

Appendix Table 4. Smoking Cessation Intervention Strategies To Improve Success Rates for Quit Attempts*

Study, Year, Setting (Reference)	Design, Exposure, and Follow-up	Intervention	Participants, n	Results	Quality Rating
Studies in adults					
Aveyard et al., 2003 (21) United Kingdom Practice/provider settings	RCT 9 mo 12 mo after baseline	G1: Pro-Change self-help system with workbook and 3 questionnaires to generate tailored feedback G2: G1 plus 3 telephone calls G3: G1 plus 3 nurse visits C1: 2 standard self-help quit guides and 2 tip cards	2471 adults	No statistically significant difference in quit rates between intervention and control groups (G1, 11%; G2, 12%; G3, 10%; C1, 10%) in biochemically confirmed abstinence for 6-mo sustained abstinence and 12-mo point prevalence	Fair
Bohadana et al., 2000 (22) France, Western Europe Practice/provider settings	RCT 26 wk 6 wk and 3, 6, and 12 mo	G1: Nicotine inhaler and nicotine patch C1: Nicotine inhaler and placebo patch	400 adults	Abstinence was greater at 3 mo for intervention group than control group ($P = 0.02$) No significant difference between groups at 6- and 12-month follow-up	Fair
Canga et al., 2000 (24)† Spain, Western Europe; Practice/provider settings Hospital	RCT with systematic randomization 6 mo 6 mo	G1: Interview with nurse; self-help materials; 3 mo of transdermal NRT if eligible; 5 follow-up contacts C1: Usual care for diabetic smokers established in the Navarre diabetes care program	280 young adults, adults	Intervention group was significantly more likely than control group to quit at 6-mo follow-up (validated): ($P \leq 0.001$)	Fair
Carpenter et al., 2004 (25) United States Population-based	RCT 24 wk 3, 6, 12, and 24 wk	G1: Telephone-based reduction counseling and NRT and brief advice to quit G2: Motivational advice (5Rs)† and brief advice C1: No treatment	616 adults	At 6 mo, those receiving either intervention had greater percentages of "24-h quit attempts" (G1, 43%; G2, 51%) than those receiving no treatment (C1, 16%) ($P < 0.01$)	Fair
Clark et al., 2004 (26) United States Hospital Practice/provider settings	RCT Given materials at time of chest CT 1 and 12 mo	G1: Internet cessation resources handout with Web site addresses C1: Standard self-help material—NCI handout, ACS booklet	171 adults, age >50 y	No statistically significant differences in smoking status found at 1-mo or 1-y follow-up	Fair
Dalsgarth et al., 2004 (27) Denmark Hospital	RCT 7 wk 26 wk after baseline	G1: 2 motivating telephone calls, 5 clinic visits, and bupropion SR C1: 2 motivating telephone calls, 5 clinic visits, and placebo	336 adult hospital employees	Continuous abstinence at 26 wk: G1, 18%; C1, 7% ($P = 0.008$)	Fair
Garvey et al., 2000 (28) United States Population-based	RCT 2 mo 1, 7, 14, and 30 d and 2, 3, 6, 9, and 12 mo after cessation	All participants received self-help booklet and brief behavioral counseling (5–10 min per visit, for 1 y) G1: Low dependence, 2-mg gum G2: Low dependence, 4-mg gum G3: High dependence, 2-mg gum G4: High dependence, 4-mg gum	608 adults	Quit rates at 1-y follow-up: Low-dependence smokers: placebo (11.2%); 2 mg (19.5%); 4 mg (18.4%) ($P = 0.20$ for linear trend) High-dependence smokers: placebo (6.1%); 2 mg (15.7%); 4 mg (20.7%); ($P = 0.002$ for linear trend)	Fair
Hall et al., 2004 (29) United States Population-based	RCT Brief: 12 wk Extended: 52 wk 12, 24, 36, 52 wk	G1: Brief nortriptyline: nortriptyline for 12 wk; 5 counseling sessions and NRT patch at week 5 C1: Brief placebo: placebo for 12 wk; 5 counseling sessions and NRT at week 5 G2: Extended nortriptyline: G1 plus extended pharmacotherapy and counseling (1 session per month) for 52 wk C2: Extended placebo: G2 but with placebo used instead of nortriptyline	160 adults	Nortriptyline was more effective than placebo at 12 wk (OR, 0.69 [95% CI, 0.49–0.92]; $P = 0.02$) and 52 wk (OR, 0.47 [CI, 0.30–0.75]; $P = 0.001$); however, 52 wk of nortriptyline did not differ significantly from placebo at that same time frame	Fair
Hennrikus et al., 2005 (30)† United States Hospital	RCT 6 mo 7–18 d and 12 mo after discharge	G1: 2 smoking cessation manuals, community resources directory, medical record label to care providers, postdischarge letter G2: G1 plus extended bedside counseling session and 3–6 telephone calls for 6 mo after discharge C1: 2 cessation manuals and community resources directory	2095 adults	Cotinine-corrected intention-to-treat analysis found percentage of abstinence at 12-mo follow-up ($P > 0.05$) Self-reported abstinence rates were significantly higher for G2 ($P < 0.05$)	Fair
Hitsman et al., 1999 (31)† United States Population-based	RCT 10 wk 1 wk and 1, 3, and 6 mo after quit date	G1: Individual CBT; fluoxetine, 30 mg, for 10 wk; fluoxetine adherence level set at <150 ng/mL G2: Same as G1, except 60-g fluoxetine dose and fluoxetine adherence level set at 300 ng/mL C1: Individual CBT plus placebo	253 adults	No significant results found at 1-, 3-, and 6-mo follow-up Individual differences that predict cessation when fluoxetine is combined with CBT include higher levels of weight concern, degree of depression, and levels of nicotine dependence	Fair
Holt et al., 2005 (32)† New Zealand; Community-based Population-based	RCT 2 mo 3 and 7 wk and 3, 6, 9, and 12 mo after target quit date	G1: Bupropion and counseling C1: Placebo and counseling	134 adolescents, young adults, adults	Intervention group significantly more likely than control group to be continuously abstinent at 3 mo (risk ratio, 2.54 [CI, 1.30–5.00])	Fair
Jones et al., 2001 (33)† United Kingdom Hospital	RCT 6 mo 8 wk, 6 mo after ICU discharge	G1: Verbal encouragement to patients to remain nonsmokers and for immediate family not to smoke in the same room as the patient, plus self-help manual C1: G1 without the manual	61 adults	Of the smokers pre-ICU admission, fewer intervention patients resumed smoking compared with controls at 6-mo follow-up Antismoking advice in rehabilitation package was associated with risk ratio of 0.11 (CI, 0.02–0.64) and reduction in smoking of 89% (CI, 98%–36%)	Fair
Jorenby et al., 1999 (34) United States Community-based	RCT 9 wk 10 wk and 3, 6, and 12 mo after start of study	G1: bupropion and nicotine patch G2: bupropion and placebo patch G3: placebo tablets and nicotine patch C1: placebo tablets and placebo patch	893 adults	Those receiving bupropion and patch were most likely ($P \leq 0.001$) to be abstinent at 6 and 12 mo	Fair

Appendix Table 4—Continued

Study, Year, Setting (Reference)	Design, Exposure, and Follow-up	Intervention	Participants, n	Results	Quality Rating
Killen et al., 2000 (16) United States Population-based	RCT 17 wk 4, 10, and 26 wk	G1: NRT transdermal system patch for 8 wk plus 20-mg paroxetine for 9 wk G2: NRT transdermal system patch for 8 wk plus 40-mg paroxetine for 9 wk C1: NRT transdermal system patch for 8 wk plus placebo for 9 wk	224 adults	No significant differences in abstinence found between groups at any follow-up time period	Good
Lancaster et al., 1999 (36) United Kingdom Practice/provider settings	RCT with systematic randomization 6 wk 3 and 12 mo after quit date	G1: Brief advice to quit from general practitioner, plus extended counseling with a nurse; leaflet on cessation; fact sheet on NRT; invitation to contact the research nurse for more intensive, tailored counseling; NRT if necessary C1: Brief advice to quit from the patients' general practitioners	497 adults	No significant differences found between groups at 3- and 12-mo follow-up	Fair
Lerman et al., 2004 (37) United States Population-based	RCT 8 wk 8 wk and 6 mo	G1: 8 wk of nicotine nasal spray and 7 sessions of behavioral group counseling G2: 8 wk of transdermal nicotine therapy (i.e., patch) and 7 sessions of behavioral group counseling	299 adults	No statistically significant difference found between treatment groups at 6 mo (G1, 12.2%; G2, 15%; $P > 0.20$) Smokers who were highly dependent, obese, or members of minority groups achieved higher rates of abstinence with nasal spray	Fair
MacLeod et al., 2003 (17) Australia Population-based	RCT 10 wk 1, 2, 3, and 6 mo	G1: Nicotine patch and 5 telephone counseling calls C1: Nicotine patch only	854 adults	Telephone counseling improves cessation rates when used with the patch 28-d continuous abstinence rates at 6 mo: G1, 30.6%; C1, 22.4% ($P = 0.01$) 90-d continuous abstinence rates: G1, 26.7%; C1, 18.6% ($P = 0.004$)	Good
Peterson, 2004 (39) [†] United States Hospital	RCT 3 mo 12 mo	G1: Brief physician counseling and usual care plus nurse managed, cognitive-behavioral relapse prevention intervention given before discharge, <5 structured telephone contacts after discharge, and counseling for relapse management as needed C1: Brief physician counseling, self-help pamphlet, and list of community resources	277 adult women	No significant differences between groups at 12-mo follow-up	Fair
Simon et al., 2004 (41) United States Hospital	RCT 7 wk 7 wk and 3, 6, and 12 mo	G1: 7-wk course of bupropion, 2-mo transdermal NRT, 1 visit with counselor (30- to 60-min session), and 5 telephone follow-up calls C1: Same as G1 except participants received placebo instead of bupropion	244 adults (86% male)	No statistically significant differences in smoking cessation rates at end of medication or at 3, 6, and 12 mo Addition of 7-wk treatment with bupropion did not significantly increase quit rates over NRT and counseling	Fair
Swan et al., 2003 and 2003 (42, 43) United States Practice/provider settings	RCT 12 mo 3 and 12 mo	All participants received bupropion SR for 7 wk G1: 150 mg of bupropion SR, brief counseling telephone call the day after quit date, personalized intervention materials, and access to 24-h automated support line G2: G1 except 300 mg of bupropion SR G3: 150 mg of bupropion SR, self-help materials, support materials for family and friends, in-depth telephone counseling session, 4 brief telephone counseling calls, and access to toll-free "quitline" for 1 y G4: G3 with 300 mg of bupropion SR	1524 adults	7-d point prevalence of nonsmoking at 3 mo for 300 mg vs. 150 mg: OR, 1.18 (CI, 1.05–1.32; $P = 0.005$) At 12 mo, moderate vs. minimal counseling: OR, 1.21 (CI, 1.08–1.35; $P = 0.001$) OR for 12-mo smoking was 23% higher for those who received tailored mailings vs. those who received proactive telephone counseling: OR, 1.24 (CI, 1.03–1.47) 300-mg dose was associated with more adverse events	Fair
Studies in special populations					
Brown et al., 2001 (23) United States Population-based	RCT 6 wk 1, 6, and 12 mo	G1: Group CBT for smoking cessation plus additional CBT on coping for depression C1: Group CBT for smoking cessation alone	179 formerly depressed adults	In main analysis, smoking abstinence did not differ when CBT tailored for depression was added; in secondary analysis, CBT tailored for depression had significant interactions with heavy smoking and recurrent depression: OR, 2.30 (CI, 1.05–5.03)	Fair
Joseph et al., 2004 (20) United States Residential program for treatment of substance use disorder	RCT 10 wk 3, 6, 9, 12, and 18 mo	G1: Individual behavioral therapy; recommended nicotine patches (21 mg for 6 wk, 14 mg for 2 wk, and 7 mg for 2 wk) for smokers; combination of patches and nicotine gum for persons who smoked >20 cigarettes per day C: Temporary control group with treatment delayed for 6 mo	499 adults with substance use disorders	At 3 and 6 mo, smoking abstinence rates were significantly greater in treatment groups than in temporary control group ($P < 0.000$ and $P = 0.02$, respectively)	Good
Joseph, 1993 (35) United States Hospital	Prospective cohort study 3 wk 1 y after hospitalization	G1: No specific information on smoking or cessation; smoking allowed in designated rooms and not during group sessions G2: Upon admission, patient signed contract to abstain from nicotine during stay; cessation program provided; clonidine patches available	706 adults enrolled in substance abuse treatment program	Patients who wanted to quit smoking at 3-wk follow-up: prepolicy, 24%; postpolicy, 61% ($P < 0.001$) Patients who quit smoking at 1-y follow-up: prepolicy, 3%; postpolicy, 8% ($P < 0.05$)	Fair

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Appendix Table 4—Continued

Study, Year, Setting (Reference)	Design, Exposure, and Follow-up	Intervention	Participants, <i>n</i>	Results	Quality Rating
McBride et al., 2004 (38) United States Military medical center	RCT First trimester to delivery and 12 mo postpartum 28 wk pregnant Postpartum 2, 6, and 12 mo	G1: Usual care plus late pregnancy relapse kit and 6 counseling calls G2: G1, plus the partners received telephone counseling and support guide (partners who smoked received cessation aids and counseling) C1: Usual care by provider	583 pregnant women and their partners	No statistically significant difference between groups at any follow-up point In late pregnancy, more partners abstinent in G2 (15%) than C1 (5%); <i>P</i> = 0.02	Fair
Quist-Paulsen and Gallefoss, 2003 (18) Norway Hospital: cardiac ward	RCT 5 mo 12 mo	G1: Self-help booklet on how to quit smoking plus cardiac nurse consultation during in-patient days and telephone consultation for up to 5 mo after discharge C1: Group sessions with nurses, with minor emphasis on smoking cessation and no further advice or instruction on how to quit	240 adults	At 1 y, quit rate was greater (57%) in intensive nurse intervention group than in minimal intervention group (37%) (absolute risk reduction, 20 percentage points [CI, 6.4–33.0 percentage points]; <i>P</i> = 0.004)	Good
Ratner et al., 2004 (40) Western Canada Teaching hospital	Randomly assigned pretest–posttest control group experiment Not reported 6 and 12 mo	G1: 2 face to face counseling sessions and 9 telephone counseling sessions C1: Standard hospital treatment	237 surgical patients	G1 more likely to be abstinent than C1 (74% vs. 53%; <i>P</i> = 0.003) at 6 mo, but difference was not significant at 12 mo after surgery	Fair
Reid et al., 2003 (19) Canada Hospital: tertiary care cardiac facility	RCT 8 wk 3 mo and 1 y	G1: Self-help booklet given in the hospital, then follow-up by nurse counselor at 4 wk after discharge; if patient was smoking, nurse provided three 20-min face-to-face sessions over 8 wk and offered nicotine patch therapy	254 hospitalized patients with coronary artery disease	Smoking cessation rates increased from 42% at hospitalization to 53% at 3-mo follow-up (<i>P</i> = 0.05), but difference was not significant at 1-y follow-up	Good

* ACS = American Cancer Society; C = control group; CBT = cognitive behavioral therapy; CT = computed tomography; G = intervention group; ICU = intensive care unit; NCI = National Cancer Institute; NRT = nicotine replacement therapy; OR = odds ratio; RCT = randomized, controlled trial; SR = sustained release.

† General and special populations.

‡ Relevance, Risks, Rewards, Roadblocks, Repetition.