



Pilat, E. K., Stuart, J. M., & French, C. E. (2021). Tobacco smoking and meningococcal disease in adolescents and young adults: a systematic review and meta-analysis. *Journal of Infection*, 82(5), 135-144. <https://doi.org/10.1016/j.jinf.2021.02.018>

Peer reviewed version

License (if available):
CC BY-NC-ND

Link to published version (if available):
[10.1016/j.jinf.2021.02.018](https://doi.org/10.1016/j.jinf.2021.02.018)

[Link to publication record in Explore Bristol Research](#)
PDF-document

This is the author accepted manuscript (AAM). The final published version (version of record) is available online via Elsevier at <https://doi.org/10.1016/j.jinf.2021.02.018> . Please refer to any applicable terms of use of the publisher.

University of Bristol - Explore Bristol Research

General rights

This document is made available in accordance with publisher policies. Please cite only the published version using the reference above. Full terms of use are available: <http://www.bristol.ac.uk/red/research-policy/pure/user-guides/ebr-terms/>

Study	Risk of bias						Overall
	D1	D2	D3	D4	D5	D6	
Bruce, 2001	!	+	X	+	+	-	!
Cookson, 1998	!	+	X	+	+	-	!
Fischer, 1997	X	+	X	+	+	-	X
Harrison, 2008	!	+	X	+	+	-	!
Mandal, 2013	!	+	!	+	+	-	!
McCall, 2004	!	+	X	+	+	-	!
Robinson, 2001: participating in "smoky indoor activities"	!	+	X	X	+	-	!
Robinson, 2001: having a "smoker amongst intimate contacts"	X	+	X	X	+	-	X
Tully, 2006	!	+	X	+	+	-	!

D1: Bias due to confounding
 D2: Bias due to selection of participants
 D3: Bias in classification of exposures
 D4: Bias due to missing data
 D5: Bias in measurement of outcomes
 D6: Bias in selection of the reported result

Judgement
 ! Critical
 X Serious
 - Moderate
 + Low

Supplementary Figure 3: Domain-level risk of bias assessments for passive tobacco smoking effect estimates.^a

^aThe domain "Bias due to deviations from intended interventions" (Domain 4 in original tool) was not assessed in the adapted version of the ROBINS-I tool.

Study	Risk of bias						Overall
	D1	D2	D3	D4	D5	D6	
Bruce, 2001	!	+	X	+	+	-	!
Cookson, 1998	!	+	X	+	+	-	!
Fischer, 1997	X	+	X	+	+	-	X
Harrison, 2008	!	+	X	+	+	-	!
Hodgson, 2001	!	+	!	+	+	-	!
Imrey, 1996	!	+	!	+	+	-	!
Křížová, 1999	!	+	X	?	+	-	!
Mandal, 2013	!	+	!	+	+	-	!
McCall, 2004	!	+	X	+	+	-	!
Ridpath, 2015	X	+	!	+	+	-	!
Robinson, 2001	!	+	X	+	+	-	!
Stuart, 1988	!	+	!	+	+	-	!
Tully, 2006	!	+	X	+	+	-	!

D1: Bias due to confounding
 D2: Bias due to selection of participants
 D3: Bias in classification of exposures
 D4: Bias due to missing data
 D5: Bias in measurement of outcomes
 D6: Bias in selection of the reported result

Judgement
 ! Critical
 X Serious
 - Moderate
 + Low
 ? No information

Supplementary Figure 2: Domain-level risk of bias assessments for active tobacco smoking effect estimates.^{a,b}

^aThe domain “Bias due to deviations from intended interventions” (Domain 4 in original tool) was not assessed in the adapted version of the ROBINS-I tool.

^bThe domain-level assessments for *Stuart, 1988* apply to both calculated effect estimates. The domain-level assessments for *Křížová, 1999* also apply to both extracted effect estimates.

Ovid MEDLINE:

- 1 exp Meningococcal Infections/
- 2 neisseria meningiti*.mp.
- 3 (meningococcal adj (disease or infect* or invas* or invad*)).mp.
- 4 meningococc*.mp.
- 5 or/1-4
- 6 risk factor*.ti.
- 7 (smok* adj5 (active or passive or tobacco or cigarette or (second hand) or secondhand or involuntary or cigar)).mp.
- 8 tobacco.mp.
- 9 Tobacco Smoke Pollution/
- 10 exp Smoking/
- 11 or/6-10
- 12 5 and 11

EMBASE:

- 1 exp Meningococcal Infections/
- 2 neisseria meningiti*.mp.
- 3 (meningococcal adj (disease or infect* or invas* or invad*)).mp.
- 4 meningococc*.mp.
- 5 or/1-4
- 6 risk factor*.ti.
- 7 (smok* adj5 (active or passive or tobacco or cigarette or (second hand) or secondhand or involuntary or cigar)).mp.
- 8 tobacco.mp.
- 9 Tobacco Smoke Pollution/
- 10 exp Smoking/
- 11 or/6-10
- 12 5 and 11

Web of Science:

- 1 TS=(meningococcal infections)
- 2 TS=("neisseria meningiti*")
- 3 TS=(meningococcal NEAR (disease or infect* or invas* or invad*))
- 4 TS=meningococc*
- 5 or/1-4
- 6 TI=("risk factor*")
- 7 TS=(smok* NEAR/5 (active or passive or tobacco or cigarette or ("second hand") or secondhand or involuntary or cigar))
- 8 TS=(tobacco)
- 9 TS=(tobacco smoke pollution)
- 10 TS=(smoking)
- 11 or/6-10
- 12 5 and 11

Supplementary Figure 1: Full electronic search strategies.