

# Review: Nicotine replacement therapy is effective in both men and women

Cepeda-Benito A, Reynoso JT, Erath S. Meta-analysis of the efficacy of nicotine replacement therapy for smoking cessation: differences between men and women. *J Consult Clin Psychol*. 2004;72:712-22.

## QUESTION

In smokers, does the efficacy of nicotine replacement therapy (NRT) differ by sex?

## METHODS

**Data sources:** Studies were identified by searching MEDLINE, Psychological Abstracts International, Dissertation Abstracts International, Social Science Citation Index, and reference lists of the Cochrane Review and previous meta-analyses.

**Study selection and assessment:** Studies were selected if they were randomized, double-blind, placebo-controlled trials that reported treatment outcomes, validated smoking status with biochemical tests or collateral reports, and included men and women.

**Outcome:** Abstinence rates. Studies were pooled using both random and fixed effects. Results were similar for both models; the fixed-effects model analyses were reported.

## MAIN RESULTS

More participants were abstinent with NRT than with placebo in men and women com-

bined. Results were similar when analyzed by sex for all follow-up periods, except that the difference between NRT and placebo was not statistically significant at 12 months for women (Table).

## CONCLUSIONS

Nicotine replacement therapy increases the proportion of persons giving up smoking more than placebo at 3, 6, and 12 months.

In men, the difference between NRT and placebo is statistically significant at each follow-up point; in women, the difference is statistically significant at 3 and 6 months but not at 12 months.

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*For correspondence:* Dr. A Cepeda-Benito, Texas A&M University, College Station, TX, USA. E-mail [acb@tamu.edu](mailto:acb@tamu.edu). ■

## Nicotine replacement therapy (NRT) vs placebo for smoking cessation\*

Follow-up	Patient group	Number of trials	Weighted event rates		RBI (95% CI)	NNT (CI)
			NRT	Placebo		
≤ 3 mo	All	16	29%	16%	85% (68 to 102)	8 (7 to 10)
	Women	16	28%	15%	84% (60 to 109)	8 (7 to 11)
	Men	16	30%	16%	85% (61 to 110)	8 (6 to 11)
6 mo	All	17	19%	11%	76% (58 to 95)	13 (10 to 16)
	Women	17	18%	11%	63% (41 to 88)	15 (11 to 23)
	Men	17	21%	11%	92% (65 to 121)	11 (8 to 15)
≥ 12 mo	All	12	15%	11%	40% (22 to 60)	23 (15 to 42)
	Women	12	14%	12%	20% (-0.9 to 46)	Not significant
	Men	12	16%	10%	63% (34 to 97)	16 (11 to 30)

\*Abbreviations defined in Glossary; RBI, NNT, and CI calculated from data in article using a fixed-effects model.

## COMMENTARY

The hypothesis that men and women may respond differently to drug treatments is an important focus of research. As a clinician, I am reassured that, in large trials and meta-analyses that have included sufficient numbers of women and men to reach reliable conclusions about each group, women and men have usually benefited equally from a range of drug treatments. For example, the reduction in the risk for cardiovascular disease from antihypertensive treatment and lipid lowering by statins does not differ between men and women.

Caution is always necessary in drawing conclusions from retrospective subgroup analyses. It is particularly important that conclusions about possible sex effects are based on adequate sample sizes. For example, early reports concluded that men, but not women, benefited from antiplatelet therapy in secondary prevention of cardiovascular disease. An adequately powered meta-analysis subsequently showed this conclusion to be false: The treatment reduced mortality in women and men equally (1).

In analyzing placebo-controlled trials of NRT, Cepeda-Benito and colleagues reassuringly found that proportions of men and women

abstaining from smoking were similar at most follow-up points. The odds ratio for NRT vs placebo was not statistically significant for women at 12 months. However, the confidence interval around this odds ratio was compatible with a clinically significant benefit that overlaps with the effect in men.

In my primary care practice, we try to tailor smoking cessation treatment to the individual patient. This meta-analysis confirms that we are right to include NRT in the range of options available to both men and women seeking help to give up smoking, combining it with other forms of support and treatment when appropriate.

*Tim Lancaster, MBBS, FRCGP  
University of Oxford  
Oxford, England, UK*

## Reference

1. Collaborative overview of randomised trials of antiplatelet therapy—I: Prevention of death, myocardial infarction, and stroke by prolonged antiplatelet therapy in various categories of patients. Antiplatelet Trialists' Collaboration. *BMJ*. 1994;308:81-106