



## Short-term preoperative smoking cessation and postoperative complications: a systematic review and meta-analysis

### Arrêt à court terme du tabagisme en préopératoire et complications postopératoires: revue systématique de la littérature et méta-analyse

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#### Abstract

**Purpose** *The literature was reviewed to determine the risks or benefits of short-term (less than four weeks) smoking cessation on postoperative complications and to*

*derive the minimum duration of preoperative abstinence from smoking required to reduce such complications in adult surgical patients.*

**Source** *We searched MEDLINE, EMBASE, Cochrane, and other relevant databases for cohort studies and randomized controlled trials that reported postoperative complications (i.e., respiratory, cardiovascular, wound-healing) and mortality in patients who quit smoking within six months of surgery. Using a random effects model, meta-analyses were conducted to compare the relative risks of complications in ex-smokers with varying intervals of smoking cessation vs the risks in current smokers.*

**Author contributions** *Jean Wong* was involved in data abstraction, interpretation of data, drafting and revising, and final approval of the article. *David Paul Lam* was involved in data abstraction and drafting of the article. *Amir Abrishami* was involved in drafting and revising the article, data analysis, and interpretation of the data. *Matthew Chan* revised and approved the final version of the article. *Frances Chung* was involved in the conception and design, revising, and final approval of the article.

**Principal findings** *We included 25 studies. Compared with current smokers, the risk of respiratory complications was similar in smokers who quit less than two or two to four weeks before surgery (risk ratio [RR] 1.20; 95% confidence interval [CI] 0.96 to 1.50 vs RR 1.14; CI 0.90 to 1.45, respectively). Smokers who quit more than four and more than eight weeks before surgery had lower risks of respiratory complications than current smokers (RR 0.77; 95% CI 0.61 to 0.96 and RR 0.53; 95% CI 0.37 to 0.76, respectively). For wound-healing complications, the risk was less in smokers who quit more than three to four weeks before surgery than in current smokers (RR 0.69; 95% CI 0.56 to 0.84). Few studies reported cardiovascular complications and there were few deaths.*

**Electronic supplementary material** The online version of this article (doi:10.1007/s12630-011-9652-x) contains supplementary material, which is available to authorized users.

**Conclusion** *At least four weeks of abstinence from smoking reduces respiratory complications, and abstinence of at least three to four weeks reduces wound-healing complications. Short-term (less than four weeks) smoking cessation does not appear to increase or reduce the risk of postoperative respiratory complications.*

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