Smoking cessation interventions for adolescents: a systematic review
Garrison MM, Christakis DA, Ebel BE, Wiehe SE, Rivara FP

CRD summary
The authors found little evidence to support the effectiveness of smoking cessation interventions in adolescents. None of the available evidence was long term. The poor reporting of review methods mean that the authors’ conclusions may need to be interpreted with a degree of caution.

Authors' objectives
To assess the effectiveness of smoking cessation interventions for adolescents.

Searching
MEDLINE (from 1966), Cochrane Central Register of Controlled Trials and PsycINFO were searched to June 2002. Search terms were reported. Medical Editors Trial Amnesty register, reference lists of studies retrieved and reference lists of relevant reviews and meta-analyses were handsearched. Experts in the field were consulted. The search was limited to studies in English.

Study selection
Controlled trials of smoking-cessation interventions conducted in adolescent smokers (aged 10 to 21 years) were eligible for inclusion. Studies not restricted to current smokers were excluded.

The studies in the review were either randomised (at either institutional or individual level) or used matched controls. They were conducted in school, hospital and/or clinic settings and (in one case) among pregnant adolescents. Most were conducted in USA. Participants were aged from 12 to 20 years. Inclusion criteria for duration and/or intensity of smoking varied across the studies. Interventions included educational/motivational classes, peer support and laser ear acupuncture. Controls received education without peer support, survey participation, an informational brochure, sham acupuncture or usual care. The frequency and intensity of the intervention varied widely; participants received a total of one to 14 sessions. Duration of follow up ranged from four weeks to 5.2 months. Smoking cessation was measured in all cases by self report plus biochemical markers (exhaled carbon monoxide and/or salivary cotinine).

The authors stated neither how the papers were selected for the review nor how many reviewers performed the selection.

Assessment of study quality
The authors stated that the methodology of all retrieved articles was evaluated, but did not specify the criteria used to evaluate the included studies. The authors did not state how the assessment was performed.

Data extraction
Odds ratios (ORs) or risk ratios (RRs) were reported (based on the numbers of events in the control and intervention groups of each study), with 95% confidence intervals (CIs). The authors stated neither how the data were extracted for the review nor how many reviewers performed the data extraction. The authors of primary studies were contacted for further information as necessary.

Methods of synthesis
Studies were combined in a narrative synthesis, grouped by the study setting (school-based or other).

Results of the review
Six studies were included in the review (n=1,490, range 40 to 627). Four were randomised controlled trials (RCTs, n=528). A fifth RCT (n=335) had methodological flaws and was regarded in the review as non-randomised. The sixth study was non-randomised and had a matched control school (n=627). Only one study was double-blinded. Drop-out rates ranged from 5% to 51%. Only two of the studies analysed data by intention to treat.
School-based educational/motivational sessions (three studies): The one relevant RCT reported that at four weeks' post intervention the likelihood of being smoke-free for five days was significantly higher in the intervention group (RR 2.51, 95% CI 1.25 to 5.03) analysed by intention to treat. Two non-randomised studies reported a significant impact on cessation rates in the intervention group. One of the non-randomised studies stratified the analysis by gender and reported that the intervention significantly benefited female but not male students.

Other interventions (three studies): No statistically significant difference in cessation rates was found between pregnant adolescents who received educational sessions with peer support and those who received educational sessions alone or usual care (one RCT). Neither was there any statistically significant difference in smoking outcomes between hospital-recruited adolescents who received a motivational interview and those who received a pamphlet (one RCT) nor between adolescents who received laser versus sham acupuncture (one RCT).

Authors' conclusions
There was little evidence to support the effectiveness of smoking cessation interventions in adolescents, and none of the available evidence was long term.

CRD commentary
The objectives and inclusion criteria of the review were clear. Relevant sources were searched for studies. The authors acknowledged that the restriction by language and the limited search for unpublished articles meant that some studies may have been missed. It was unclear whether steps were taken to minimise the risk of reviewer bias and error by having more than one reviewer independently undertake study selection, validity assessment and data extraction. Relevant aspects of study validity were considered, but criteria used for the assessment were not reported specifically. The higher-quality studies were appropriately given prominence in the narrative synthesis. The authors explored potential biases in the primary studies, such as lack of intention to treat analysis, variability of outcome measures and short follow-up times. The poor reporting of review methods mean that the authors’ conclusions may need to be interpreted with a degree of caution.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that rigorous RCTs with well-defined outcomes and long-term follow up were needed on smoking cessation interventions in adolescents. Strategies effective in adults should be tested among adolescents. Results should be stratified by variables such as gender, nicotine addition and level of motivation.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.