> ‘smokeSCREEN’, ‘This is Quitting’</p> <p><i>-Community:</i> ‘CATCH My Breath’, media campaigns</p> <p><i>-Population level interventions:</i> Price policies, licensing and zoning policies</p>	
Owens et al., 2020 ⁵¹	Clinical guidance	Adolescent	3304	NA	To update recommendation on the primary care interventions for tobacco use (including e-cigarette) prevention and cessation	Systematic review and meta-analysis of 12 RCTs evaluating effectiveness of behavioural counselling, NRT and non-NRT for smoking cessation	<p>-Inadequate evidence on benefits of behavioural counselling and medications for tobacco cessation</p> <p>-No reported harms from behavioural counselling</p> <p>-Inadequate evidence on harms from medications</p>	<p>-Insufficient evidence to recommend for or against tobacco cessation interventions- Recommend clinical judgement to make decisions</p>	Included studies were on smoking cessation rather than vaping cessation interventions, however, final recommendations included e-cigarettes as a tobacco product
American Academy of Pediatrics, 2019 ⁵²	Clinical guidance	Adolescent and youth	NA	NA	Provide dosage, indications and contraindications for pediatricians to use NRT for patients who want to quit vaping	-Literature review and clinical decision making based on safety of NRT among adolescents	NA	<p>-Recommended using of off-label NRT (combination of long-acting patch and short acting gum or lozenge) for youth who are moderately to severely nicotine dependent. -NRT were suggested for <18 years old with prescriptions and for >18 years old</p>	<p>-Provided NRT dosing guideline and screening tools for nicotine dependence (HONC tool, e-cigarette dependence scale, mFTQ). Note: mFTQ was not tailored for vaping</p> <p>-Did not provide any evidence of the effectiveness</p>

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								as OTC medications.	of NRT for vaping cessation or reduction
Hadland & Chadi, 2020 ⁵³	Clinical guidance	Youth	NA	NA	To provide clinical guidance on vaping cessation with a specific focus on screening, assessment, counseling, and pharmacotherapy	Narrative literature review in support of evidence for recommended interventions	NA	<p>Recommended clinicians to follow:</p> <p><i>-Screening tool:</i> S2BI and BSTAD</p> <p><i>-Nicotine dependence assessment tool:</i> HONC, key questionnaire tailored for vaping</p> <p><i>-Counseling:</i> ‘5A’ approach, individual or group counselling, motivational interviewing, CBT and mindfulness approach, phone and text quit lines</p> <p><i>-Medication:</i> NRT (combination of long-acting and short-acting agents); non-NRT (for ≥17 years)</p>	<p>-Provided NRT and non-NRT dosing guidelines</p> <p>- Recommendations for vaping cessation interventions were based on smoking cessation intervention among youth.</p>
Chadi et al., 2021 ⁵⁴	Clinical recommendation	Adolescent and youth	NA	NA	To offer vaping cessation strategies for pediatric health care providers	Narrative literature review in support of evidence for recommended interventions	NA	<p>Recommended pediatricians to follow:</p> <p><i>-Assessment tool:</i> S2BI and CRAFFT modified for vaping; tailored vaping assessment</p>	<p>-Provided NRT dosing guidelines</p> <p>- Recommendations are based on the evidence available from smoking cessation</p>

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								<p>questions; ‘5A’ approach, HONC</p> <p><i>-Behavioural therapy:</i> individual or group counselling; motivational interviewing; mobile or online resources; reminders; reinforcements</p> <p><i>-NRT (in combination with behavioural therapy):</i> offer for youth experiencing withdrawal symptoms</p> <p><i>-Non-NRT (in combination with NRT and behavioural therapy):</i> Seek guidance from specialist before prescribing</p>	<p>interventions among youth</p>
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Gonzalvo et al., 2016 ⁵⁵	Clinical recommendation	Adult with diabetes	NA	NA	Recommended a standardized dosage of NRT and non-NRT therapies for users who want to quit vaping	Clinical judgement by taking the recommended dosage of NRT and non-NRT for smoking cessation into consideration while recommending for vaping cessation	<p>-Patch: 21 mg for vaping 12-18 mg/ml nicotine at 5 ml/day</p> <p>-Gum or lozenge: 4mg if vaped within 30 mins of waking, 2mg if >30 mins after waking</p> <p>-Bupropion SR: 150 mg po daily × 3 days followed by 150 mg po BID × 12 weeks</p> <p>-Varenicline: 0.5 mg po daily × 3 days followed by 0.5 mg po BID for days 4-7 then 1 mg po BID × 11 weeks</p>	Recommended NRT and non-NRT therapies on reasonable basis	Did not provide any supportive trial data or case reports on the recommended doses of NRT and non-NRT for vaping cessation.
Berg et al, 2021 ⁵⁶	Guidance	Youth	NA	NA	To review evidence on effectiveness of vaping cessation interventions	Narrative literature review of evidence in support of behavioural interventions for vaping cessation	'This is Quitting', a text messaging program, was found effective for vaping cessation	Recommended combinations of technology-based (text-messaging system, smartphone apps) and individualized (one-on-one counseling) behavioural interventions	Evidence provided in support of interventions were mostly on smoking cessation
Sikka et al., 2021 ⁵⁷	Case series	Youth and adult	6	Daily	To evaluate the combination of NRT and counselling	<p>-Regular follow-up up to 12 months</p> <p>-Used tapering doses of</p>	3 out of 6 patients achieved 7-days abstinence by 6 months, and a fourth patient by 8 months	Concluded that vaping cessation is possible by utilizing combination of NRTs and	-Did not use any vaping dependence scale to measure e-cigarette use

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					for vaping cessation	patch or fixed dose of gum, lozenge or spray with counselling		motivational interviewing	-Frequency of e-cigarette use following reported 7-days abstinence was not clear
Sahr et al, 2020 ⁵⁸	Case report	Youth	1	Daily	To evaluate an alternative approach (vaping taper with behavioural support) for vaping cessation	-Regular clinical follow-ups by a pharmacist up to 6 months -Used alternate weekly taper of nicotine concentration and frequency of vaping with behavioural support	Modified FTND score turned to 0 from 8 within 8 weeks	Combination of ENDS taper with motivational interviewing was effective	Participant was initially a smoker, who switched to vaping for smoking cessation and later sought help for vaping cessation
Silver et al, 2016 ⁵⁹	Case report	Youth	1	Daily	To evaluate combination of NRT and behavioural counselling for vaping cessation	-Regular clinical follow-ups up to 1 year -Used both patch and lozenge first, after one week discontinued patch and continued lozenge, added cinnamon flavoured nicotine gum from 6 weeks	Quit e-cigarette use (measured by FTND score) within 12 weeks, quit NRT within next 6 months	Combination of NRT and behavioural therapy was successful in quitting vaping	Participant was initially a smoker, who switched to vaping for smoking cessation and later sought help for vaping cessation- Nicotine dependence on FTND scale at baseline was measured as per initial smoking frequency.

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						and continued counselling throughout the treatment period			
Health Canada,2021 ⁶⁰	Qualitative study	Youth	137	Mostly daily, others weekly	To elicit ideas and opinions regarding vaping cessation plan or aids from young vapers	Online focus group discussion	Most preferred self-reported approaches were cut back first, then quit vaping; quit with friends' help; text messaging related to vaping cessation; using mobile apps for tracking vaping behaviour	Concluded that all of the proposed vaping cessation approaches and materials were credible, although preferences varied.	-Reported personal preferences rather than effectiveness data on proposed vaping cessation approaches -Small sample size, study results cannot be reliably generalized

Abbreviations: AAP, American Academy of Pediatrics; BSTAD, Brief Screener for Tobacco, Alcohol, and other Drugs; CBT, cognitive behavioural therapy; CPS, Canadian Pediatric Society; CRAFFT, Car-Relax-Alone-Forget-Friends-Trouble; ENDS, electronic nicotine delivery systems; FTND, Fagerstrom Test for Nicotine Dependence; HONC, Hooked on Nicotine Checklist; mFTQ, Modified Version of the Fagerstrom Tolerance Questionnaire; NA, not applicable; NM, not mentioned; NRT, Nicotine replacement therapy; OTC, over the counter; RCT, Randomized controlled trial; S2BI, Screening to Brief Intervention; TIQ, This is Quitting; US, the United States.