

Supplemental Online Content

Wong C, Mohamad Asfia SB, Myles PS, et al. Smoking and complications after cancer surgery: a systematic review and meta-analysis. *JAMA Netw Open*. 2025;8(3):e250295. doi:10.1001/jamanetworkopen.2025.0295

eTable 1. Eligibility Criteria

eTable 2. Search Specification

eFigure 1. Postoperative Complications Between Current and Past Smoking With Flexible Cutoff

eFigure 2. Postoperative Complications Between Current and Never Smoking With Flexible Cutoff

eFigure 3. Postoperative Complications Between Current and Past Smoking for Lung and All Other Cancers

eFigure 4. Postoperative Complications Between Current and Never Smoking for Lung and All Other Cancers

eFigure 5. Adjusted Estimates of Postoperative Complications Between Current and Past Smoking With Secondary Definition

eFigure 6. 30-Day Postoperative Mortality Between Current and Past Smoking

eFigure 7. Funnel Plot of Meta-Analyses

This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1. Eligibility Criteria

Inclusion criteria	Exclusion criteria
Adult patients* who smoke and are diagnosed with cancer from any jurisdiction undergoing any type of elective surgery	Patients undergoing emergency surgery
Outcomes measured include surgical complications, i.e. necrosis, healing delay and dehiscence, surgical site infection, wound complications, pulmonary complications, hernia, lack of fistula or bone healing, readmission or mortality, i.e. not just quit rates or abstinence	Editorials, comment or discussion papers, qualitative studies, reviews, economic evaluations, case reports, case series, book chapters and conference articles or abstracts.
Observational studies (case-control, cohort, cross-sectional)	Postoperative complications not reported.
Randomized Controlled Trials	For interventional studies, details of smoking cessation intervention not provided, e.g. brief advice plus nicotine replacement therapy (NRT) or pharmacotherapy where the type of NRT or pharmacotherapy is not described.
For interventional studies, all smoking cessation interventions, including brief advice, behavioural support, pharmacotherapy [nicotine replacement therapy, varenicline, bupropion], individually or in combination, commenced at least one week before surgery.	Case reports
All comparators	Only report outcomes beyond 12 months
Report outcomes at 12 months or less	

eTable 2. Search specification

Search No.	Terms
1	smoking:ti,ab
2	smoker*:ti,ab
3	smoking'/de OR 'smoking reduction'/de OR 'smoking cessation'/de OR 'smoking cessation agent'/de
4	#1 OR #2 OR #3
5	tumo?r*:ti,ab
6	neoplasm*:ti,ab
7	cancer:ti,ab
8	malign*:ti,ab
9	oncolog*:ti,ab
10	carcinoma*:ti,ab
11	neoplasm'/de
12	#5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11
13	complication*:ti,ab
14	postop*:ti,ab
15	post op*:ti,ab
16	periop*:ti,ab
17	peri op*:ti,ab
18	preop*:ti,ab
19	pre op*:ti,ab
20	presurg*:ti,ab
21	pre surg*:ti,ab
22	intraop*:ti,ab
23	intra op*:ti,ab
24	surg*:ti,ab
25	anaesthe*:ti,ab
26	anesthe*:ti,ab
27	elective:ti,ab
28	preanesthe*:ti,ab
29	pre anesthe*:ti,ab
30	preanaesthe*:ti,ab
31	pre anaesthe*:ti,ab
32	perisurg*:ti,ab
33	peri surg*:ti,ab
34	preadmi*:ti,ab
35	pre admi*:ti,ab
36	preoperative care'/de OR 'postoperative care'/de OR 'perioperative period'/de OR 'postoperative period'/de OR 'intraoperative period'/de OR 'preoperative period'/de OR 'elective surgery'/de OR 'postoperative complication'/de
37	#13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34 OR #35 OR #36
38	#4 AND #12 AND #37

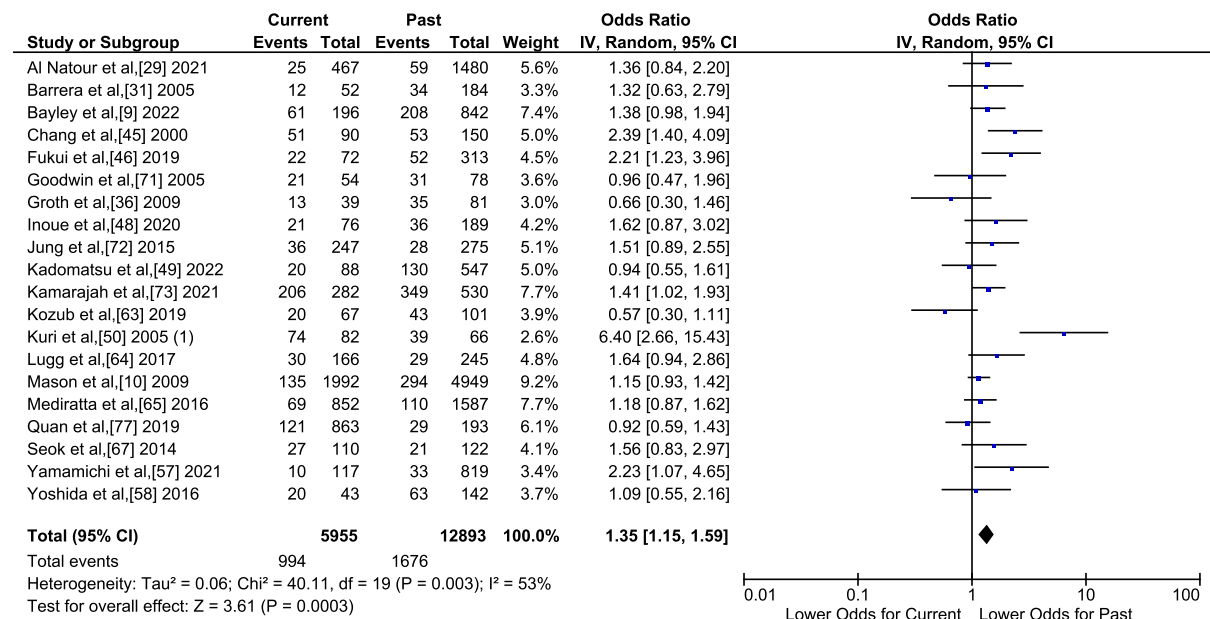
eTable 3: Detailed Characteristics of Included Studies

[Refer to Supplementary eTable 3 within Excel document]

eTable 4: Quality Appraisal of Included Studies

[Refer to Supplementary eTable 4 within Excel document]

eFigure 1: Postoperative complications between current and past smoking with flexible cutoff

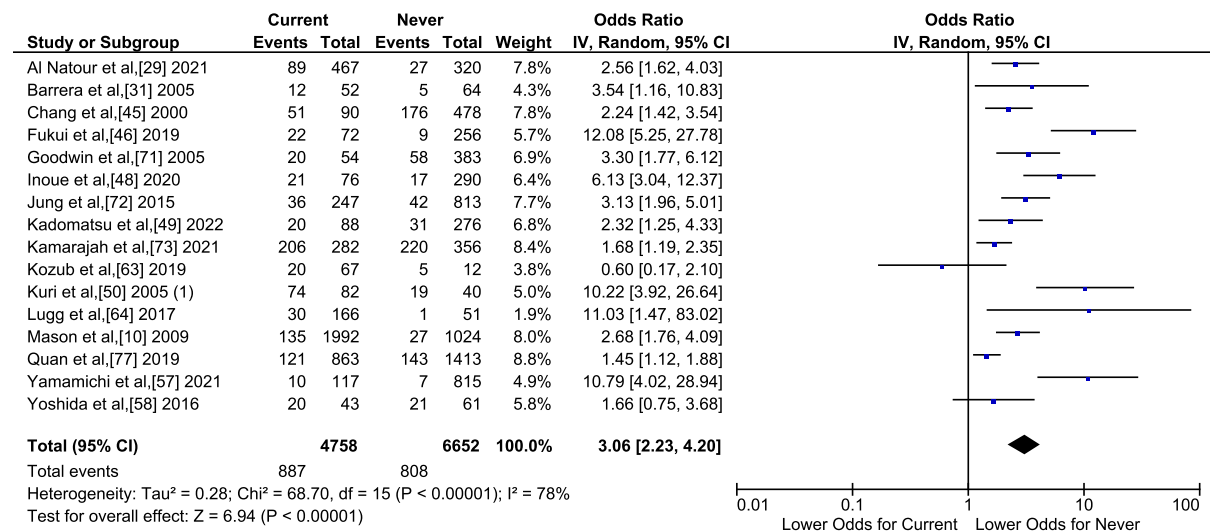


Footnotes

(1) Maximum single complication type

Note: Unadjusted odds ratio of any postoperative complication between Current (last smoked within four to eight weeks before surgery) and Past (last smoked beyond four to eight weeks before surgery) smoking. Counts of events/totals are larger for Barrera et al,³¹ 2005; Kuri et al,⁵⁰ 2005; and Lugg et al,⁶⁴ 2017 than under the strict four-week definition since they contain groupings that fit the relaxed definition; IV: inverse variance.

eFigure 2: Postoperative complications between current and never smoking with flexible cutoff

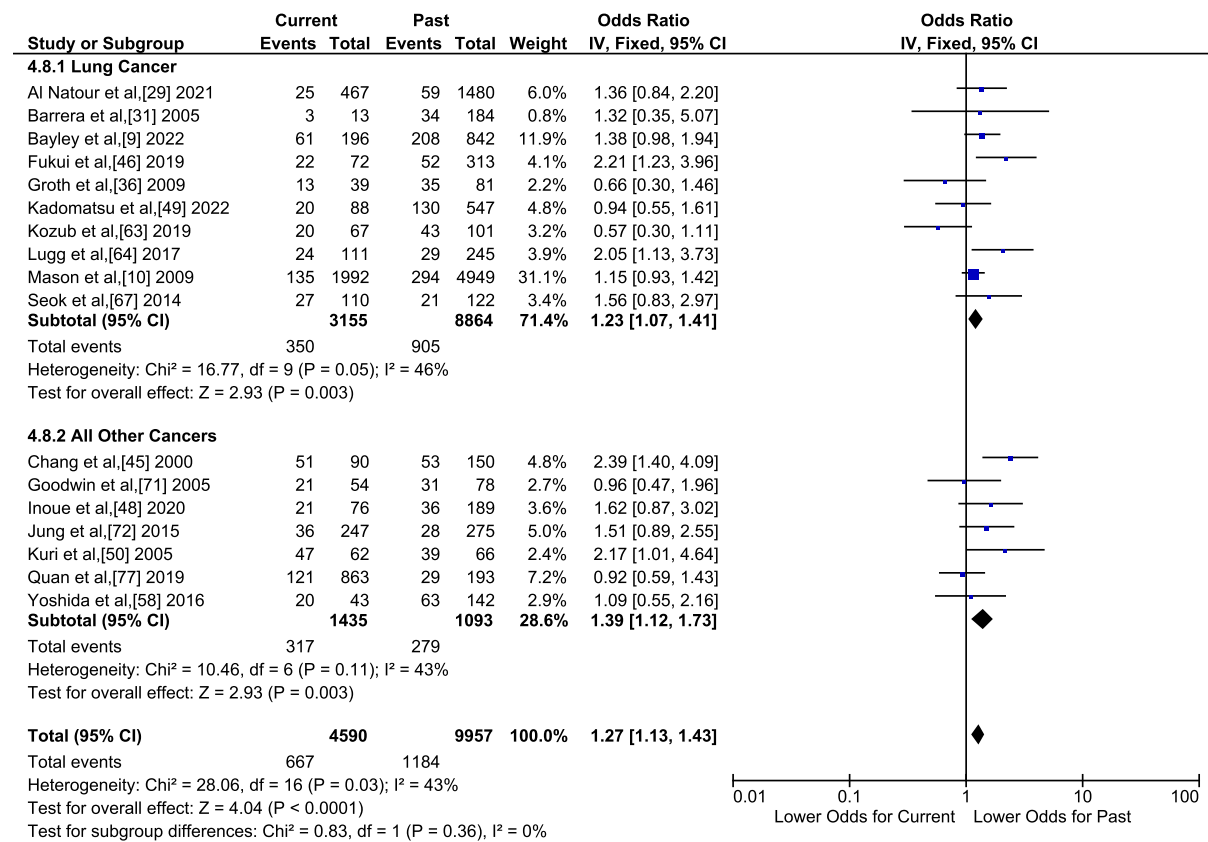


Footnotes

(1) Maximum single complication type

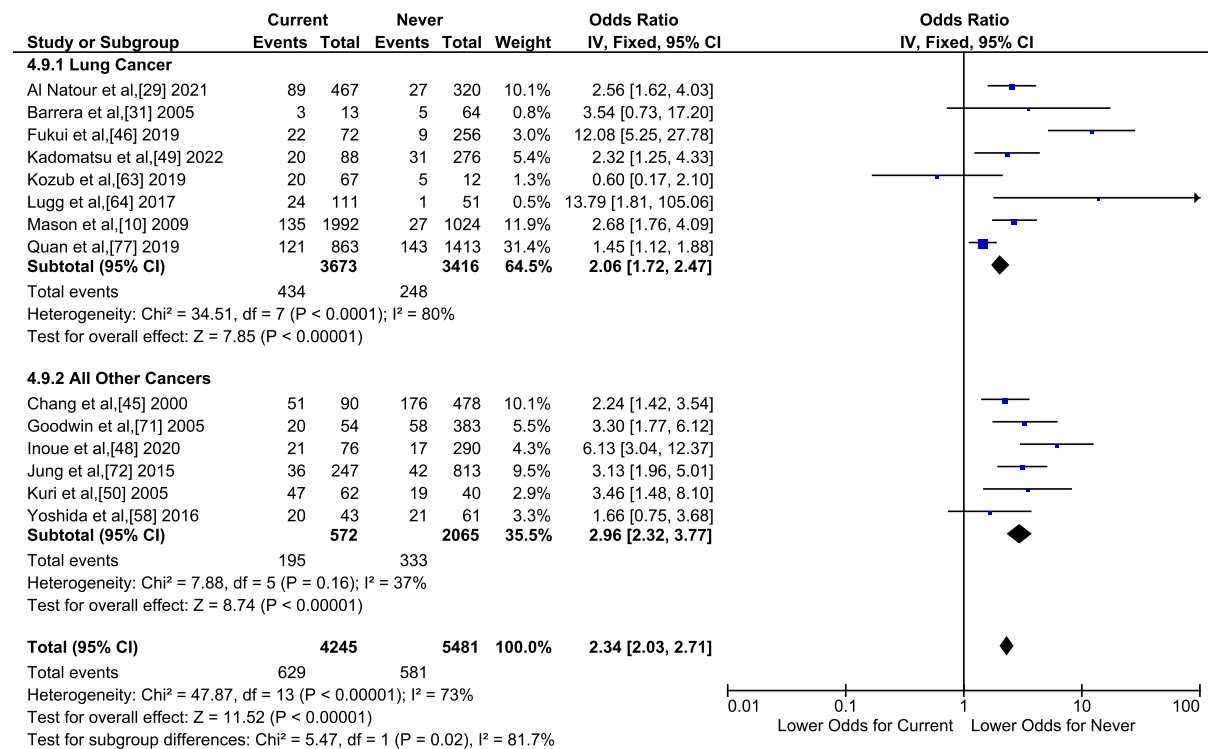
Note: Unadjusted odds ratio of any postoperative complication between Current (last smoked within four to eight weeks before surgery) and Never smoking. Counts of events/totals are larger for Barrera et al,³¹ 2005; Kuri et al,⁵⁰ 2005; and Lugg et al,⁶⁴ 2017 than under the strict four-week definition since they contain groupings that fit the relaxed definition; IV: inverse variance.

eFigure 3: Postoperative complications between current and past smoking for lung and all other cancers



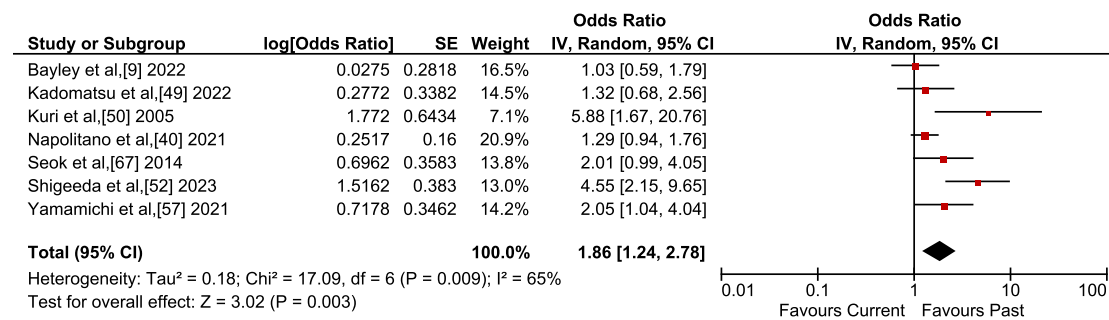
Note: Unadjusted odds ratio of any postoperative complication between Current (last smoked within four weeks before surgery) and Past (last smoked beyond four weeks before surgery) smoking. Studies grouped by lung cancer and all other cancers. IV: inverse variance.

eFigure 4: Postoperative complications between current and never smoking for lung and all other cancers



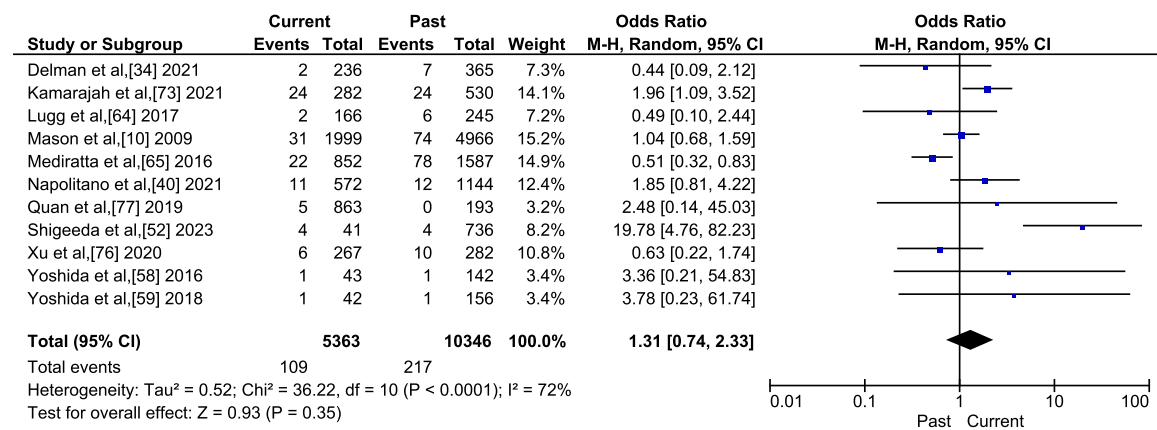
Note: Unadjusted odds ratio of any postoperative complication between Current (last smoked within four weeks before surgery) and Never smoking. Studies grouped by lung cancer and all other cancers. IV: inverse variance.

eFigure 5: Adjusted estimates of postoperative complications between current and past smoking with secondary definition



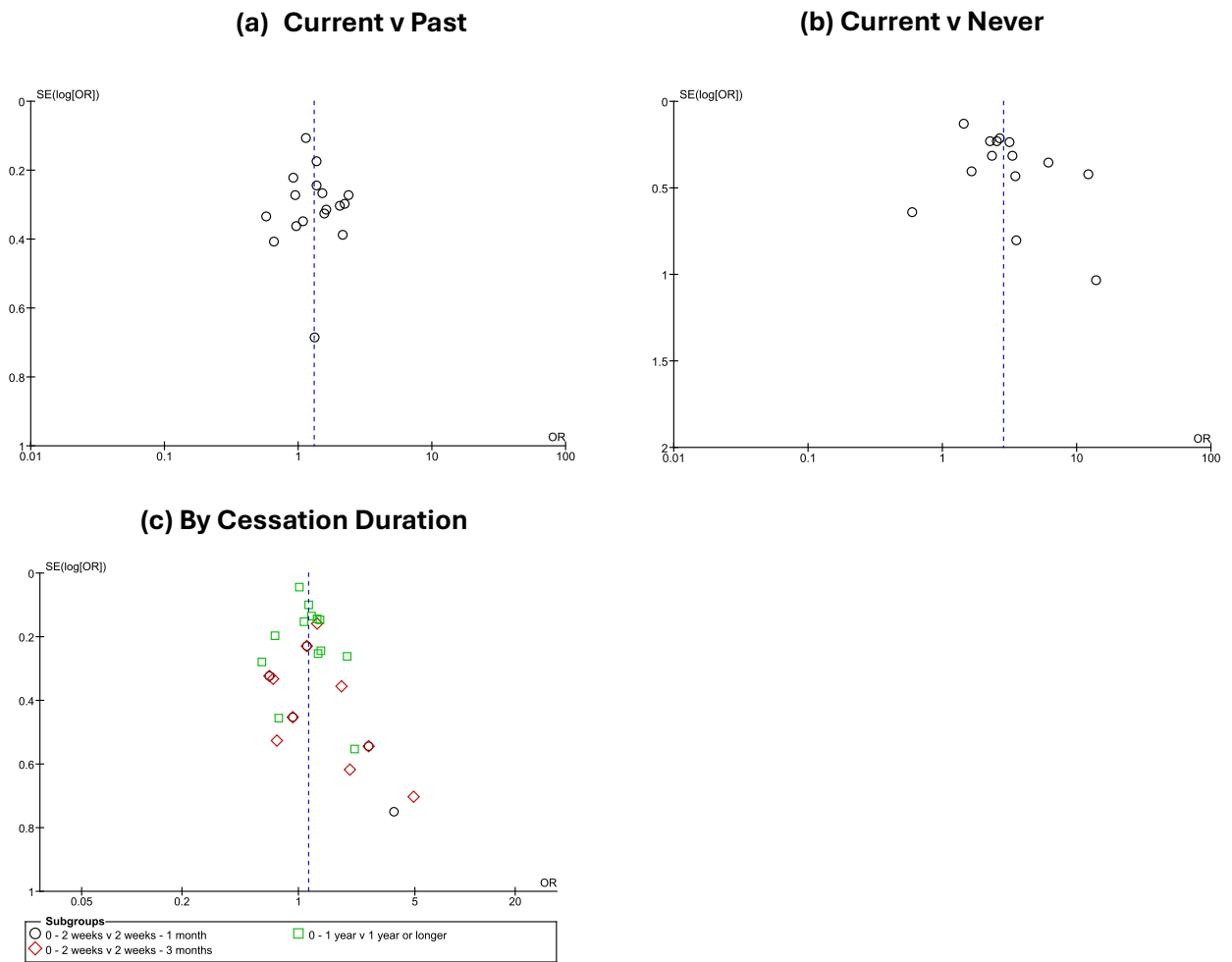
Note: Adjusted odds ratio of any postoperative complication by period between Current (last smoked within four weeks before surgery) and Past (last smoked beyond four weeks before surgery) smoking. Studies adjusted for age, sex, comorbidities such as diabetes or COPD, and surgery characteristics. SE: standard error; IV: inverse variance.

eFigure 6: 30-day postoperative mortality between current and past smoking



Note: Unadjusted odds ratio of mortality within 30 days between Current (last smoked within four weeks before surgery) and Past (last smoked beyond four weeks before surgery) smoking. M-H: Mantel-Haenszel.

eFigure 7: Funnel plot of meta-analyses



Note: Plot of study estimates and study size for (a) Figure 2 (b) Figure 3 and (c) Figure 4; SE: standard error; OR: odds ratio.