

Interventions for smokeless tobacco use cessation: a Cochrane review

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Funding & declarations

- No funding :(
- JLB is a member of the Cochrane Tobacco Addiction Group & an associate editor for Cochrane
- FS, RC and KS are authors of an included study
- No conflicts of interest



Smokeless tobacco*

- >300 million people worldwide use smokeless tobacco, most in South and Southeast Asia
- Much variety:
 - Form
 - Ingredients
 - Use patterns
 - Health effects
- Potential interventions same as those for combustible tobacco
- Less research attention



Objectives

P: any users of any smokeless tobacco product

I: any intervention intended to help people quit smokeless tobacco use

C: placebo, other intervention, no treatment

O: abstinence from all tobacco at > 6 months

S: RCTs

- Replace a previous Cochrane review
- Assess the effects of interventions for smokeless tobacco use cessation
- Explore whether these differ by product type

Methods

- Cochrane systematic review
- Protocol (2022)
- Best practice: Cochrane, PRISMA, CTAG, Russell standard
- Searches to 16 February 2024
- Screening, data extraction, RoB all in duplicate
- Narrative synthesis and meta-analysis
- Certainty of evidence with GRADE

Analysis methods

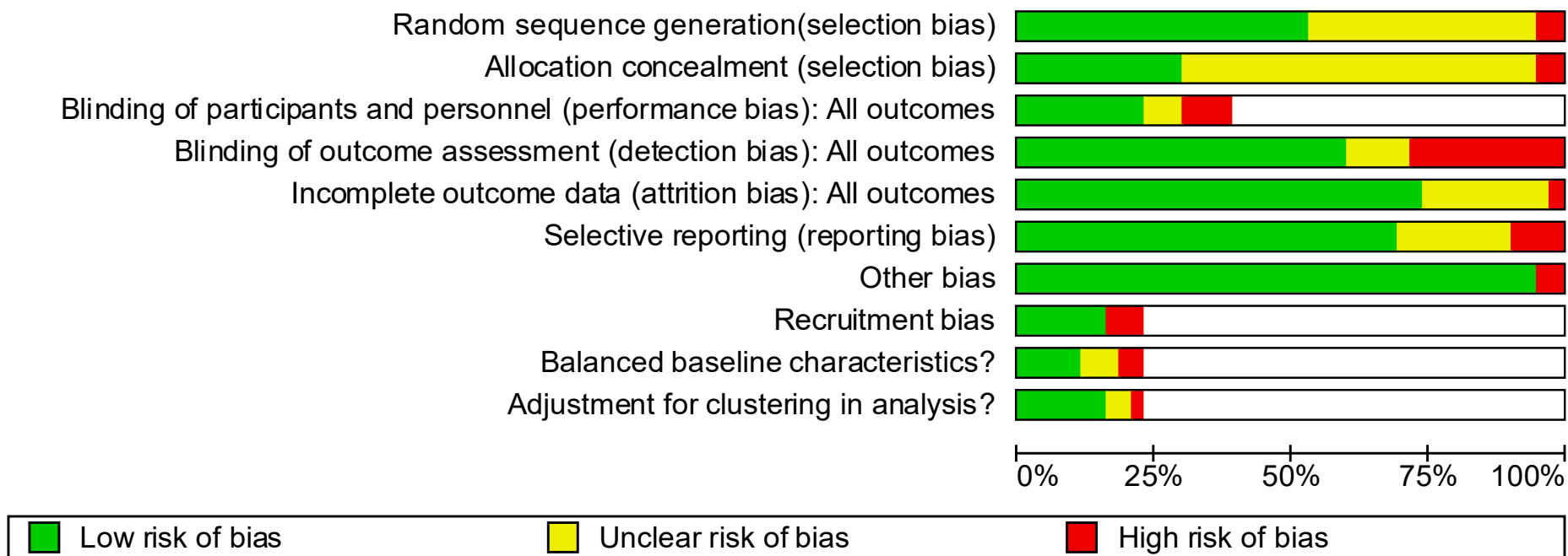
- Meta-analysis of RRs with 95% CIs
- Intention-to-treat; lost to FU = not abstinent
- Mantel-Haenszel model
- Planned sensitivity analyses:
 - High risk of bias
 - Smokeless-only abstinence
 - High levels of areca or betel use
- Planned subgroup analyses:
 - Geographical/cultural origin of the product
 - Inc. betel, areca, or slaked lime



What we found

- 43 trials of 20,346 people
- 33 in North America, 5 in India, 2 in Scandinavia, 1 in Pakistan and 1 in Turkey, 1 across multiple sites in Bangladesh, India and Pakistan
- Main comparisons:
 - Behavioural interventions (vs usual/min care):
 - Counselling (21)
 - Brief advice (7)
 - Pharmacotherapies (vs placebo/no med):
 - NRT (11)
 - Varenicline (2)
 - Bupropion (2)

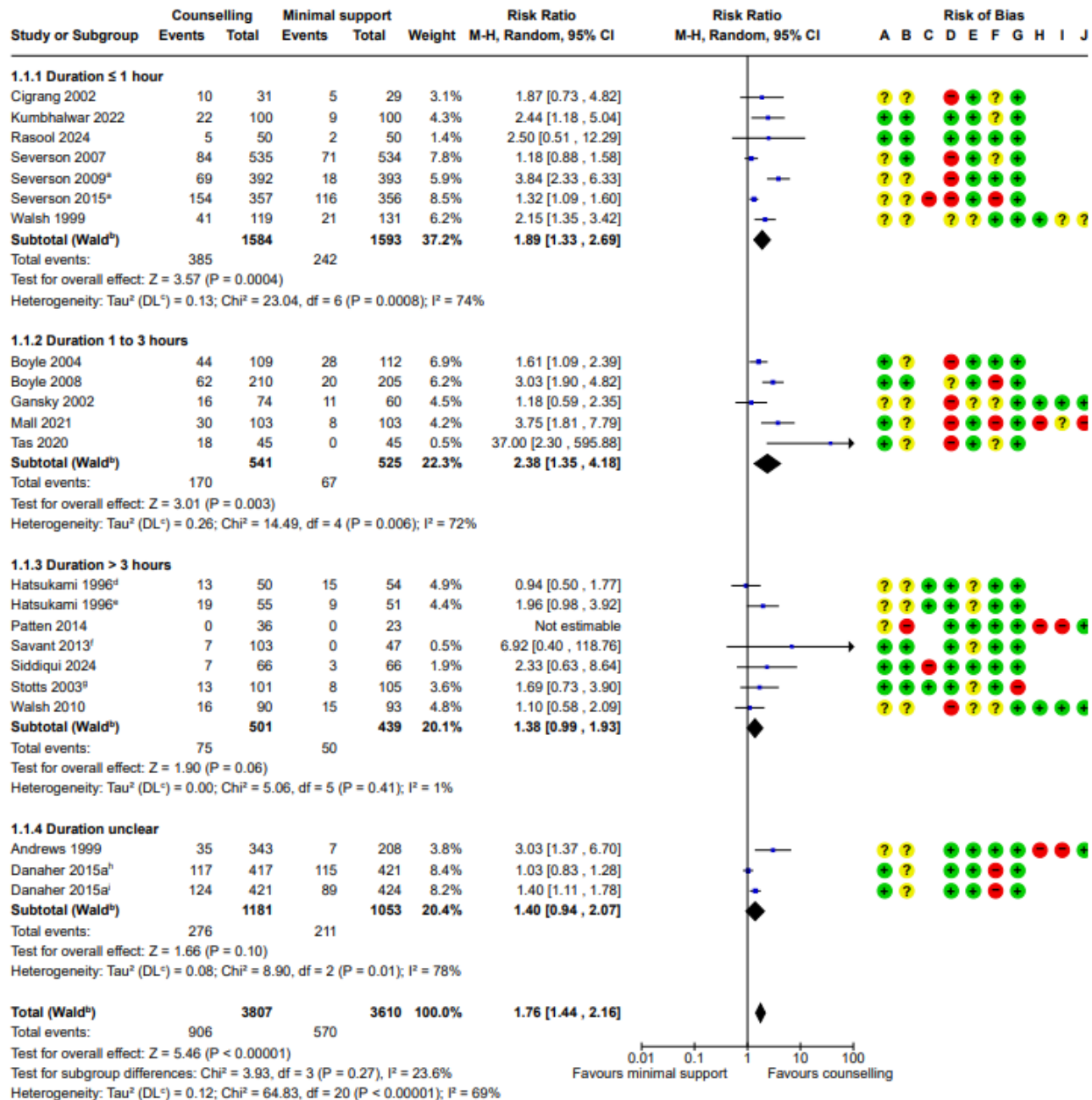




Risk of bias

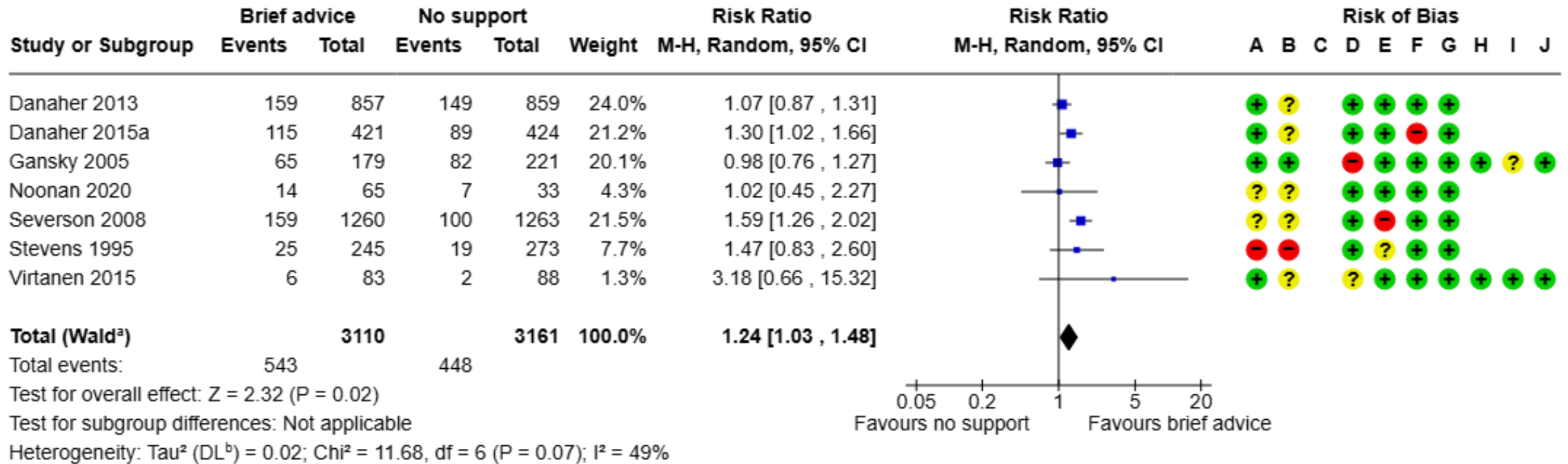
Overall:

- 5 at low risk of bias,
- 22 at high risk,
- 16 at unclear



Counselling vs minimal support

- I² of 69%
- Subgrouping by intensity and modality did not explain, but direction of effect consistent



Brief advice vs no support

- $I^2 = 49\%$
- CIs include no clinically significant benefit

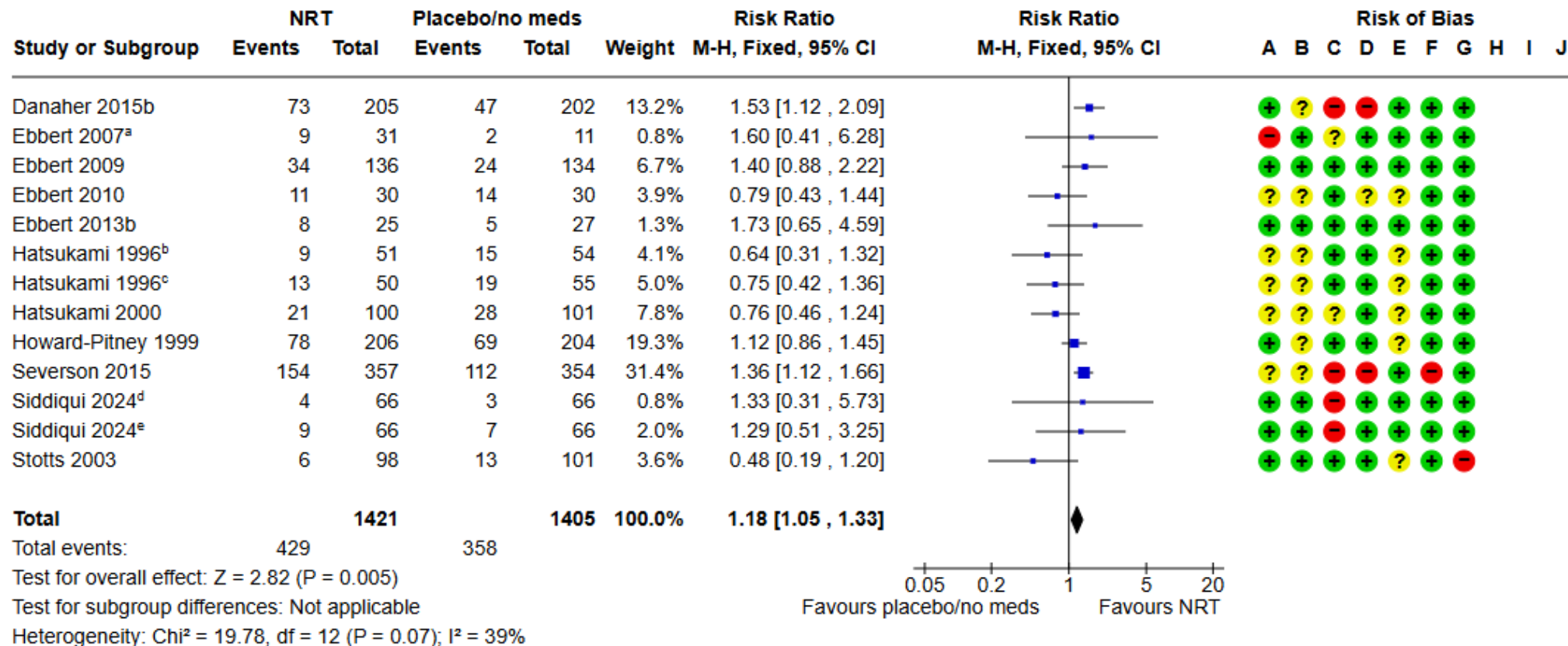
Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	Nº of participants (studies)	Certainty of the evidence (GRADE)
	Risk with usual care/minimal support	Corresponding risk with counselling			
Counselling versus usual care/minimal support Tobacco cessation at 6+ months follow-up	158 per 1000	278 per 1000 (228 to 341)	RR 1.76 (1.44 to 2.16)	7414 (21 studies)	⊕⊕⊕⊖ ^{a,b} Moderate
Brief advice versus no support Tobacco cessation at 6+ months follow-up	150 per 1000	186 per 1000 (155 to 222)	RR 1.24 (1.03 to 1.48)	6271 (7 studies)	⊕⊕⊕⊖ ^{b,c} Moderate

Behavioural support

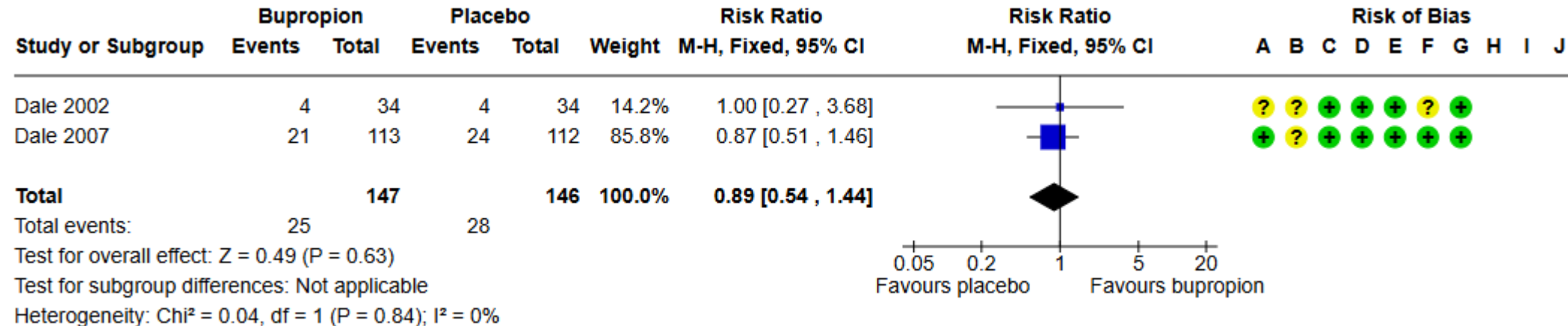
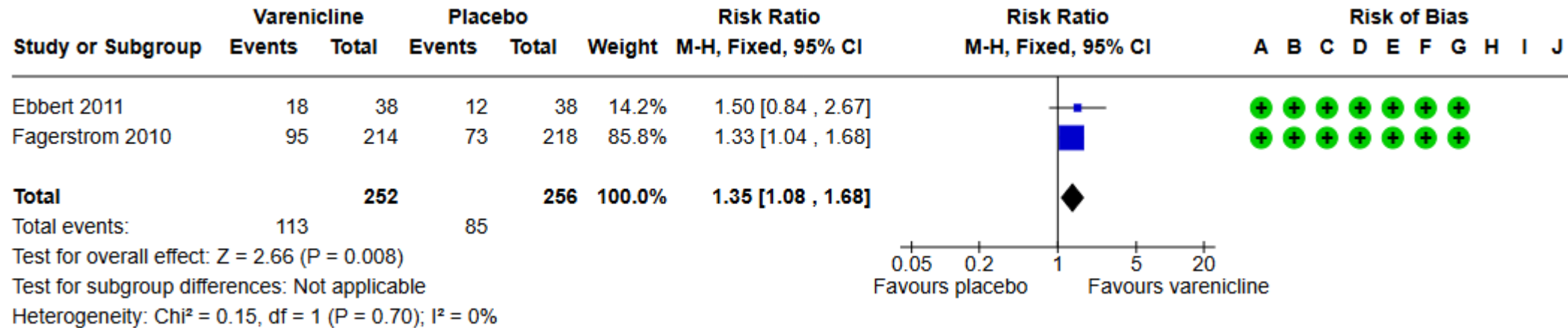
- a Downgraded one level for heterogeneity
- b Majority of studies at high risk of bias but not downgraded
- c Downgraded one level for imprecision

NRT vs placebo/no med

- $I^2 = 39\%$
- RoB sensitivity analysis changed direction of effect



Varenicline/Bupropion vs placebo



Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	Nº of participants (studies)	Certainty of the evidence (GRADE)
	Risk with placebo or no medication	Corresponding risk with pharmacotherapy			
Nicotine replacement therapy vs placebo or no medication Tobacco cessation at 6+ months follow-up	273 per 1000	323 per 1000 (287 to 364)	RR 1.18 (1.05 to 1.33)	2826 (11 studies)	⊕⊕⊖⊖ ^{a,b} Low
Bupropion vs placebo Tobacco cessation at 6+ months follow-up	192 per 1000	171 per 1000 (104 to 276)	RR 0.89 (0.54 to 1.44)	293 (2 studies)	⊕⊕⊖⊖ ^c Low
Varenicline vs placebo Tobacco cessation at 6+ months follow-up	332 per 1000	448 per 1000 (359 to 558)	RR 1.35 (1.08 to 1.68)	508 (2 studies)	⊕⊕⊕⊖ ^d Moderate

Pharmacotherapies vs placebo

- a Downgraded one level for risk of bias
- b Downgraded one level for imprecision
- c Downgraded two levels because of imprecision
- d Downgraded one level for imprecision

Conclusions

1

Moderate-certainty
evidence favouring
cessation counselling or
brief advice to quit

2

Moderate-certainty
evidence
favouring varenicline

3

Low-certainty evidence
favouring NRT

4

Low-certainty evidence
does not currently
support bupropion as a
smokeless tobacco
cessation intervention

Next steps

Only 8/43 trials conducted in South and Southeast Asia. However, 20/22 ongoing studies underway in these regions.

More work (and transparent reporting) exploring the variety of smokeless tobacco products and dual use with combustible tobacco, betel and areca.

Two trials tested the use of tobacco-free snuff for smokeless tobacco cessation, but no trials tested tobacco-free oral nicotine pouches.

Any
questions?

