

Family-based programmes for preventing smoking by children and adolescents: Evidence and implications for public health

Review on which this evidence summary is based:

Thomas, R.E., Baker, P.R.A., Thomas, B.C., & Lorenzetti, D.L. (2015). Family-based programmes for preventing smoking by children and adolescents. *Cochrane Database of Systematic Reviews*, 2015(2), Art. No.: CD004493.

Review Focus

- P** General population, nonsmoking children (aged 5 to 12) and adolescents (aged 13 to 18) with their parents
- I** Interventions with children and family members intended to deter tobacco use. Any components to change parenting behaviour, parental or sibling smoking behaviour, or family communication and interaction.
- C** Usual practice, or a program of no family intervention
- O** Smoking status of children who reported no use of tobacco at baseline

Review Quality Rating: 9 (strong) *Details on the methodological quality are available [here](#).*

Considerations for Public Health Practice

Conclusions from Health Evidence

This high quality review, of randomized controlled trials, includes 27 studies, however only nine studies with a total of 4810 participants of 'never smokers' compared against a control were included in the primary meta-analysis.

Intensity of the program was classified as high, medium or low using four dimensions: proximity, direction, exposure and the period of exposure, and studies were divided into two groups: 1) family-based interventions used on their own compared to no-intervention control; and, 2) family-based interventions used as adjuncts to school-based prevention programs.

The majority of studies implemented a high intensity intervention, however there was no evidence of a dose response in this review. High intensity programmes resulted in a reduction in smoking initiation by 16% to 32%. The common feature of effective high intensity interventions was encouraging authoritative parenting, where parents show strong interest in care for the adolescent, often with rule setting. This type of parenting is different from authoritarian parenting where parents say "do as I say", or neglectful or unsupervised parenting.

General Implications

This review provides good evidence for the potential of family-based intervention to prevent children from starting to smoke.

The evidence supports the implementation of interventions that encourage parents to think they can make a difference in their adolescent's tobacco-related behaviour, strengthen their nurturing skills, encourage the setting of limits, and provide strategies for meaningful discussion with their adolescents about substances.

The evidence also supports family-based interventions provided as a single program, or in combination with a school-based program.

It was not possible to test whether socio-economic characteristics confounded the effects as too few studies provided details.

Evidence and Implications

Evidence points are not in order of the strength of the evidence.

What's the evidence?**)	Implications for practice and policy
<p>1. Family interventions vs. no intervention. New smoking at follow-up of never smokers only (9 studies, 10 intervention arms, 4810 participants in the meta-analysis)</p> <ul style="list-style-type: none"> ● The pooled estimate found a lower likelihood of smoking behaviour in the intervention group which ranged from 16% to 32% (risk ratio [RR] 0.76, 95% [CI] 0.68 to 0.84) ● Analysis by intensity <ul style="list-style-type: none"> ➢ High intensity (6 studies, 1970 participants in the meta-analysis) RR 0.71, 95% CI 0.61 to 0.82 ➢ Medium intensity (1 study, 826 participants) RR 0.83, 95% CI: 0.67 to 1.03 ➢ Low intensity (2 studies, 2,014 participants RR 0.77 (0.61 to 0.97) 	<p>1. Family interventions on their own</p> <ul style="list-style-type: none"> ● There is compelling evidence to support the implementation of family-based interventions on their own to prevent children and adolescents from starting to smoke. The evidence is strongest for interventions classified as high intensity. ● A common feature was encouraging authoritative parenting (interest in and care for the adolescent, with rule setting). ● Public Health should consider how to implement these programs to ensure fidelity of the intervention and that they are suited to the families who are involved.
<p>2. Combined family plus school intervention compared to school intervention alone (2 studies)</p> <ul style="list-style-type: none"> ● The pooled estimate found evidence of an additional benefit over the school component alone by reducing the likelihood of starting by 15% (RR 0.85, 95% CI 0.75 to 0.96). ● Subgroup analysis <ul style="list-style-type: none"> ➢ One high intensity intervention study (1096 participants) included some participants who already had experienced some smoking at baseline. RR 0.60, 95% CI 0.38 to 0.94 ➢ Five studies (approximately 18,500 participants) did not report outcomes in a format suitable for inclusion in a meta-analysis. 	<p>2. Family interventions plus school intervention</p> <ul style="list-style-type: none"> ● When added to a school-based intervention, a family-based add-on can provide additional significant benefit. ● Again, the common feature of effective high quality interventions used as adjuncts to a school intervention was encouraging authoritative parenting such as strengthening their skills in nurturing, setting limits and ways to resist peer pressure. ● Public Health should consider adding a family-based component when school-based programs are provided.
<p>3. Other comparisons (1 study)</p> <ul style="list-style-type: none"> ● One study contributing data to Analysis 1 also had a school-based comparison arm (n=388). The family-school partnership arm and the classroom centred "Good Behaviour Game" arms had similar effects on behaviour. RR 1.05 (95% CI 0.80 to 1.38). 	<p>3. Family interventions with various school based approaches</p> <ul style="list-style-type: none"> ● The evidence-base of choosing between school based approaches is limited to one study. The evidence suggests that both approaches had similar effects on behaviour. ● Further research is needed if refinement of these approaches is deemed a priority.

Legend: P – Population; I – Intervention; C – Comparison group; O – Outcomes; RR – Relative Risk; BMI – Body Mass Index; MET-m/week – metabolic equivalent of task in minutes per week; *For definitions please see the [healthevidence.org glossary](http://www.healthevidence.org/glossary) www.healthevidence.org/glossary.aspx

**** Note: Only the primary outcomes from each study are addressed in this evidence table.**

Why this issue is of interest to public health in Canada

Most cigarette smokers begin using tobacco products before the age of 18, which can have long lasting health effects.¹ Smoking is linked to an increased risk of many diseases, cancers, and respiratory infections.² Canadian youth who smoke are more likely to make use of illicit drugs and alcohol, in comparison to youth and adults who do not smoke.² Use of cigarettes, illicit drugs, or alcohol can be linked to both mental and physical health issues.² Though there has been a decline in the number of Canadian youth who smoke, the numbers remain significant.² A recent survey by the Centre for Addiction and Mental Health discovered that most Ontario underage youth who smoke obtain cigarettes from a friend or family member³, illustrating the need for more family interventions addressing tobacco use prevention. Similarly, the 2012-2013 youth smoking survey by Health Canada found that 72% of the Canadian youth respondents received cigarettes from social sources, including family members or friends.⁴

¹ World Health Organization. (2015). *About youth and tobacco*. Retrieved from <http://www.who.int/tobacco/research/youth/about/en>

² Davis, C. G. (2006). *Risks associated with tobacco use in youth aged 15-19*. Retrieved from <http://www.ccsa.ca/Resource%20Library/ccsa-011346-2006.pdf>

³ Centre for Addiction and Mental Health. (2013). *Ontario youth get cigarettes and alcohol from friends and family*. Retrieved from http://www.camh.ca/en/hospital/about_camh/newsroom/news_releases_media_advisories_and_backgrounders/current_year/Pages/Ontario-youth-get-cigarettes-and-alcohol-from-friends-and-family.aspx

⁴ Health Canada.(2014). *Summary of results of the youth smoking survey 2012-2013*. Retrieved from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/survey-sondage_2012-2013/result-eng.php

Other quality reviews on this topic are available on healthevidence.org

Suggested citation

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This evidence summary was written to condense the work of the authors of the review referenced on page one. The intent of this summary is to provide an overview of the findings and implications of the full review. For more information on individual studies included in the review, please see the review itself.

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