APPENDIX A: SEARCH STRATEGY

PubMed: Search on March 10, 2010 (yield = 463 articles)

((“smoking cessation”[MeSH Terms] OR (“smoking”[All Fields] AND “cessation”[All Fields]) OR “smoking cessation”[All Fields]) OR (“Smoking/prevention and control”[Mesh:noexp] OR “Smoking/therapy”[Mesh:noexp])) AND (“Depression”[Mesh] OR ((“Depressive Disorder”[Mesh:noexp] OR “Depressive Disorder, Major”[Mesh]) OR “Dysthymic Disorder”[Mesh]))

Embase: Search on March 10, 2010 (yield = 489)

‘depression’/de OR ‘agitated depression’/exp OR ‘atypical depression’/exp OR ‘depressive psychosis’/exp OR ‘dysphoria’/exp OR ‘dysthymia’/exp OR ‘endogenous depression’/exp OR ‘major depression’/exp OR ‘masked depression’/exp OR ‘melancholia’/exp OR ‘mixed anxiety and depression’/exp OR ‘mixed depression and dementia’/exp OR ‘mourning syndrome’/exp OR ‘organic depression’/exp OR ‘reactive depression’/exp OR ‘recurrent brief depression’/exp AND (‘smoking cessation’/exp/mj OR ‘smoking cessation program’/exp/mj)

PsycINFO: Search on March 10, 2010 (yield = 219)

(DE “Depression (Emotion)”) or (DE “Major Depression” or DE “Affective Disorders” or DE “Anaclitic Depression” or DE “Dysthymic Disorder” or DE “Endogenous Depression” or DE “Reactive Depression” or DE “Recurrent Depression” or DE “Treatment Resistant Depression”) and ((“Smoking Cessation” or (DE “Drug Rehabilitation”) and (DE “Tobacco Smoking”))

Cochrane Library: Search on March 10, 2010 (yield = 169)

Smoking cessation and depression (limit clinical trials)

APPENDIX B: REVIEWER COMMENTS AND RESPONSES

Reviewer	Comment	Response
Question 1: Are the objectives, scope, and methods for this review clearly described?		
1	Yes – no comment	Thank you.
2	Yes – excellent review and very clearly written	Thank you.
3	The selection of appropriate outcome measures warrants more attention on p 14 or p 17 line 8. See the Hughes et al 2003 report of recommendations of the abstinence outcome measures work-group of the Society for Research on Nicotine and Tobacco (Hughes J. R., Keely J. P., Niaura R. S., Ossip-Klein D. J., Richmond R. L., Swan G. E. Measures of abstinence in clinical trials: issues and recommendations. *Nicotine Tob Res* 2003; **5**: 13–25).	We have further clarified outcome measures in the methods section. Operationalization of smoking cessation was informed by those used in Cochrane reviews of smoking cessation which is based on the Russel Standard (West R, Hajek P, Stead L, Stapleton J. Outcome criteria in smoking cessation trials: proposal for a common standard. *Addiction* 2005;100(3):299-303).
	The availability of biological verification of self-report (CO or cotinine) in only a couple of studies should also be noted as a limitation in this literature.	All included studies use biological verification of self-report smoking cessation.
	The systematic search strategy is among the many strengths of the review. It may be implicit in the MESH term "smoking", but it would be worth indicating on p 13 and/or in Appendix A that "nicotine" and "tobacco" are subsumed in that category. Tobacco currently only appears under PsycINFO.	"Tobacco" and "nicotine" are not indexed under the MESH term "smoking." Adding these terms yields an additional 81 articles of which none met our eligibility criteria.
4	Yes – no comment	Thank you.
5	Yes – no comment	Thank you.
6	Yes - Thanks for the opportunity to see this work. The key questions are succinctly and clearly defined in logical sequence. Language is clear and concise. Figure 1 page 13 is helpful. In general I think this review has been well conducted and well summarized.	Thank you.
Question 2: Is there any indication of bias in our synthesis of the evidence?		
1	No – no comment	Thank you.
2	P 25 lines 22-23----check numbers	Numbers are correct.
	P 27 line 11----it would be easier for the reader if you consistently describe the comparisons being made. For example, it would be a lot easier to grasp this if the subtitle was: "Antidepressant therapy +cotreatment versus placebo +co-treatment" rather than how it is written. Same issue occurs again in line 15---I would switch "antidepressants" and "behavioral"	We agree and have made the changes requested.
	P 29 line 15 table 7---add in risk estimates	Comparisons nonsignificant and risk estimates not reported.
3	No - Comments: The report appears to be rigorously objective.	Thank you.
4	No – no comment	Acknowledged

Reviewer	Comment	Response
5	No – no comment	Acknowledged
6	Possibly - Search: Limiting the search to English Language only will introduce bias, as will limiting the search to only the peer reviewed literature (publication bias). There may be other important trials in progress.	Non-English language articles are beyond the scope of this review. Inclusion of non–peer reviewed literature is controversial as these reports are often incomplete and can differ from final peer reviewed publication. An advantage of non-peer reviewed literature is a greater ability to detect publication bias. For this review, we thought the potential negatives of included these types of reports outweighed the potential advantages.
	Page 4: when referring to small positive effects of trials it is unclear whether these are statistically or clinically important differences? Did they "show" effects? Or simply "suggest" effects? Or just "trends" that could be due to chance. Could the wording here be tightened so this is clearer?	We have added greater specificity to the language.
	Page14: it is unclear why hospital based interventions were excluded? If seeking to include trials of people with current depressive symptoms, then an inpatient setting might capture some of these? (key question 2) Ditto the exclusion of relapse prevention trials may have excluded some direct or indirect evidence of efficacy of sequential treatment strategies (key question 4)	Stakeholders interested in outpatients and smoking cessation. However, we agree that including studies of relapse prevention could yield some indirect evidence but we thought that this would be too indirect for our purposes in this review.
Question 3: Are there any studies on of interest to the VA that we have overlooked?		
1	NO- no comment	Acknowledged
2	No – no comment	Acknowledged
3	The following study by McClure et al. appears to meet the criteria in Table 1 and is of particular interest to VHA given the focus on varenicline. If there is a reason for exclusion it would be important to clarify and there would still appear to be value in addressing the findings as they relate to KQ5 since there is currently no mention of varenicline in the document. McClure JB, Swan GE, Jack L, Catz SL, Zbikowski SM, McAfee TA, Deprey M, Richards J, Javitz H., Mood, side-effects and smoking outcomes among persons with and without probable lifetime depression taking varenicline. J Gen Intern Med. 2009 May;24(5):563-9. Epub 2009 Feb 24.	We identified and excluded McClure study because report did not provide data on rates of smoking cessation for the depressed subgroup by intervention arm. Therefore, we could not include these data in our analysis of the comparative effectiveness of smoking cessation interventions for depressed patients.
	Two recent qualitative reviews also seem worth citing in the background: Hitsman B, Moss TG, Montoya ID, George TP. Treatment of tobacco dependence in mental health and addictive disorders. Can J Psychiatry. 2009 Jun;54(6):368-78. Review. Hall SM. Nicotine interventions with comorbid populations. Am J Prev Med. 2007 Dec;33(6 Suppl):S406-13.	Thank you for this suggestion. We have added these to the background section.
4	No – no comment	Acknowledged
5	No – no comment	Acknowledged

Reviewer	Comment	Response
6	Excluding evidence based on timing of outcome reporting: figure 2 page 20. I have trouble reconciling what I read in the report results with what is detailed about trial flow in figure 2. Figure 2 suggests trials were excluded based on their choice of outcomes, or their choice of outcome reporting timepoint post intervention. In general terms, excluding evidence on the basis of outcomes is not recommended, if the trials otherwise meet inclusion criteria (population, design, intervention). For the 6 articles that reported outcomes of interest, but not at 6 and 12 months, it is possible that useful data do exist – but not in the published reports. Some description of these trials and their data might be informative, even if they are not subsequently able to contribute to predefined meta-analyses, or be used to inform the evidence summary. This is also true for the 14 articles that did not report the outcome of interest in their publications but otherwise met inclusion criteria (design, population, intervention) – perhaps the outcome data you sought does exist, and might be available from investigators.	As we described, few (n = 3) of the studies enrolled patients with depressive symptoms. Most included studies are secondary analysis, using history of depression. The studies excluded typically report smoking cessation outcomes, but not in the subgroup of interest (those with depression) and many are small without the power to evaluate interaction effects between depression and smoking cessation interventions. Also 6- and 12-month outcomes are clinically relevant. Contacting the authors for additional data is beyond the scope of these reviews. However, we've raised the possibility of missing studies with unpublished but relevant outcomes.
	In summarizing evidence, and if making suggestions for a future research agenda, then acknowledging these additional trials might be helpful: rather than undertaking new trials, considering making better use of existing data is also important. This can take the form of secondary analyses of existing trial data, or attempting individual patient data meta-analysis	The suggestions for patient level meta-analysis or secondary analysis of existing trial data has been incorporated into possibilities for future research.
Question 4: Please write additional suggestions or comments below. If applicable, please indicate the page and line numbers from the draft report.		
1	Comments were about the topic in general and not the report.	OK

Reviewer	Comment	Response
2	P1 line 5---add prevalence	We added prevalence.
	P3 line 12---do you include chantix?	Yes, but no trials using this drug met our eligibility criteria.
	P4 line 15---clarify what the antidepressant trials are compared to	We have clarified in text.
	P 5 line 10 ---clarify: does "control condition" belong in this sentence	Yes it does.
	P 6 line 6---I would rephrase this "…does treatment effectiveness differ by whether smoking cessation/depression treatments are delivered concurrently or sequentially?"	We have made this change.
	P 8 line 12----"for adding behavioral mood management counseling to _____what?	We have clarified in text.
	P 10 line 14-16--- clarify the sequential/concurrent text. perhaps add an example on line 16. "… depression. For example…."	We have clarified in text.
	P 10 line 12 ----might add sentence after "sequentially" that says, "It is plausible but unstudied" if this is true.	We have added this sentence.
	P 19 line 7---? Manually pulled? You might rephrase this	We have rephrased this sentence.
	P 21 table 3---I think you should try and fit this on one page and definitely should add the setting to this table. Please also define FTND	We have modified table and "FTND" is defined in the footnotes of Table 3.
	P 27 line 22 table---note it should be "approach" not "approached". It would be nice to include a summary estimate in this table as well as many of the others also.	We have made this change and include summary estimates in the text, when available, for the comparisons of interest, smokers with depression by intervention arm.
	P 28 line 10---switch antidepressant and behavioral to make the comparisons clearer	We have changed all the title to make this clearer.
	P 29 line 15 table 7---add in risk estimates	We include risk estimates in the text, when available, for the comparisons of interest, smokers with depression by intervention arm.
	P 29, line 23---clarify what active control is	We have added example of active control.
	p 32 line 9 use "at" rather than "of"	We have made this change.
	Table 9---risk estimates would be helpful	We include risk estimates in the text, when available, for the comparisons of interest, smokers with depression.
	39 line 18---intervention rather than "interventions"	We have made this change.
	P 40. I would move the full sentence beginning in line 11-12 to the beginning of the paragraph	We respectfully disagree. This sentence belongs in the paragraph about mood management treatments.
	P 44 line 19----??? "can make"????	We have clarified the language.

Reviewer	Comment	Response
3	Varenicline is not mentioned in the document. Perhaps the basis for the McClure et al (2009) trial analysis was not evident to me for KQs 1-4, but the data on adverse effects seem highly relevant to Key Question 5 and use of varenicline for patients with MH diagnoses is of high interest within VHA, including recently revised criteria for use that emphasize psychiatric stability.	We did not exclude trials that used varenicline. No trials using varenicline met our eligibility criteria. Therefore, it is beyond the scope of this report to discuss adverse effects for therapies not included in included trials. We, however, now briefly discuss use of varenicline for veteran with mental health issues in the discussion section.
	The report should be more explicit in distinguishing history of depression from current depression that met diagnostic criteria and from current depression symptoms based on exceeding assessment thresholds. The identified language convention in p 23 line 11-13 does not seem to be applied consistently and it combines current depressive symptoms with current depression diagnosis. Similarly, on P 3 line 21 – among 3 studies that recruited participants with current depression, did some require that participants meet diagnostic criteria and others use assessments in the absence of diagnoses? Other statements to clarify history vs. current vs. either are p 25 line 7; p 29 line 23, p 30 line 6, p 30 line 11, p 31 line 20, p 40 line 14, Table 10 footnote b. Consider adding a footnote to Table 3 to designate the distinct meanings of current depression.	The reviewer is correct that we combined current and history-positive studies. As outlined in our research questions, we assessed the comparative effectiveness of smoking cessation strategies of patients with a history of a depressive disorder or current significant depressive symptoms. We, however, planned a priori to conduct subgroup analyses by depression status but were unable to do so due to low number of studies per comparison. We note this as a limitation of our study We state the method of depression assessment for the three studies that recruited participants with current depression or elevated depressive symptoms on page 23 lines 9-12. We have clarified footnote b of table 10.
	Regarding Key Question 2, the dimension at issue appears to be recency (i.e., history vs. current) or "type" (p 42 lines 19-20). Severity per se can vary widely among those classified as currently depressed, but this was not reflected in analyses.	For Key Question 2, we were interested in depression status at time entering trial. This could be operationalized as type or symptom severity at study entry. No studies conducted subgroup or interaction effects based on symptom severity at study entry. Therefore, we only reported on two studies that identified results based on depression type. For Key Question 2, we clarify that we were interested in depression status at study entry throughout the revised report. We intended to conduct subgroup analysis by depression status but number of studies was too few.
	RR is a conventional way to report trial outcomes, however to increase clinical relevance of effect sizes it would be helpful to report NNT or to advocate that this be included in future reports. For the Discussion, consider quantifying effects with NNT where possible (e.g., p 40 line 11).	According to the Cochrane Handbook, NNT cannot be combined for a summary estimate in meta-analysis. We, therefore use RR for our analyses. We, however, have computed a NNT for our significant summary effect for the addition of mood management treatments.
	As noted in the Discussion, most subgroup analyses warrant cautious interpretation. A recent reference at p 43 line 11 would help to emphasize that point (e.g., Sun X, Briel M, Walter SD, Guyatt GH. Is a subgroup effect believable? Updating criteria to evaluate the credibility of subgroup analyses. BMJ. 2010 Mar 30;340 doi: 10.1136/bmj.c117). It would also be useful to identify subgroup analyses reported in the selected studies as a priori or post hoc (e.g., p 5 line 20).	Thank you for the citation. We have added this to the report. Also studies did not state that subgroup analyses were conducted a priori and, thus, powered to detect interaction effects. We noted this as a limitation.

Reviewer	Comment	Response
3	Most of the studies excluded patients with current/recent substance use or substance use disorders. Given the high comorbidity of alcohol and other substance use disorders with smoking and depression, this is a limitation to generalizability worth noting.	We have added this as a limitation.
	There is evidence in the broader literature about the role of combination pharmacotherapy (e.g., combination NRT; see Shah SD, Wilken LA, Winkler SR, Lin SJ. Review and meta-analysis of combination therapy for smoking cessation. J Am Pharm Assoc (2003). 2008 Sep-Oct;48(5):659-65.) and this has resulted in guidance through VA Pharmacy Benefits (PBM-MAP Recommendations for Use of Combination Therapy in Tobacco Use Cessation; http://www.pbm.va.gov or http://vaww.pbm.va.gov) . This is an important area for future research on those with depression and is worth identifying in the Discussion and considering for the Executive Summary on p 7. This could also be cited on p 10 line 3 in the context of individual forms of NRT. P 39 line 20 should specify that the 4 trials involved single forms of NRT and none involved combinations. P 41 para 2 and p 46 last full sentence are other locations to raise this point.	We agree and stated this in our discussion of future research in and in the executive summary that combination therapies are an important area of future study. We have expanded this section and added VA PBM-specific information per the reviewer's suggestion. We also have clarified that the NRT trials are single-form NRT trials.
	KQ4 has high clinical relevance. Despite the absence of systematic analyses that address this issue, it would be useful to comment on whether/how current depression was addressed (e.g., with concurrent anti-depressants or psychotherapy) other than in conditions that involved mood management or bupropion, etc. , and whether any anti-depressant doses were in the therapeutic range for treatment of depression (e.g., p 40 para 3). It seems important to comment on whether the evidence better addresses effects of smoking cessation in the context of treatment resistant depression or untreated depression (e.g., p 41 para 2 or p 42 para 2). The guidance on p 44 para 2 seems to suggest that behavioral mood management and NRT are adequate in the context of unresolved/untreated depression rather than encouraging concurrent patient engagement in guideline concordant care to address the depression. Note the contrast with the example on p 46 para 2 and p 47 first full sentence.	All but a few studies included in this report excluded MDD positive patients. Most patients included in this report could only be categorized as symptom positive, with no information on treatment resistance in the original papers. Therefore, we cannot comment on the effects of these smoking cessation strategies on patients with treatment resistant depression. Also we have clarified that we refer to the effects of antidepressants on smoking cessation. We were able to assess that antidepressant doses were in the therapeutic range. We have added this level of detail to the report.
	As noted on p 47, differential effects of mode of therapy could not be answered with available data. Since the issue of group vs. individual behavioral interventions has high relevance to implementation feasibility, it seems worth noting in regard to the heterogeneity of treatment categories (p 42 line 8). Uncertainty about advantages of individual vs. group modality for mood management (p 44 line 11) also would be useful to clarify.	We have added this clarification.
	Table 3 – recheck sample description for Duffy; p 63 indicated 69% with current depression?	Our numbers are correct. In Duffy et al., 69% of the total sample had depression but only 35% (n = 64) had comorbid depression and smoking at baseline.
4	In general, this report is thorough, well-written and objective. The reader gains a great deal of knowledge from the review of studies. Several specific comments are provided below. With the exception of the comment about exclusion of studies relating to Figure 2 on page 20, most of these comments are relatively trivial, but attention to them may slightly strengthen the review.	Thank you.

Reviewer	Comment	Response
4	On page 10, line 20, the meaning of the following sentence is a bit opaque. This sentence could perhaps be eliminated or rewritten: "Yet the extent to which level of depressive symptoms affects smoking cessation efforts has not yet been synthesized."	We agree and have deleted this sentence.
	On page 10, line 23 (going onto page 11), the sentence, "Treating depression first may lead to greater treatment adherence and, consequently, better cessation rates" while having face validity, represents speculation, and that point should be made clear here.	We agree and have clarified that this is plausible but not yet known.
	On page 11, line 2, likewise the sentence, "Smokers with psychiatric comorbidities may benefit from combined behavioral counseling and 3 pharmacotherapy with longer therapeutic smoking cessation approaches (i.e., exceeding 8 to 12 4 weeks) to reduce likelihood of dropout and depression relapse" while a reasonable supposition actually poses a hypothesis to be examined, but the language here does not make that point entirely clear.	The original language does not state this as a known. Our language states that these approaches *may* be beneficial. We then state that this needs to be studied.
	Page 14, line 10, Table 1: The exclusion for relapse prevention as an outcome is not entirely graspable. Does it mean that studies which randomized participants who had already quit and evaluated relapse as an outcome were excluded? If so, try to make this point clearer perhaps via an additional footnote.	We have added a footnote that defines relapse prevention.
	Page 20, Figure 2: 6 studies were excluded because the "Main outcome not reported at desired interval." However, the report gives no justification for the outcome intervals selected (self-reported 7 day abstinence at 6-12 months or [secondarily] abstinence at 3-4 months.) Considering that only 16 RCTs were ultimately included in the analysis, there must be more justification for the exclusion of 6 potential studies simply on the basis of outcome interval when we really do not know the optimal interval for testing abstinence that might predict long term quitting.	We have further clarified outcome measures in the methods section. Operationalization of smoking cessation was informed by those used in Cochrane reviews of smoking cessation which is based on the Russel Standard (West R, Hajek P, Stead L, Stapleton J. Outcome criteria in smoking cessation trials: proposal for a common standard. *Addiction* 2005;100(3):299-303). Also, the six excluded studies reported outcomes at end of treatment. End of treatment is not likely to be a good indicator of long-term smoking cessation.
	Page 24, line 11, "antidepressants" should be singular "antidepressant."	We have made this change.
	Page 24, lines 15-16, oral naltrexone should not be called "long acting." The parent drug has an average half-life of 4 hours, the active metabolite an average half-life of 12 hours. The way it is described here, it could be confused with the long acting injectable naltrexone which has therapeutic effects lasting 28 days.	The original paper refers to the naltrexone used in the study as "long acting." We have clarified that the trial used the pill form of naltrexone.
	Page 27, line 22, Table 6, second and third columns, second row, change "approached" to "approach."	We have made this change.

Reviewer	Comment	Response
4	Page 30, line 4, consider rewording the sentence, "Overall, we did not find enough evidence to support adding antidepressants to other smoking cessation cotreatments for persons with depression." Most of the studies looked at participants with prior histories of depression. If the patient has current depression and is trying to quit, most likely we would want her/him on an antidepressant for its effects on depression regardless of its lack of effect for smoking cessation. The wording as is could leave the impression that these patients should not be on antidepressants at all.	Our primary outcome of interest was smoking cessation. Therefore, we were interested if adding antidepressants to smoking cessation cotreatments improves smoking cessation outcomes. It is an empirical question if persons with current depression undergoing a quit attempt receive relief from their depression with antidepressants therapy alone versus psychotherapy or combination psychotherapy and pharmacotherapy for depression. We, however, have reworded the sentence so that it is clear we are referring to antidepressant effects on smoking cessation alone.
	Page 35, line 7, rewrite sentence, "Participants were randomized to 12 weeks of bupropion plus a cotreatment consisting of 8 weeks of transdermal NRT and 13 sessions of group CBT smoking cessation counseling or cotreatment plus placebo." One potential suggestion is: "Participants were randomized to 12 weeks of bupropion vs. placebo. Both groups received a cotreatment consisting of 8 weeks of transdermal NRT and 13 sessions of group CBT smoking cessation counseling.	We have changed the wording per the reviewer's suggestion.
	Page 35, line 9 creates some confusion by saying "Among participants who were history positive for unipolar depression . . ." Whereas, earlier on line 6, the text indicates that "Evins (2008) recruited 199 smokers who were history positive for unipolar depressive disorders." The text in line 9 makes it sound like all subjects were not history positive, but line 6 indicates that they were. It appears that the entire paragraph beginning on line 6 needs reworking.	We have revised the paragraph in order to better explain that Evins (2008) recruited participants with lifetime histories of unipolar depression but then assessed cessation rates by current versus history-positive groups.
	Page 36, lines 2-8, the differences in n's between men and women and the overall small sample size really preclude drawing any conclusions from these data. Please either supply the quit rates for men or comment that the small samples sizes render the study very inconclusive. A general caveat about this type of finding which occurs in other areas of the review appears on page 43, lines 5-11, but it also may be helpful to include such caveats in the specific areas of the report they pertain to. This strategy introduces redundancy but may aid clarity.	We agree with the reviewer that the small number of participants limits our ability to draw any conclusion. We state this as a global limitation of many of our findings. The study did not report quit rates for men beyond end of treatment assessments.
	Page 38, Table 10, if possible it would be good add a column listing the interventions. The interventions are listed in other tables, but it is difficult for the reader to flip back and forth. The clinical meaning of the adverse events is not too apparent if the reader is unsure of the intervention possibly related to the adverse events.	We have added a column describing the interventions.
	Page 40, lines 1-4, the wording here could give the reader the impression that the interventions mentioned are inefficacious, when, in fact, they have been insufficiently studied. An attempt to make that clear via the final clause in the paragraph does not quite get there. This point should be explicitly stated.	We have clarified that these are understudied strategies that need further examination.
	Page 40, line 6, the sentence, "Smokers with depression are more likely to have increased levels of negative precessation and postcessation" is poorly phrased. How about, "Smokers with depression are more likely to have increased levels of negative mood both pre- and post-cessation."	We have made this word change.

Reviewer	Comment	Response
4	Page 41, line 13, remove word "elevated."	We removed this word.
	Page 44, line 19, the sentence, "Smokers with depression can make and maintain smoking cessation" is a little awkward and would benefit from rewording.	We have reworded this sentence.
5	Overall, I found the report extremely clear and well-written. I learned a lot from the content, particularly how seldom this important topic has been adequately studied.	Thank you.
	Page 7, lines 11-14 – Which category would varenicline fit into? Also, I think it matters whether the antidepressant being studied is bupropion or nortriptylline (both endorsed by the PHS guidelines) vs. the other antidepressants. On the other hand, none of the antidepressant studies really showed much, so maybe it is not necessary to separate them out.	We had insufficient number of trials to assess antidepressant effects by specific drug. We state this as a limitation.
	Page 38 – I would change the heading for Column 2 in Table 10 to "…%reported in intervention versus control)". The way it reads now, it appears that the control group was much more likely to experience many adverse effects, particularly in Hall, 1998. It was only after a few minutes that I noticed footnote c indicating that the intervention group experienced more. So, I would keep the footnote but also have the order in the column heading consistent with the order reported in each row.	We agree and have made this change.
6	Page 23: It would be informative to have details of the disaggregated quality criteria scores for the included trials. As provided, I am not able to judge how trials scoring "fair" differed from those scoring "good". This would be best within the main body, but could be included in an appendix. Without these details, the transparency of the review is compromised, and the leap to GRADE in table 11 not clear.	We followed guidance in the EPC CER methods manual to report summary quality scores.
	Funnel plots are uninformative and unhelpful when there are small numbers of trials. In addition, the review has excluded any trials not published in peer reviewed journals, making the rationale for funnel plots questionable. Thus, appendix D would be better removed.	We agree. The funnel plots were presented in the draft review for completeness but have been removed from the final review
	In forest plot figures, displaying the outcome number (eg figure 3, 1.2.1) is confusing to the reader. These should be removed from the plots.	This has been corrected.
	In forest plots with only 1 stratum of trials, please remove the bottom summary estimate – it merely duplicates the stratum summary estimate, complicates the plots and potentially confuses readers (eg figure 3 – remove "total" – it is same as "subtotal" estimate)	This has been corrected.
	In forest plots, it is helpful to order trials by the weight they contribute to the meta analysis – thus making in easier to see which trial contributes most to the summary estimate of effect, and also which are likely to be responsible for any heterogeneity.	We have made this change.
	Consistency of style and content among tables: table 9 page 34 includes a column marked "rating", with no further explanation. Presumably this reflects methodological quality? Similar tables preceding and following do not contain this column.	We have deleted this column.
	The evidence tables page 57 onwards are enormous and somewhat unwieldy. It is hard to see where one trial stops and another starts. Could these be reorganised so there is clearer delineation among trials? Certainly start each new trial at the top of a page, even separate table for each trial?	We have disaggregated the evidence tables. Each table starts on a new page.

APPENDIX C: EVIDENCE TABLES

Comparative Effectiveness of Smoking Cessation Treatments for Patients With Depression

Study ID: Brown, Kahler, Niaura, et al., 2001

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: Providence, RI **Recruitment:** Advertisement; newspaper **Setting:** - Mixed - Academic **Veterans clinics:** No **Study design:** RCT **Number of participants enrolled:** 179 **Duration of follow-up:** End of treatment, 1, 6, 12 mo follow-up **Methods of assessment** **Smoking status:** 7 day point previous CO monitor **Depression status:** BDI POMS	**Intervention description:** Standard CBT for smoking cessation (ST) vs ST + CBT for depression (CBT-D) ST = 93 CBT = 86 Patients randomized to treatment condition according to gender, current depressive symptoms (BDI = 9), and level of nicotine dependence **Smoking cessation intervention:** Behavioral interventions Eight 2-hr group CBT sessions in 6 wk (2 sessions clustered around quit date) colead by two therapists (clinical psychologist postdoctoral fellows, interns in clinical psychologist, clinical psychologists) Key components of smoking cessation therapy included treatment rationale, self-monitoring, self-management, nicotine fading, relapse prevention, social support Drugs: None **Depression intervention:** Behavioral interventions Eight 2-hour group CBT sessions in 6 wk (2 sessions clustered around quit date) colead by two therapists (clinical psych post-doctoral fellows, interns in clinical psych, clinical psychologists) **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions Eight 2-hour group smoking cessation only CBT sessions in 6 wk (2 sessions clustered around quit date) colead by two therapists (clinical psych postdoctoral fellows, interns in clinical psych, clinical psychologists) Drugs**:** None **Depression intervention:** None **Mean contact time/proportion of sessions completed:** Sessions attended out of 8 possible: - Control 5.8 of 8 = 72.5% - Intervention 5.9 of 8 = 73.7% **Treatment sequencing:** Not done	**Inclusion criteria:** - Ages 18 to 70 - Smoked for at least 1 yr (10 cigarettes/day) - History of MDD **Exclusion criteria:** - Current depression - Substance use - Current weekly psychotherapy - Use of other tobacco products - Intent to use pharmacological aid for cessation - Psychotropic therapy **Age:** Mean (SD): 45.1 (9.27) **Gender (n [%]):** Female 107 (59.8%) **Race/ethnicity (n [%]):** White 174 (97.2%) **Baseline depression assessment:** - SCID - BDI (cutoff ≥ 9) - Mean (SD) = 7.8 (6.31) **Smoking characteristics:** - FTND = 6.8 (1.93) - Saliva cotinine = 383.7 ng/ml (170.59) **Comorbid conditions (n [%]):** - History of alcohol abuse 78 (43.6%) - History of drug abuse 60 (35.8%)	**Follow-up rate:** 6 mo = 91% 12 mo = 92% **Important baseline differences:** None **Outcomes of interest** **1) Abstinence rate:** 6 mo 12 mo ST 24.7 24.7 CBT 24.4 32.5 **2) Medication adherence rate:** NR **3) Differential effects by gender:** NA **4) Differential effects by depression status:** NA **5) Differential effects by treatment sequencing:** NA **Report adverse effects?** No	**General comments:** None **Applicability cautions:** None **Study-level quality assessment:** Good **Measure of smoking adequate?** Yes **Assessment of adverse effects adequate?** No

Study ID: Covey, Glassman, and Stetner, 1999

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: New York, NY **Recruitment:** Advertisement **Setting:** - Mental health clinic - Academic **Veterans clinics:** No **Study design:** RCT **Number of participants enrolled:** 80 randomized 68 completed 52 data at 6 mo follow-up **Duration of follow-up:** 6 mo phone follow-up post end of 1 mo treatment **Methods of assessment** **Smoking status:** - 7 day abstinence self-report - Blood cotinine concentration < 15 ng/ml **Depression status:** Score for Schedule for Affective Disorders indicating depression– NR	**Intervention description:** Study compared the added effectiveness of naltrexone to behavioral counseling (6 sessions) vs placebo treatment Behavioral counseling + Naltrexone (n = 40) vs behavioral counseling + placebo (n = 40) **Smoking cessation intervention:** Behavioral interventions 6 individual sessions based on the American Lung Association smoking cessation program (modified) conducted by trained therapist Topics consisted of fading, target quit date and coping skills for cravings and withdrawal symptoms Sessions held 3 and 5 days prior to quit date, then weekly x 1 mo Drugs Naltrexone, 25 mg/day 3 to 5 days prior to quit, increased to 50 mg/day on quit date, then increased to 75 mg/day if tolerated x 1 mo **Depression intervention:** None in addition to behavioral intervention **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions Same 6 sessions as described above Drugs Placebo, 25, 50, then 75 mg/day x 1 mo **Depression intervention:** None, as above **Mean contact time/proportion of sessions completed:** 27 of 40 (67.5%) subjects in both arms completed the treatment; number of sessions attended NR **Treatment sequencing:** NA	**Inclusion criteria:** - Ages 18 to 65 - Smoked ≥ 20 cigarettes/day - Smoked before leaving house when awakened - Made at least 1 attempt to quit in the past **Exclusion criteria:** - Current or history of psychiatric disorder other than MDD; not clearly specified - Current major medical illness - Current MDD, substance abuse or psychotic disorder excluded **Age:** Mean (SD): NR for whole sample Range 18 to 65 **Gender (n [%]):** N (65) NR for entire sample Female Naltrexone 20.4 of 30 (68%) Placebo 22.8 of 38 (60%) **Race/ethnicity (n [%]):** NR **Baseline depression assessment:** - Schedule for Affective Disorders, Lifetime version - History of depression Naltrexone 12.5 of 30, (42%) Placebo 20 of 38 (53%) **Smoking characteristics:** Mean (SD): Self-report usage: - Naltrexone 34.3 (11.9) cigarettes/day - Placebo 30.3 (10.1) cigarettes/day Cotinine level: - Naltrexone: 262 (130) ng/ml - Placebo: 271 (110) ng/ml **Comorbid conditions (n [%]):** History of major depression: - Total 37 of 68 (55%) - Naltrexone 12.6 of 30 (42%) - Placebo 20 of 38 (53%)	**Follow-up rate:** NR **Important baseline differences:** Age p < .004 Naltrexone 39.7 (8.0) yr Placebo 33.8 (8.2) yr Naltrexone: 75% (30 of 40) patients started study, 25% dropped out prior to quit date Placebo: 95% (38 of 40) patients started study, 5% dropped out prior to quit date **Outcomes of interest** 3 mo NR for entire population 6 mo quit rate (n, %,OR, p) Naltrexone 30 (26.7) 1.9 ns Placebo 36 (15.2) **1) Abstinence rate:** End of treatment (4 wk) Naltrexone 14 of 30 (46.7%) Placebo 10 of 38 (26.3%) OR 2.5, ns **2) Medication adherence rate:** NR **3) Differential effects by gender:** End of treatment (4 wk) OR Women (44) 3.5 Men (22) 1.4 6 mo quit rate: Nal Pla OR p Women 27.8 7.4 4.6 .07	**General comments:** Differential dropout prior to quit date: -Naltrexone 10 of 40 (25%) - Placebo 2 of 40 (5%) Then differential dropout during study in the opposite direction: - Naltrexone 3 of 30 (10%) - Placebo 11 of 38 (29%); reason given was that the pill was not helpful **Applicability cautions:** - Mean age < 40 - More than 60% female **Study-level quality assessment:** Fair Comments: - Poor description of exclusion criteria - Poor description of depression measure - Unequal dropout rate prior to quit date - No ITT analysis with 25% dropout rate in one arm but only 5% in other **Measure of smoking adequate?** Yes; cotinine **Assessment of adverse effects adequate?** Original study questionnaire

Study ID: Covey, Glassman, and Stetner, 1999

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
			4) Differential effects by depression status: 4 wk OR only present or absent given Negative (32) 0.8 Positive (36) 8.4 6 mo quit rate: Nal Pla OR Smokers 28.6 9.1 4.0 ns Within depressed (4 wk) Women (26) 4.4 Men (10) 2.7 6 mo quit rate: Nal Pla OR p Women 22.2 0.0 3.4 .04 **5) Differential effects by treatment sequencing:** NA **Report adverse effects?** Yes -11 naltrexone dropout - Minnesota Withdrawal Symptom Scale, 6 pt scale; side effects on original 3-point scale - List - Panic attack - Malaise - Sleeplessness - Lack of concentration - Nausea and vomiting - Disorientation - Tremors	

Study ID: Covey, Glassman, Stetner, et al., 2002

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: New York, NY **Recruitment:** Advertisement **Setting:** NR **Veterans clinics:** No **Study design:** RCT **Number of participants enrolled:** 66 placebo 68 sertraline **Duration of follow-up:** 34 week post-randomization **Methods of assessment** **Smoking status:** Self-report for 7 days and serum cotinine < 25 ng/ml **Depression status:** 6 point unvalidated scale	**Intervention description:** 9-week double-blind trial of sertraline titrated to 200 mg daily (n = 68) vs placebo (n = 66) following 1 wk placebo run-in; both arms received behavioral intervention **Smoking cessation intervention:** Behavioral interventions Weekly 45-minute individual behavioral session that included standard smoking cessation techniques (orientation to health risk, benefits of cessation, coping skills for withdrawal symptoms and avoiding relapse) Drugs Sertraline 50 mg daily wk 1 100 mg daily wk 2 150 mg daily wk 3 200 mg daily wk 4-9 9 day medication taper **Depression intervention:** Behavioral interventions Smoking cessation intervention augmented with a supportive approach to manage negative affect **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions Same as intervention Drugs: Placebo **Depression intervention:** Behavioral interventions Same as intervention **Mean contact time/proportion of sessions completed:** 9 visits during 12 wk intervention, each lasting about 45 min **Treatment sequencing:** NA	**Inclusion criteria:** - ≥ 1 MDE that remitted ≥ 6 mo prior to study - Ages 18 to 70 - ≥ 20 cigarettes/day x ≥ 1 yr - ≥ Prior quit attempt - Decreased cigarettes by ≥ 50% on quit date **Exclusion criteria:** - Serious medical illness - Psychotropic medication - MDD - Alcohol or drug dependence - PTSD, panic disorder, bulimia, anorexia nervosa within past 6 mo - Other lifetime major Axis I disorders - Pregnancy **Age:** Mean (SD): 44.5 (10.7) **Gender (n [%]):** Female 85 (63.4%) **Race/ethnicity (n [%]):** White 117 (87.3%) **Baseline depression assessment:** BDI-21 8.0 (7.7) CES-D 14.9 (10.8) HDRS 4.8 (4.4) **Smoking characteristics: *** - Yr smoking: 25.4 (10.5), 26.6 (10.8) - Cigarettes/day: 29.6 (11.5), 26.9 (9.0) - FTND: 7.1 (2.4), 6.1 (2.4) * = Placebo, intervention **Comorbid conditions:** NR	**Follow-up rate:** 100 of 134 (74.6%) at quit date; NR for intervention period **Important baseline differences:** FTND lower for intervention group: 6.1 (2.4) vs 7.1 (2.4) **Outcomes of interest** **1) Abstinence rate:** Post-quit day (randomization) Wk 6 (10): 19 of 66 (28.8%) placebo vs 23 of 68 (33.8%) intervention Wk 30 (34): 11 of 66 (16.7%) placebo vs 8 of 68 (11.8%) When analysis was limited to the 100 subjects enrolled until quit date, there were no statistically significant differences in abstinence rates **2) Medication adherence rate:** NR **3) Differential effects by gender:** NR **4) Differential effects by depression status:** No interaction effect for treatment by single vs recurrent depression or baseline depression status **5) Differential effects by treatment sequencing:** NA **Report adverse effects?** Yes -Dizziness, agitation, spaciness, diarrhea - 7 placebo, 4 intervention dropped out by wk 4 due to AE	**General comments:** Table 2 gives AE rates but suspect scale **Applicability cautions:** No concerns **Study-level quality assessment:** Good **Measure of smoking adequate?** Yes **Assessment of adverse effects adequate?** No

Study ID: Duffy, Ronis, Valenstein, et al., 2006

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: - University of Michigan, VAMC, Ann Arbor, MI - VAMC, Dallas, TX - VAMC, Gainesville, FL **Recruitment:** Clinic waiting room at study sites **Setting:** - Primary care - Academic and nonacademic, mixed **Veterans clinics:** Yes **Study design:** RCT **Number of participants enrolled:** 184 enrolled 91 usual care 93 intervention **Duration of follow-up:** 6 mo from end of intervention **Methods of assessment** **Smoking status:** - Self-report - Abstinent at least 1 mo to be "quitter," reported at 6 mo follow-up - No biochemical measure **Depression status:** NR	**Intervention description:** Combined smoking, depression, alcohol abuse telephone counseling (n = 93) vs enhanced usual care of brief counseling and referral to appropriate services for substance use/abuse and/or depression (n = 91) All participants were nonterminal head and neck cancer patients **Smoking cessation intervention:** Behavioral interventions 45 min baseline assessment and brief counseling with RN using semistructured instruments CBT, 9-11 sessions, planned telephone counseling and workbook Therapist was RN trained specifically for intervention Topics included tobacco tactics, drinking decisions, and mood management using goal setting, self-monitoring, analyzing behavioral antecedents, coping, and social skills training Drugs - Offered as needed - Nicotine replacement and/or bupropion **Depression intervention:** Behavioral interventions**:** None additional Drugs Offered antidepressants on individual basis (bupropion, paroxetine, fluoxetine, sertraline) **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions 45 min baseline assessment and brief counseling with RN using semistructured instruments Referred as needed to smoking cessation, alcohol treatment, or mental health evaluation according to insurance and ability to pay (options and time spent standardized) Handout listing all services available in area (e.g., Alcoholics Anonymous) Drugs Not specified as prescribed on individual basis **Depression intervention:** Behavioral interventions See above, dependent on individual referral Drugs: None specified **Mean contact time/proportion of sessions completed:** 77 of 93 (82.8%) completed all aspects of intervention **Treatment sequencing:** NA	**Inclusion criteria:** - Diagnosis head and neck cancer - Comorbid smoking, depression, or problem drinking - Older than age 18 - HDRS >20 or severe drinking **Exclusion criteria:** - Pregnant - Non-English - Terminal illness - Unstable psychiatric illness **Age:** 57 (9.9) **Gender (n [%]) :** Male 155 (84%) **Race/ethnicity (n [%]):** White 166, (90%) Other 18 (10%) **Baseline depression assessment:** Geriatric Depression Scale-short form; score > 4 at baseline and follow-up (69% of sample depressed) **Smoking characteristics:** Self report; 74% of sample **Comorbid conditions (n [%]):** - Depression 127 (69%) - Alcohol 52 (28%)	**Follow-up rate:** 84% at 6 mo for total population **Important baseline differences:** None **Outcomes of interest** - Quit rate at 6 mo for all smokers (n = 136) - Intervention, 35 of 74 (47%) - Usual care, 19 of 62 (31%) **1) Abstinence rate:** At 6 mo for those depressed at baseline (n = 64): Intervention 51% (18 of 35) Usual care 17% (5 of 29) **2) Medication adherence rate:** NR **3) Differential effects by gender:** NR **4) Differential effects by depression status:** NR **5) Differential effects by treatment sequencing:** Not done **Report adverse effects?** No **List**	**General comments:** This study tried to treat smoking, alcohol abuse, and depression concomitantly in a group of head and neck cancer survivors Only 64 participants had depression and also smoked at baseline Depression was mild to moderate and excluded those with HDRS > 20 Used Geriatric Depression Scale-short form > 4 to define depressed **Applicability cautions:** Good; 52% vets, correct age, male; all head and neck cancer patients **Study-level quality assessment:** Good **Measure of smoking adequate?** No; no biochemical validation of self-report status; self-report alone may underestimate current smokers **Assessment of adverse effects adequate?** No

Study ID: Evins, Culhane, Alpert, et al., 2008

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: Boston, MA **Recruitment:** - Advertisement - Referral **Setting:** - Mixed - Academic **Veterans clinics:** No **Study design:** RCT **Number of participants enrolled:** 199 **Duration of follow-up:** 13 wk **Methods of assessment** **Smoking status:** 7 day self-report CO validated ≤ ppm **Depression status:** HAM-D-6: > 4 high ≤ 4 low	**Intervention description:** Intervention = 97 Comparator = 102 Blocked randomization on level of nicotine dependence, failed history of treatment with NRT and/or CBT, current or past UDD 13 sessions of group CBT + 8 wk NRT + 12 wk bupropion SR vs 13 sessions of group CBT + 8 wk NRT + placebo **Smoking cessation intervention:** Behavioral interventions 13 wk of group CBT with groups up to 6 patients plus weekly visit with study psychiatrist (session 1 treatment rationale; session 2, cognitive behavioral suggestions for using NRT; sessions 3 to13, cognitive behavioral strategies of maintenance of abstinence) These CBT sessions did not address depression Drugs - Bupropion 12 wk (150 mg/day for 3 days and then 150 mg BID) - NRT 8 wk (21 mg patches for wk 2 to 6; 14 mg patches wk 7 and 8; 7 mg patches wk 9 and 10) **Depression intervention:** None **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions Same as above: 13 wk of group CBT with groups up to 6 patients plus weekly visit with study psychiatrist These CBT sessions did not address depression Drugs - NRT 8 wk (21 mg patches for wk 2 to 6; 14 mg patches wk 7 and 8; 7 mg patches wk 9 and 10) - Placebo 12 wk (same schedule as bupropion) **Depression intervention:** None **Mean contact time/proportion of sessions completed:** NR, but 50% dropped out **Treatment sequencing:** NA	**Inclusion criteria:** - Ages 18 to 70 - Smoked > 10 cigarettes/day for more than 2 yr - Lifetime diagnosis of UDD (so current and history of depression) - History of depression or current depression **Exclusion criteria:** - Substance use disorder - Other psychiatric disorders - Current use of nicotine-containing products, psychotropic medications, or behavioral smoking cessation treatment **Age:** Mean (SD): 43 (11) **Gender (n [%]):** Female 97 (49%) **Race/ethnicity (n [%]):** NA **Baseline depression assessment:** HAM-D-6 **Smoking characteristics:** - 7 day point prevalence - FNTD **Comorbid conditions (n [%]):** Lifetime anxiety 79 (40%)	**Follow-up rate:** 99 of 199 = 49.7% **Important baseline differences:** More men and fewer depression episodes in placebo arm **Outcomes of interest** **1) Abstinence rate:** At 13 wk post-baseline: 36% bupropion and 31% placebo using intent to treat analyses **2) Medication adherence rate:** NR **3) Differential effects by gender:** Not done **4) Differential effects by depression status:** Yes - Current UDD: 33% (15 of 45) bupropion vs 31% (14 of 45) in placebo were abstinent - History of UDD: 39% (20 of 52) bupropion vs 32% (18 of 57) in placebo were abstinent **5) Differential effects by treatment sequencing:** Not done **Report adverse effects?** No	**General comments:** None **Applicability cautions:** Very high dropout rate **Study-level quality assessment:** Good **Measure of smoking adequate?** Yes **Assessment of adverse effects adequate?** NA

Study ID: Hall, Munoz, and Reus, 1994

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: San Francisco, CA **Recruitment:** - Patients responding to "announcements" - Referred by physician or friend **Setting:** - Research clinic - Academic medical center **Veterans clinics:** No **Study design:** RCT **Number of participants enrolled:** 149 **Duration of follow-up:** 8, 12, 26, 52 wk **Methods of assessment** **Smoking status:** - Biologically verified self-report of 7-day abstinence from cigarettes: expired CO ≤10 ppm - At 52 wk CO measured and urinary cotinine ≤ 60 ng/ml **Depression status:** - BDI-II NR at follow-up - Profile of mood states reported	**Intervention description:** 5 sessions of small group smoking cessation treatment + 5 sessions of CBT mood management + nicotine gum vs 5 sessions of small group smoking cessation treatment + nicotine gum MDD history negative: Control n = 53 CBT n = 50 MDD history positive: Control n = 17 CBT n = 29 **Smoking cessation intervention:** Behavioral interventions Ten 2-hr sessions over 8 wk (2 x for first 2 wk) First 5 sessions were "standard" smoking treatment: information on smoking, gum use, quit plan Intervention was delivered by 1 MD from preventive medicine specialty and 1 PhD psychologist Drugs - NRT, 2 mg gum as needed for 8 wk - Taper at 9-12 wk - Mo 4-6 carry "shelf" gum for high-risk situations **Depression intervention:** Behavioral interventions 5 sessions of CBT focused on mood management: - Monitoring of thoughts, daily activities, interpersonal contacts and mood - Focus on increasing thoughts and activities related to healthy mood and to not smoking - Increasing pleasant activities - Increasing pleasant social contacts - Relation training - Identifying and modifying maladaptive thoughts - Setting realist life goals (manual available) **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions 5 sessions, 8 wk Small group; only support; leader did not condone any specific suggestions or offered any Drugs: Gum as above **Depression intervention:** None **Mean contact time/proportion of sessions completed:** NR **Treatment sequencing:** NA	**Inclusion criteria:** - 10+ cigarettes per day - Ages 18 to 65 **Exclusion criteria:** - Heart disease - Angina, vasospastic disease - Current or past peptic ulcer - Temporomandibular joint disease - Hypertension - Life-threatening illness - Alcohol or drug problems in past 6 mo - Current treatment for psychiatric problems - History of psychiatric hospitalization in past yr - Pregnant or nursing - Current MDD screened out **Age:** Mean (SD): 40.6 (9.2) **Gender (n [%]):** Men 71 (48%) Women 78 (52%) **Race/ethnicity (n [%]):** White 131 (88%) **Baseline depression assessment:** - DIS used to assess history of MDD, n = 46 (31%) history positive - BDI: History positive n = 6.39 (5.9) History negative n = 4.58 (4.6) **Smoking characteristics:** 24.9 (10.9) cigarettes/day 26.7 (13.9) CO level FTND tolerance scale 6.4 (1.9) Regular smoking yr 22.1 (9.5) **Comorbid conditions:** NR	**Follow-up rate:** NR; subjects with missing data were coded as smoking **Important baseline differences:** NR **Outcomes of interest** **1) Abstinence rate:** Wk 12 rates (from baseline) MDD history negative: Control 26 of 53 (49%) CBT 23 of 50 (46%) MDD history positive: Control 8 of 17 (47%) CBT 20 of 29 (69%) Wk 52 MDD history negative: Control 13 of 53 (25%) CBT 8 of 50 (16%) MDD history positive: Control 4 of 17 (24%) CBT 10 of 29 (34%) **2) Medication adherence rate:** NR **3) Differential effects by gender:** NR **4) Differential effects by depression status:** See above for unadjusted rates; the diagnosis x treatment group interaction was significant Among only those with MDD history positive, 10 of 29 (34%) vs 3 of 17 (18%) at 1 yr **5) Differential effects by treatment sequencing:** NA **Report adverse effects?** No	**General comments:** None **Applicability cautions:** - Current MDD or other psychiatric treatment excluded - Volunteer reactive sample **Study-level quality assessment:** Fair to poor Comments: - Randomization and allocation NR - Baseline characteristics by intervention NR - Follow-up rates NR - Adherence NR - Dropout NR **Measure of smoking adequate?** Yes **Assessment of adverse effects adequate?** NR

Study ID: Hall, Munoz, Reus, et al., 1996

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: San Francisco, CA **Recruitment:** Media, fliers, word of mouth **Setting:** - Research clinic - Academic medical center **Veterans clinics:** No **Study design:** RCT **Number of participants enrolled:** 207, but 201 analyzed; 6 excluded because of protocol violations (e.g., use of nicotine patch) **Duration of follow-up:** - 8 wk (treatment termination) - 12 wk post–treatment termination + 26 and 52 wk post–treatment termination **Methods of assessment** **Smoking status:** - Biologically verified self-report of 7-day abstinence from cigarettes: expired CO ≤ 10 ppm - At 52 wk CO measured and urinary cotinine ≤ 60 ng/ml **Depression status:** - BDI-II not related to MDD history - Profile of mood states higher at wk 2 post-quit with increase for MDD history positive	**Intervention description:** 2 (behavioral treatments) x 2 (gum vs placebo) factorial design; stratified by MDD history and cigarettes smoked Both behavioral arms 10-session group over 8 wk; quit date set for third group session; groups 5-12 patients (Cell sizes in 2 x 2 NR; n's below collapse across 1 treatment condition) MDD history negative: Health education (control) n = 74 CBT n = 83 Placebo gum n = 82 Active gum n = 75 MDD history positive: Control n = 23 CBT n = 21 Placebo gum n = 21 Active gum n = 23 **Smoking cessation intervention:** Behavioral interventions Ten 2-hr sessions based on Hall 1994 "Mood management" CBT focused as described in Hall 1994; "standard" smoking treatment: information on smoking, gum use, quit plan Intervention was delivered by weekly supervision from PhD psychologist including review of audiotapes Drugs - NRT: 2 mg gum at session 3 (quit date) for 8 wk - Chew at least 1 piece per hr for at least 12 hr/day during first 3 wk - Use prn wk 4-8 - Taper at 9-12 weeks - Mo 4-6 carry "shelf" gum for high-risk situations - By 6 mo abstinent from all NRT	**Inclusion criteria:** - 10+ cigarettes per day - Ages 18 to 65 **Exclusion criteria:** - Heart disease - Ulcers - Oral thrush - Current alcohol or drug problems - Hypertension - Pregnancy - Current mental health treatment - Use of psychoactive drugs - Physician letter indicating that patient is healthy - Current MDD excluded **Age:** Mean (SD): 39.7 (NR) Range: 22 to 65 **Gender (n [%]):** Women 105 (52%) Men 96 (48%) **Race/ethnicity (n [%]):** White 185 (92%) **Baseline depression assessment:** - DIS used to assess history of MDD; 22% of 201 history positive - BDI 6.71 (5.43) **Smoking characteristics:** - 23.8 (9.8) cigarettes/day - 27.2 (11.81) CO level - Regular smoking yr 21 (NR) **Comorbid conditions:** NR	**Follow-up rate:** NR; subjects with missing data were coded as smoking **Important baseline differences:** NR **Outcomes of interest** No effect for treatment gum dose, MDD history, or interaction **1) Abstinence rate:** Wk 12 rates (from baseline) MDD history negative: Control: 26 of 74 (35%) CBT: 29 of 83 (35%) Placebo gum: 28 of 82 (34%) Active gum: 27 of 75 (36%) MDD history positive: Control: 8 of 23 (35%) CBT: 10 of 21 (48%) Placebo gum: 11 of 21 (52%) Active gum: 7 of 23 (30%) Wk 52 MDD history negative: Control: 17 of 74 (23%) CBT: 23 of 83 (28%) Placebo gum: 21 of 82 (26%) Active gum: 19 of 75 (25%) MDD history positive: Control: 5 of 23 (22%) CBT: 7 of 21 (33%) Placebo gum: 7 of 21 (33%) Active gum: 5 of 23 (22%) **2) Medication adherence rate:** NR **3) Differential effects by gender:** NR **4) Differential effects by depression status:** See above for unadjusted rates; the diagnosis x treatment group interaction was not significant **5) Differential effects by treatment sequencing:** NA **Report adverse effects?** No	**General comments:** **Caution:** 2 x 2 factorial but data presented as if a 4-arm study, so each subject is double counted **Applicability cautions:** - Current MDD or other psychiatric treatment excluded - Volunteer reactive sample - Participants had to pay $75 deposit **Study-level quality assessment:** Fair Comments: - Randomization and allocation NR - Baseline characteristics by treatment group NR - Follow-up rates NR - Adherence NR - Dropout NR **Measure of smoking adequate?** Yes **Assessment of adverse effects adequate?** NR

Study ID: Hall, Munoz, Reus, et al., 1996

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
	Depression intervention: Behavioral interventions 5 of CBT focused on mood management: - Monitoring of thoughts, daily activities, interpersonal contacts and mood - Focus on increasing thoughts and activities related to healthy mood and to not smoking - Increasing pleasant activities - Increasing pleasant social contacts - Relation training - Identifying and modifying maladaptive thoughts - Setting realistic life goals (manual available) **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions Group health education "Standard" smoking treatment: information on smoking, gum use, quit plan developed and modified each week Group leader provided health information and facilitated group discussion Drugs As above **Depression intervention:** None **Mean contact time/proportion of sessions completed:** NR **Treatment sequencing:** NA			

Study ID: Hall, Reus, Munoz, et al., 1998

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: San Francisco, CA **Recruitment:** - Public service announcements - Newspaper ads **Setting:** - Research clinic - Academic medical center **Veterans clinics:** No **Study design:** RCT **Number of participants enrolled:** 199 **Duration of follow-up:** - 8 wk (treatment termination) - 12 weeks post–treatment termination plus 26 and 52 wk post–treatment termination **Methods of assessment** **Smoking status:** - Biologically verified self-report of 7-day abstinence from cigarettes: expired CO ≤10 ppm - Urinary cotinine ≤ 341 nmol/l **Depression status:** - BDI - Profile of mood states reported for only 8 days after quit	**Intervention description:** 2 (CBT vs health education) x 2 (nortriptyline vs placebo) Drug/CBT (n = 51) MDD history positive n = 17 (33.3%) Drug/health education (n = 48) MDD history positive n = 15 (31.3%) Placebo/CBT (n = 52) MDD history positive n = 17 (32.7%) Placebo/health education (n = 48) MDD history positive n = 16 (33.3) **Smoking cessation intervention:** Behavioral interventions Group "mood management" CBT as described in Hall 1994 Ten 2-hr group sessions over 8 wk Group size 5-11 patients CBT focused on mood management skills to manage dysphoria and maintain nonsmoking and included methods to increase the frequency of pleasant activities and decrease relapse-related thoughts and techniques for increasing positive social contacts, decreasing negative contacts, and improving relationships. Intervention delivered by 3 PhD psychologists Drugs Double blind; MD visits wk 1, 2, 3 Nortriptyline hydrochloride at therapeutic dose for depression; 25 mg/day for 3 days; increased to 50 mg/day for 4 days Serum assessed at wk 2 Dose increased to 75 mg/day if therapeutic level not attained; increased to 100 mg/day if necessary at wk 6 Modal dose 100 mg/day; maintenance to wk 12 Taper during wk 13 (whenever active drug was titrated; someone in placebo was titrated) **Depression intervention:** Behavioral interventions 5 sessions of CBT (smoking/mood management) as above	**Inclusion criteria:** - 10+ cigarettes per day - Ages 21 to 65 **Exclusion criteria:** - Heart disease or ECG abnormalities - "Other reasons" - Current mental health treatment - Use of psychoactive drugs - Current MDD - Alcohol or other non-nicotine drug use **Age:** Mean (SD): Drug + CBT 41.7 (9.4) Drug + health education: 40.7 (9.6) Placebo + CBT: 40.0 (9.9) Placebo + health education: 39.4 (9.7) **Gender (n [%]):** Women n = 110 (55%) Men n = 89 (45%) **Race/ethnicity (n [%]):** White 173 (89%) **Baseline depression assessment:** DIS used to assess history of MDD: MDD history positive n = 65 (32.7) BDI: MDD history positive n = 7.2 (5.6) MDD history negative n = 5.5 (2.2) **Smoking characteristics:** Range of mean (SD) for the 4 groups: - FTND 5.4 (2.2) to 5.2 (2.2) - Yr smoking 21.7 (10.0) to 23.0 (10.7) - Daily cigarettes 21.1 (7.6) to 24.9 (12.1) **Comorbid conditions:** NR	**Follow-up rate:** N = 47 (24%) dropped out of treatment No difference in psychological intervention or history of MDD in dropout rates but dropout higher in placebo drug (30%) vs active drug (17%) (or = 2.01; 1.05-4.06) **Important baseline differences:** None **Outcomes of interest** **1) Abstinence rate:** ITT analyses abstracted here: Wk 12 rates (from baseline) MDD history negative: Drug + CBT 56%, 19 of 34 Drug + health education 61%, 20 of 33 Placebo + CBT 20%,7 of 35 Placebo + health education 31%, 10 of 32 MDD history positive: Drug + CBT 47%, 8 of 17 Drug + health education 47%, 7 of 15 Placebo + CBT 41%,7 of 17 Placebo + health education 19%,3 of 16 Wk 64 MDD history negative: Drug + CBT 35%, 12 of 34 Drug + health education 36%, 12 of 33 Placebo + CBT 20%, 7 of 35 Placebo + health education 22%, 7 of 32 MDD history positive: Drug + CBT 24%, 4 of 17 Drug + health education 20%, 3 to 15 Placebo + CBT 29%, 5 of 17 Placebo + health education 13%, 2 of 16	**General comments:** Randomization stratified by depression status **Applicability cautions:** - Current MDD or other psychiatric treatment excluded - Volunteer reactive sample **Study-level quality assessment:** Good Comments: Adherence rate to behavioral treatment NR **Measure of smoking adequate?** Yes **Assessment of adverse effects adequate?** Yes

Study ID: Hall, Reus, Munoz, et al., 1998

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
	Comparator intervention(s) **Smoking cessation intervention:** Behavioral interventions Group health education Group leader provided health information and facilitated group discussion Development of quit plan; modified quit plan each week but only five 90-min sessions (5-11patients per group) over 8 wk. Methods included paper-and-pencil exercises, informational handouts, brief didactic presentations, homework assignments, and smoking monitoring Drugs: As above **Depression intervention:** Behavioral interventions: Drug as above **Mean contact time/proportion of sessions completed:** NR **Treatment sequencing:** NA		**2) Medication adherence rate:** Capsules did not differ by condition or drug (active vs placebo) **3) Differential effects by gender:** Gender by MDD history interaction significant; MDD history positive women had poorer abstinence rates than MDD history negative (or =2.05; 1.32-3.23) but not for MDD history positive men (p = 0.20) Women: Wk 12 MDD history positive 38% MDD history negative 53% Wk 64 MDD history positive 20% MDD history negative 37% Men: Wk 12 MDD history positive 61% MDD history negative 52% Wk 64 MDD history positive 37% MDD history negative 31% **4) Differential effects by depression status:** See above for unadjusted rates for main effect for drug; 24% vs 12% placebo achieved continuous abstinence The diagnosis (i.e., MDD history) by psychological treatment by drug interaction was not significant Behavioral treatment condition by MDD history was significant	

Study ID: Hall, Reus, Munoz, et al., 1998

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
			MDD history positive assigned to CBT did as well as MDD history negative MDD history positive assigned to control were less likely to be abstinent than those assigned to CBT Drug by diagnosis was not significant The diagnosis x treatment group interaction was not significant **5) Differential effects by treatment sequencing:** NA **Report adverse effects?** - Measured by checklist - Dry mouth 78% drug vs 33% or 7.0; 95% CI 3.73 to 13.17 - Lightheaded 49% vs 22% or 2.42 1.85-6.35 - Shaky hands 23% vs 11% or 2.42; 1.11-5.29 - Blurry vision 16% vs 6% 3.00; 1.12-7.99	

Study ID: Hall, Tsoh, Prochaska, et al., 2006

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: San Francisco, CA **Recruitment:** - Provider referral - Invitation letters to clinic patients - Flyers in clinics - Paid $150 **Setting:** - Mental health outpatient clinics - Academic and nonacademic **Veterans clinics:** No **Study design:** RCT **Number of participants enrolled:** 322 **Duration of follow-up:** 18 mo **Methods of assessment** **Smoking status:** - Biologically verified self-report of 7-day abstinence from cigarettes: expired CO ≤ 10 ppm - Interviewers blind to treatment group **Depression status:** BDI-II	**Intervention description:** Brief contact and referral control (n = 159) vs staged-care intervention (n = 163) **Smoking cessation intervention:** Behavioral interventions Computerized motivational feedback based on the stages of change model (15 min session given at baseline, 3, 6, and 12 mo Patients at contemplation stage were also offered counseling Cessation treatment program of CBT; six 30 min sessions of individual treatments over 8 wk offered by one of two therapists (MA-level psychologist or PhD psychologist) CBT consisted of quit plan that was iteratively revised, quite date, self-tests about reasons for smoking, information about risks/ benefits of quitting, information on nutrition and exercise, mood monitoring, discussion of ways to increase pleasant moods and decrease negative ones, use of behavioral skills to reduce relapse risk, and relation and social support skills. Drugs - NRT - If smoked 10+ cigarettes got 21 mg patch for 6 wk, 14 mg wk 7-8; 7 mg wk 9-10 - If failed NRT, could request bupropion (dose NR) **Depression intervention:** None **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions Brief contact; list of referrals to smoking cessation programs and stop smoking guide Drugs: None **Depression intervention:** None **Mean contact time/proportion of sessions completed:** NR **Treatment sequencing:** See above	**Inclusion criteria:** - Diagnosis of current depression based on PRIME MD - Smoked 1+ cigarettes/day in week prior to enrollment - Enrollment as a patient in one of four participating sites **Exclusion criteria:** - Under age 18 - Non-English speaking - History of bipolar - Contraindicated to use of pharmacological treatments - Dementia or other disorders interfering with comprehension of materials **Age:** Mean (SD): Control (n = 159) 42.2 (12.8) Staged care (n = 163) 41.5 (12.4) Median: NR Range: NR **Gender (n [%]):** Male 98 (30.4%) Female 224 (69.6%) **Race/ethnicity (n [%]):** White 220 (68.3%) **Baseline depression assessment:** PRIME-MD + to be enrolled BDI-II: Control 21.4 (10.9) Staged care 20.6 (11.7) DIS DSM-IV + MDD: Control 155 (97.5) Staged care 152 (93.3) Current MDD: Control 133 (83.7) Staged care 135 (82.8) Recurrent MDD: Control 89 (57.4) Staged care 79 (52.0)	**Follow-up rate:** 3 mo: Control (n = 129; 81%) Intervention (n = 138; 85%) 6 mo: Control (n = 120; 75%) Intervention (n = 125; 77%) 12 mo: Control (n = 112; 70%) Intervention (n = 113; 69%) 18 mo: Control (n = 110; 69%) Intervention (n = 122; 75%) **Important baseline differences:** Control had higher % of lifetime nicotine dependence: 74.7% vs 64.2% (not correlated with outcomes) **Outcomes of interest** **1) Abstinence rate** Rates based on ITT analyses (missing = smoker) Intervention: 3 mo: 22 of 163 (13.5%) 6 mo: 23 of 163 (14.11%) 12 mo: 23 of 163 (14.11%) 18 mo: 30 of 163 (18.4%) Control: 3 mo: 15 of 159 (9.43%) 6 mo: 25 of 159 (15.73%) 12 mo: 15 of 159 (9.43%) 18 mo: 21 of 159 (13.21%) Gee model: Main effect for treatment at 12 and 18 mo (completed only on responders) OR = 4.459 (95%) CI = 1.04 to 19.93 P = 0.0441 **2) Medication adherence rate:** NR	**General comments:** None **Applicability cautions:** - Patients recruited from large HMO - Patients did not need to have intention to quit to enroll **Study-level quality assessment:** Good **Measure of smoking adequate?** Yes **Assessment of adverse effects adequate?** NR

Study ID: Hall, Tsoh, Prochaska, et al., 2006

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
		Smoking characteristics: FTND: Control 4.2 (2.6) Staged care 3.8 (2.4) Number of cigarettes/day: Control 15.3 (10.3) Staged care 15.8 (10.0) CO at baseline: Control 15.2 (10.2) Staged care 15.5 (9.9) **Comorbid conditions:** NR	**3) Differential effects by gender:** NR **4) Differential effects by depression status:** - BDI-II not related to outcomes - Analyses conducted in only MDD (n = 307) with same pattern of results; results not shown **5) Differential effects by treatment sequencing:** NA **Report adverse effects?** No	

Study ID: Hayford, Patten, Rummans, et al., 1999

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: Three U.S. sites: Palo Alto, CA Rochester, MN Morgantown, WV **Recruitment:** Advertisement **Setting:** - Mental health, primary care, mixed - Academic and nonacademic **Veterans clinics:** No **Study design:** RCT, 4 arms **Number of participants enrolled:** 742 volunteers 615 eligible and randomized **Duration of follow-up:** 3 mo and 12 mo from baseline **Methods of assessment** **Smoking status:** Self-reported abstinence for 7 days verified by CO level ≤ 10 ppm **Depression status:** BDI-21 item	**Intervention description:** 100 mg bupropion + behavioral intervention (n = 153) vs 150 mg + behavioral intervention (n = 153) vs 300 mg + behavioral intervention n = 156) vs placebo (n = 153) **Smoking cessation intervention:** Behavioral interventions - Set target quit date after 1 wk of medication - Personalized message to stop smoking - Self-help materials based on NCI program - Brief in-person individual counseling (10-15 min) by study assistant at weekly visits x 7 wk, then at 8, 12, 26, and 52 wk - Telephoned 3 days after target quit date and at 4, 5, 7, 8, 9, 10, and 11 mo Drugs - Bupropion SR 50 mg BID - Bupropion SR 150 mg am + placebo pm - Bupropion SR 150 mg daily x 3 days, then 150 mg BID - All drugs given for 7 wk **Depression intervention:** None **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions Same as intervention groups Drugs Placebo BID for 7 wk, n = 153 **Depression intervention:** None **Mean contact time/proportion of sessions completed:** 467 of 615 (75%) completed 7 wk intervention **Treatment sequencing:** NA	**Inclusion criteria:** - Age ≥ 18 - Smoked ≥ 15 cigarettes/day for past yr - Motivated to stop smoking - Good general health **Exclusion criteria:** - History of head trauma, predisposition to seizures, anorexia nervosa, or bulimia - Current depression - Pregnancy - History of alcohol or substance abuse within past yr - Personal or family history of seizure disorder - Psychotropic medication use or NRT - Previous use of bupropion - Use of other tobacco products **Age:** Mean (SD): 42 to 43 Median: NR Range: NR **Gender (n [%]):** Female 336 (54.6%) **Race/ethnicity (n [%]):** White 591(96%) **Baseline depression assessment:** BDI-21, score range 0-63 Mean (SD) ranges from 4.1 (4.2) to 4.7 (5.0) SCID for lifetime MDD, total n = 114 **Smoking characteristics:** Mean (SD) cigarettes/day range from 26.2 (8.5) to 27.5 (9.6) Previous serious quit attempts range from 3.5 (3.4) to 4.3 (5.4) FTND range from 7.1 (1.7) to 7.3 (1.7) **Comorbid conditions (n [%]):** Lifetime alcohol dependence, n = 60	**Follow-up rate:** 396 of 615 (64%) completed 12 mo follow-up Completion varied by bupropion group: 57% (100 mg), 65% (150 mg), 64% (300 mg), 71% (placebo), p = 0.01 **Important baseline differences:** None between randomized groups; there were important differences between those with and without history of MDD or alcohol dependence (age, gender); however, mean changes in BDI scores did not significantly differ from zero for any group **Outcomes of interest** **1) Abstinence rate:** 3 and 12 mo rates (% of randomized) Placebo: 14.4%;12.4% 100 mg: 24.2%; 19.6% 150 mg: 26.1%; 22.9% 300 mg: 29.5%; 23.1% p = 0.01 at 3 mo; p = 0.06 at 12 mo for all 4 groups 150 mg and 300 mg doses statistically significant compared to placebo at all time points 12 mo rates for participants with history of MDD Placebo: 2 of 28 (7%) 100 mg: 4 of 28 (14%) 150 mg: 5 of 19 (26%) 300 mg: 4 of 20 (20%) 12 mo rates for participants with history of MDD and alcohol dependence Placebo: 1 of 3 (33%) 100 mg: 2 of 7 (28.6%) 150 mg: 4 of 7 (57%) 300 mg: 2 of 10 (20%)	**General comments:** Effect of dose was dependent on diagnosis group **Applicability cautions:** - Mean age < 45 - 96% white - 55% female **Study-level quality assessment:** Good Comments: - Allocation concealment not specified - Differential follow-up rate, if dropout, assumed to be smoking and would bias against intervention - Funded by Glaxo Wellcome and included industry investigator(s) **Measure of smoking adequate?** Yes **Assessment of adverse effects adequate?** Fair; measured depressive symptoms and weight change but little detail on other AE measures

Study ID: Hayford, Patten, Rummans, et al., 1999

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
			2) Medication adherence rate: NR **3) Differential effects by gender:** NR **4) Differential effects by depression status:** NR **5) Differential effects by treatment sequencing:** NA **Report adverse effects?** Yes Discontinued due to AE: Placebo: 8 (5%) 100 mg: 9 (6%) 150 mg: 7 (5%) 300 mg: 13 (8%) Headache, insomnia*, rhinitis, dry mouth*, and anxiety were most common (* = statistically significantly more) Other: Among those continuously abstinent (n = 103), there was a dose x time interaction (p = 0.04) showing less weight gain as bupropion dose increased	

Study ID: Kinnunen, Doherty, Militello, et al., 1996

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: Boston, MA **Recruitment:** Advertisement **Setting:** NR **Veterans clinics:** No **Study design:** Secondary analysis of RCT **Number of participants enrolled:** 269 (93 depressed; 176 nondepressed) **Duration of follow-up:** 3 mo post–quit date **Methods of assessment** **Smoking status:** - History and expired CO - Relapse defined as "reestablished a regular pattern of smoking"; defined as ≥ 7 consecutive days **Depression status:** CES-D score	**Intervention description:** Counseling + nicotine gum 2 mg vs counseling + nicotine gum 4 mg; combined gum (n = 178) vs counseling + placebo (n = 91) **Smoking cessation intervention:** Behavioral interventions One-time brief individual behavioral counseling: behavioral-cognitive procedures for coping with urges, cravings and withdrawal symptoms; help with individual concerns about quitting, such as weight gain; no further information given Drugs - Nicotine gum 2 mg ad lib; target usage of 9-15 pieces/day - Nicotine gum 4 mg ad lib; target usage of 9-15 pieces/day **Depression intervention:** None **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions Same as intervention group Drugs Matching placebo gum ad lib; target usage of 9-15 pieces/day Depression intervention: None Mean contact time/proportion of sessions completed: NR **Treatment sequencing:** NA	**Inclusion criteria:** - Smoked ≥ 5 cigarettes/day - Good health - Age ≥ 20 **Exclusion criteria:** NR **Age:** Mean (SD) Overall Depressed 40.4 (12.6) 41.6 (12.7) **Gender (n [%]):** Female Overall Depressed 145 (51%) 56 (61%) Race/ethnicity (n [%]): White Overall Depressed 221 (82%) 74 (80%) Black Overall Depressed 29 (11%) 11 (12%) Other Overall Depressed 19 (7%) 8 (8%) **Baseline depression assessment:** CES-D, 20 items, 0-60 **Smoking characteristics:** Mean cigarettes: 22 (10.4) Mean duration: 23.1 yr (4.0) FTND (depressed group): 5.6 (2.4) **Comorbid conditions:** NR	**Follow-up rate:** NR **Important baseline differences:** NR for intervention groups Depressed patients were more likely to be female, older, and unmarried than the nondepressed **Outcomes of interest** **1) Abstinence rate:** Depressed subgroup (n = 93) at 90 days post–quit date: - Placebo: 4 of 33 (12.5%) - Nicotine gum 2 mg and 4 mg groups: 17 of 59 (29.5%) **2) Medication adherence rate:** Recommended gum use: 9 to 15 pieces/day Average daily gum used for all groups at days 7, 30, 60, 90 was 8.1 pieces, 7.8 pieces, 6.2 pieces, 4.7 pieces, respectively **3) Differential effects by gender:** NR **4) Differential effects by depression status:** NR **5) Differential effects by treatment sequencing:** NA **Report adverse effects?** - 7 day change in CES-D scores - Placebo group (depressed): no significant change, Tukey p = 0.99 - Nicotine group (depressed): lower scores, Tukey p = 0.00003	**General comments:** None **Applicability cautions:** - Mean age 40 - > 50% female - > 80% white **Study-level quality assessment:** Good **Measure of smoking adequate?** Atypical definition; less stringent than other studies **Assessment of adverse effects adequate?** No; only assessed 7 day change in CES-D scores

Study ID: Kinnunen, Korhonen, and Garvey, 2008

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: Boston, MA **Recruitment:** Advertisement **Setting:** - Clinic type NR - Academic (university hospital) **Veterans clinics:** No **Study design:** RCT **Number of participants enrolled:** Total n = 608 Depressed = 196 Nondepressed = 412 **Duration of follow-up:** 3, 6, 9, and 12 mo post–quit date **Methods of assessment** **Smoking status:** Self report 7-day point prevalence validated by CO monitor **Depression status:** CES-D score	**Intervention description:** - Nicotine gum, 2-4 mg (collapsed) (n = 405) - Placebo gum (n = 203) **Smoking cessation intervention:** Behavioral interventions Individual brief (5-10 min) counseling at each in-person visit (1, 7, 14, 30, 60, 90, 180, 270, and 365 days post–quit date) Booklet "Clearing the Air" on how to stop smoking was provided Drugs NRT gum, 2 or 4 mg; groups collapsed across arms as parent study showed no difference in outcome between groups **Depression intervention:** None **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions Individual brief (5-10 mi) counseling at each in-person visit Booklet "Clearing the Air" on how to stop smoking was provided Drugs Placebo gum **Depression intervention:** None **Mean contact time/proportion of sessions completed:** NR **Treatment sequencing:** NA	**Inclusion criteria:** - Age ≥ 20 - Good health - Smoke ≥ 5 cigarettes/day **Exclusion criteria:** - Serious medical condition - Use of psychiatric medications **Age:** Mean (SD) - NR for whole population - Depressed 38.5 (11.3) - Nondepressed 41.9 (12.0) **Gender (n [%]):** Female 312 (51%) Depressed female 110 (56.1%) Nondepressed female 202 (49%) **Race/ethnicity (n [%]):** Depressed Nondepressed White 154 (78.6%) 338 (82%) Black 28 (14.3%) 51(12.4%) Other 14(7.1%) 23 (5.6%) **Baseline depression assessment:** CES-D, range 0-60; ≥ 16 classified as depressed; 32% depressed at baseline No information on history of depression or substance abuse **Smoking characteristics:** - Expired CO > 8 ppm - Number of cigarettes/day - FTND **Comorbid conditions (n [%]):** Depression 195 (32%)	**Follow-up rate:** NR; 3 withdrew for adverse effects **Important baseline differences:** Depressed group was younger, single, and had less education; P < 0.05 **Outcomes of interest** **1) Abstinence rate:** - At 3 mo: In figure, but numbers not given; would have to extrapolate numbers - At 12 mo: Nondepressed with NRT = 58 of 279 (20.1%) Nondepressed placebo = 20 of 133 (15.1%) Depressed with NRT = 12 of 126 (9.8%) Depressed with placebo = 4/70 (5.7%) **2) Medication adherence rate:** NR **3) Differential effects by gender:** NR, but effect of depression no longer significant when adjusted for differences in marital status and education **4) Differential effects by depression status:** NR **5) Differential effects by treatment sequencing:** NR **Report adverse effects?** Yes 3 questionable reactions to NRT gum	**General comments:** Supplemented information using Garvey 2000 **Applicability cautions:** - Majority female - 80% White **Study-level quality assessment:** Good **Measure of smoking adequate?** Yes **Assessment of adverse effects adequate?** Yes

Study ID: MacPherson, Tull, Matusiewicz, et al., 2010

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: NR; multicenter? **Recruitment:** Advertisement **Setting:** - Mental health, primary care, mixed - Academic and nonacademic **Veterans clinics:** No **Study design:** RCT **Number of participants enrolled:** - 68 randomized - 26 dropped out prior to treatment: 17 from standard treatment (ST); 9 from behavioral activation treatment for smoking (BATS) **Duration of follow-up:** - 26 wk - Measurements at baseline (wk 1), quit date (wk 4), 4 mo post–quit date (wk 16, but wk 12 post 8-wk treatment), and 6.5 mo post–quit date (wk 26, but wk 22 post 8-wk treatment) **Methods of assessment** **Smoking status:** - 7 day self-reported point prevalence abstinence rates at 16 and 26 wk post–quit date - Verified via expired CO - Saliva samples for cotinine analysis at wk 16 and 26 - Verification of abstinence defined as CO ≤10 ppm and cotinine ≤15 ng/ml	**Intervention description:** 2 arms: - ST: nicotine patch + 8 wk CBT (n = 33) - BATS: nicotine patch + 8 wk CBT + behavioral activation (BA) (n = 35) Matched for overall contact time; same specially trained therapists led both types of sessions; taped to ensure protocol followed (20% viewed) **Smoking cessation intervention:** Behavioral interventions 30 min CBT (described in ST below, excluding relaxation; replaced with BA) 30 min of BA (adapted from Lejuez et al. 2001) Group therapy Contact time 8 wk Intervention delivered by psychology doctorate-level therapist Techniques specific to BA included activity monitoring (behavioral checkout form used for goal setting, planning, and monitoring throughout); identifying enjoyable activities and quit-related, abstinence-maintaining, and relapse-prevention activities Drugs Transdermal nicotine patch for 8 wk from quit date (wk 4) with an initial dose of 21 mg for 4 wk, followed by 14 mg for 2 wk, and 7 mg for 2 wk Participants who smoked on average 10-12 cigarettes/day started with the 14-mg patch for the first 6 wk per manufacturer's recommendations **Depression intervention:** Nothing additional to BA	**Inclusion criteria:** - Ages 18 to 65 - Smoke ≥ 10 cigarettes/day - Smoke ≥ 1 yr - BDI-II ≥ 10 - No current SCID-NP diagnosis **Exclusion criteria:** - BDI ≤ 7 - SCID Axis I diagnosis - Current use of psychotropic medications - Current psychotherapy - Contraindication to nicotine patch - Use of smoking pharmacotherapy - Use of other types of tobacco **Note: Demographics were not reported by entire population** **Age:** Mean (SD) ST BATS 42.6 (11.5) 45.0 (12.2) **Gender (n [%]):** Female: ST BATS 16 (48.5%) 17 (48.6%) **Race/ethnicity (n [%]):** African American: ST BATS 25 (75.8%) 24 (69.7%) **Baseline depression assessment:** BDI, 0-62, score < or > 10: ST BATS 10.4 (7.5) 10.8 (5.2) **Smoking characteristics:** FTND: ST BATS 6.1 (2.1) 5.8 (1.8) Cigarettes/day: ST BATS 17.3 (8.1) 18.8 (7.1)	**Follow-up rate:** For abstinence obtained by biochemical verification of smoking status (others considered still smoking): Wk 1 78.6% Wk 4 83.3% Wk 16 61.9% Wk 26 64.3% **Important baseline differences:** None (see Table 1) **Outcomes of interest** **1) Abstinence rate:** ST BATS OR ITT: Wk 16 3/33 4/35 2.71 Wk 26 0/33 5/35 --- Completers: Wk 16 6.3 15.4 2.71 Wk 26 0.0 19.2 --- Rates decreased over time, but interaction between treatment and time was ns BATS >ST (wk 1-wk 26 post–quit date) abs OR 95% CI p 3.59 (1.22, 3.73) 0.02 Continuous abstinence rates did not differ between treatments (p = 0.11) Depression: An interaction between treatment condition and the linear effect of time revealed that the reduction in depressive symptoms over time was greater for BATS than for ST participants (see Table 4, Figure 2) This analysis is in completers (n = 42) BDI beta SE t p -1.99 0.86 -2.31 0.02	**General comments:** None **Applicability cautions:** Age, gender, race, education and income all similar to veteran population **Study-level quality assessment:** Good Comments: - Repeated measures analyses using GEEs - Random allocation - Blinding not possible - Completers did not differ from ITT by demographics **Measure of smoking adequate?** Yes; only those whose smoking status was biochemically verified were considered abstinent at each time point, whereas the 26 missing participants who dropped out prior to treatment were considered as having smoked in ITT analyses **Assessment of adverse effects adequate?** NR

Study ID: MacPherson, Tull, Matusiewicz, et al., 2010

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Depression status: BDI -II	**Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions 60 min CBT Group therapy Contact time 8 sessions Intervention delivered by psychology doctorate-level therapist Techniques included self-monitoring, identifying effective and ineffective cessation strategies from prior quit attempts, relaxation, coping with triggers, identifying social support for cessation, making lifestyle changes (such as increasing physical activity and reducing stress), relapse prevention, and homework Drugs: Same as intervention **Depression intervention:** Behavioral interventions: None **Mean contact time/proportion of sessions completed:** ST: 11 of 16 completed 7 to 8 sessions BATS: 17 of 26 completed 7 to 8 sessions **Treatment sequencing:** NA **Other notes about interventions:** BA measured by Environmental Reward Observation Scale	**Comorbid conditions:** All were excluded	**2) Medication adherence rate:** See mean contact time **3) Differential effects by gender:** NR by treatment **4) Differential effects by depression status:** NR by treatment **5) Differential effects by treatment sequencing:** NA **Report adverse effects?** No List	

Study ID: Munoz, Marin, Posner, et al., 1997

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: San Francisco, CA **Recruitment:** - TV - Radio - Newspaper - Bulletin boards - Health fairs **Setting:** Community **Veterans clinics:** No **Study design:** RCT **Number of participants enrolled:** 136 **Duration of follow-up:** 3 mo, 6 mo **Methods of assessment** **Smoking status:** Self-report of 7 day abstinence from cigarettes using mailed self-monitoring charts; saliva cotinine using 14 ng/ml as cut point but results not reported using this method **Depression status:** CES-D	**Intervention description:** Mailed smoking cessation guide and mood management guide (immediate) vs smoking cessation guide and mood management guide at 3 mo (delayed) Immediate vs delayed: N = 71 (54 MDE) vs n = 65 (52 MDE) Incentives: - $2 for each 2 wk chart up to 6 charts in mood management - $10 for each assessment a 3 mo and 6 mo - $10 for saliva sample **Smoking cessation intervention:** Behavioral interventions The "GUIA" (Guia Para Dejar de Fumar), a 36-page booklet from NCI (2002), is an anti-smoking brochure published in Spanish that includes reasons to quit, preparing to quit, techniques to resist the urge to smoke as a result of social situations, and changes in diet and exercise to avoid weight gain Mood management intervention, "Tomando Control de Su Vida," an audio cassette on how to use materials, 30-minute relaxation exercise, self-monitoring of cigarette use booklet, pleasant activity guide, and monitoring tool A call was placed to verify receipt of materials and answer questions Drugs: None **Depression intervention:** None (note that we have classified the mood management module as part of the smoking cessation intervention, but it could be classified as a depression intervention) **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions GUIA plus delayed (3 mo) mood management; essentially a waitlist control Drugs: None **Depression intervention:** None **Mean contact time/proportion of sessions completed:** NR **Treatment sequencing:** NA	**Inclusion criteria:** - Age 18+ - 3+ cigarettes/day - Completely or very sure they wanted to stop smoking within 3 mo - Able to read Spanish - Have access to audiotape player - Live in Bay area **Exclusion criteria:** None **Age:** Mean (SD): 35.3, SD = NR **Gender (n [%]):** Women 52 (38.2%) Men 84 (61.8%) **Race/ethnicity (n [%]):** Latino 136 (100%) **Baseline depression assessment:** Modified DIS CES-D for level of depressive symptoms Immediate: 21.5 (14.9) Delayed: 20.7 (12.5) Lifetime MDE n = 106 Current = 53 History = 53 No MDE history = 30 **Smoking characteristics:** Number of cigarettes/day 14.1 (8.2) **Comorbid conditions:** NR	**Follow-up rate:** Not clearly reported **Important baseline differences:** Delayed group had lower education and was less likely to be employed **Outcomes of interest** **1) Abstinence rate:** (by self report) Immediate (3 mo) No MDE 4 of 17 Current 4 of 28 MDE history 8 of 26 Immediate (6 mo) No MDE 3 of 17 Current 5 of 28 MDE history 10 of 26 Delayed (3 mo) No MDE 1 of 13 Current 3 of 25 MDE history 3 of 27 Delayed (6 mo) No MDE 2 of 13 Current 2 of 25 MDE history 2 of 27 **2) Medication adherence rate:** Not clearly reported Those returning filled out materials in immediate group vs those that did not = 45% vs 14% abstinence at 3 mo **3) Differential effects by gender:** NR **4) Differential effects by depression status:** See above for unadjusted results **5) Differential effects by treatment sequencing:** NA **Report adverse effects?** NR	**General comments:** Stratified randomization (no history of MDE vs history of or current MDE) **Applicability cautions;** Spanish speaking only **Study-level quality assessment:** Fair Comments: - Randomization and allocation concealment procedures not well described - No assessment of cotreatments (e.g., NRT) - Follow-up rates not clearly reported - Biochemical verification done, but results not reported **Measure of smoking adequate?** Yes; but not clearly reported **Assessment of adverse effects adequate?** NA

Study ID: Saules, Schuh, Arfken, et al., 2004

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: NR; multisite? **Recruitment:** Advertisement **Setting:** - Mental health clinic - Academic **Veterans clinics:** No **Study design:** RCT **Number of participants enrolled:** 150 **Duration of follow-up:** 3, 6, and 12 mo post–quit date **Methods of assessment** **Smoking status:** Nonsmoking defined as self-reported abstinence combined with CO < 10 ppm **Depression status:** BDI	**Intervention description:** 3-arm study investigated the addition of fluoxetine to standard treatment to improve smoking cessation in smokers with depression: Fluoxetine (20 mg) + NRT + CBT (n = 48) Fluoxetine (40 mg) + NRT + CBT (n = 51) Placebo + NRT + CBT (n = 51) **Smoking cessation intervention:** Behavioral interventions 6 wk of group CBT started 2 wk prior to quit date delivered by trained therapists with treatment manual; no further information given Drugs - 14 wk of either 20 mg or 40 mg of fluoxetine started 4 wk before quit date - 10 wk of standard (15 mg dose) transdermal NRT started at quit date; 6 wk on 15 mg, then 2 wk 10 mg, and 2 wk 5 mg **Depression intervention:** Behavioral interventions Nothing in addition to standard CBT (fluoxetine is an antidepressant, however) **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions Same as intervention group Drugs - 14 wk of placebo started 4 wk before quit date - Standard transdermal patch NRT as above **Depression intervention:** Behavioral interventions Same as intervention; nothing in addition to standard CBT **Mean contact time/proportion of sessions completed:** 60% completed active phase; no difference between groups **Treatment sequencing:** NA	**Inclusion criteria:** - Ages 21 to 65 - ≥ 15 cigarettes/day - Expired CO ≥ 15 ppm **Exclusion criteria:** - Psychiatric episode in last 6 mo - Current psychiatric medication use - Pregnancy - Poor comprehension - Any clinically significant medical condition **Age:** Total pop (mean) 39.78 SDs NR Range: 21 to 65 Placebo 20mg 40mg 40.85 40.44 38.44 **Gender (n [%]):** Female: Placebo 20mg 40mg 23 (44.7%) 31(60.8%) 27(56.9%) **Race/ethnicity (n [%]):** White: Placebo 20mg 40mg 78.3% 74.5% 67.3% Black: Placebo 20mg 40mg 21.7% 21.3% 26.5% Other: Placebo 20mg 40mg --- 4.2% 6.2% **Baseline depression assessment:** BDI (mean score): Placebo 20 mg 40 mg 6.34 5.14 3.33 **Smoking characteristics:** FTND (score); Placebo 20 mg 40 mg 6.13 6.08 5.51 **Comorbid conditions (n [%]):** History of MDD (%) Placebo 20 mg 40 mg 17.0% 22.0% 22.0% State-Trait Anxiety (%) Placebo 20 mg 40 mg 43.69% 46.29% 44.50%	**Follow-up rate:** Follow-up rates NR for 3, 6, 12 mo follow-ups **Important baseline differences:** Higher BDI in placebo group; F(2,129) = 3.39, p = 0.037 **Outcomes of interest** At 15 wk from start of study, smoking cessation = 40% **1) Abstinence rate:** At 15 wk: Total (n = 150) Placebo = 35.4% 20 mg fluoxetine = 43.1% 40 mg fluoxetine = 43.1% History of MDD (n = 30) Placebo = 37.5% 20 mg fluoxetine = 54.5% 40 mg fluoxetine = 54.5% But these n's are small ~ 10 **2) Medication adherence:** NR **3) Differential effects by gender:** None **4) Differential effects by depression status:** None **5) Differential effects by treatment sequencing:** NA **Report adverse effects?** Yes; but only that they were lower in both fluoxetine groups compared to placebo (p = 0.038) using the Minnesota Tobacco Withdrawal Symptom Checklist	**General comments:** Population not depressed (BDI score = 4.92 and only 20% had a history of depression), but results given by whether or not history of MDD was present Subjects were paid $150 to complete, $25 for follow-up, and $50 at final visit **Applicability cautions:** College educated, mean = 79.3% **Study-level quality assessment:** Fair Comments: - No rates of treatment discontinuation by arm - Selective outcome reporting: Did not report smoking rates by arm across 3, 6, 12 mo follow-ups. - Did not report loss to follow-up **Measure of smoking adequate?** Yes; cotinine **Assessment of adverse effects adequate?** Assessment method not given; reported that number of AEs did not differ between groups

Study ID: Vickers, Patten, Lewis, et al., 2009

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
Geographical location: Rochester, MN **Recruitment:** Advertisement **Setting:** - Mental health, primary care, mixed - Academic and nonacademic **Veterans clinics:** No **Study design:** RCT **Number of participants enrolled:** 60 **Duration of follow-up:** End of treatment = 10 wk Follow-up = 24 wk **Methods of assessment** **Smoking status:** Self-reported, 7-day point prevalence abstinence verified by expired CO < 8 ppm at end of treatment and urine cotinine at follow-up wk 24 **Depression status:** HSRD	**Intervention description:** Tested addition of exercise to NRT in a depressed female population to aid smoking abstinence Intervention: NRT + exercise + smoking cessation behavioral counseling (n = 30) Control: NRT + health education + smoking cessation behavioral counseling (n = 30) **Smoking cessation intervention:** Behavioral interventions Brief smoking cessation counseling (10 min/visit) with handouts and NCI "Clearing the Air" brochure via same specialist as CBT for exercise Drugs Transdermal patch NRT (21 mg/day) started on quit date (wk 4), continued through wk 10 **Depression intervention:** Behavioral interventions 10 wk social cognitive theory–informed CBT exercise intervention strategies (not actual exercise) to encourage patient to meet the CDC/ACSM 1995 guidelines of moderate physical activity (30 min/day x 5 wk) via trained (manual and observation) patient education specialist via ten 30 min weekly sessions Topics included benefits, goal setting, reinforcement, problem solving, overcoming barriers, and relapse prevention Exercise activity was self-monitored. **Comparator intervention(s)** **Smoking cessation intervention:** Behavioral interventions Same as intervention (above); brief counseling (10 min/visit) with handouts via same specialist as health education Drugs: Same as intervention **Depression intervention:** Behavioral interventions Equal time/contact control using health education via patient education specialist; topics included sleep, nutrition, preventive screening tests **Mean contact time/proportion of sessions completed:** Mean (SD) sessions completed out of 10 sessions: Treatment 7.6(3.5) Control 8.2(2.7)	**Inclusion criteria:** - Female - Ages 18 to 65 - CES-D ≥ 16 - Cigarettes ≥ 10/day for past 6 mo - Current exercise < 20 min on fewer than 3 day/wk - Ability to do exercise - Good health - Negative pregnancy test - BMI ≤ 40 **Exclusion criteria:** - Recent MI - Substance abuse - Psychosis - Nortriptyline, bupropion - Other tobacco product use - Skin allergies or other problems with NRT patch - Suicidal ideation **Age:** Range: 18 to 65 Mean (SD): Treatment 40.9 (11.8) Control 41.8 (12.1) **Gender (n [%]):** Female 60 (100%) **Race/ethnicity (n [%]):** White 59 (98%) - Black 1 (2%) in exercise group - White 30 (100%) in control group **Baseline depression assessment:** CES-D, 0-60, > 16 Treatment 29.8(9.3) Control 32.4(9.6) HRSD Treatment 12.8(6.0) Control 15.4(9.3)	**There were no significant differences between groups on any outcome variable** **Follow-up rate:** Wk 24 follow-up: Treatment 16 of 30 (53%) Control 15 of 30 (50%) **Important baseline differences:** Current psychotherapy: Treatment 7 (23) Control 11 (37) Current pharmacotherapy Treatment 16 (53) Control 19 (63) **Outcomes of interest** **1) Abstinences rate:** Wk 24 follow-up Treatment 1 of 16 (6.3%) Control 1 of 15 (6.7%) **2) Medication adherence rate:** NRT: Treatment 36% Control 31% Exercise or Education: Treatment 49% Control 21% **3) Differential effects by gender:** NA (all female) **4) Differential effects by depression status:** NR **5) Differential effects by treatment sequencing:** NA **Report adverse effects?** No	**General comments:** Subjects were paid a nominal fee: $25 at end of treatment (wk 10) and $25 after follow-up (wk 24) **Applicability cautions:** - 65% college-educated - 100% overweight white females **Study-level quality assessment:** Fair to poor Comments: - Small pilot, not powered for any statistical test stronger than analysis via 2 sample, rank-sum test - In the exercise literature, not helping overweight people with the actual exercise has been shown to be of no benefit - Missing outcome data on 50% of sample by wk24 **Measure of smoking adequate?** Yes **Assessment of adverse effects adequate?** NR

Study ID: Vickers, Patten, Lewis, et al., 2009

Study Information	Interventions	Participant Characteristics	Results and Adverse Effects	Comments/ Quality Scoring
	Treatment sequencing: NA **Other notes about interventions:** - Important to note that subjects were left on their own to find venues and types of actual exercise - Also measured weight, weight concerns, change in mood (Positive and Negative Affect Scale), fitness level (VO2 max test), and physical activity (physical activity recall)	**Smoking characteristics:** Cigarettes/day: Treatment Control 20.0 (7.8) 21.6 (7.3) FTND score ≥ 6 Treatment Control 16 (53) 20 (67) **Comorbid conditions (n [%]):** None medical or psychiatric; all excluded but examined weight concern: Treatment Control 5.8 (2.2%) 6.6 (2.1%) Weight, kg: Treatment Control 76.0 (15.1%) 73.6 (15.7%)		

Abbreviations: AE = adverse effects, am = ante meridian (before noon), BA = behavioral activation, BATS = behavioral activation treatment for smoking, BDI-II = Beck Depression Inventory-II, BID = two times per day, CBT = cognitive behavioral therapy, CES-D = Center for Epidemiologic Studies-Depression Scale, CI = confidence interval, CO = carbon monoxide, DIS = Diagnostic Interview Schedule, FTND = Fagerstrom Test for Nicotine Dependence, GEE = generalized estimating equation, HDRS = Hamilton Depression Rating Scale, ID = identification, ITT = intention to treat, MDD = major depressive disorder, MDE = major depressive episode, mg = milligram or milligrams, ml = milliliter, mo = month/months, n = number, NA = not applicable, NCI = National Cancer Institute, ng = nanogram, NR = not reported, NRT = nicotine replacement therapy, ns = not significant, OR = odds ratio, p = probability, pm = post meridian (afternoon), POMS = Profile of Mood States, ppm = parts per million, RCT = randomized controlled trial, SCID = Structured Clinical Interview for DSM Diagnoses, SD = standard deviation, SE = standard error, ST = standard treatment, UDD = unipolar depressive disorder, vs = versus, wk = week/weeks, yr = year/years

LIST OF INCLUDED STUDIES IN ALPHABETICAL ORDER

Brown RA, Kahler CW, Niaura R, et al. Cognitive-behavioral treatment for depression in smoking cessation. J Consult Clin Psychol 2001;69(3):471-80.

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Hall SM, Munoz RF, Reus VI, et al. Mood management and nicotine gum in smoking treatment: a therapeutic contact and placebo-controlled study. J Consult Clin Psychol 1996;64(5):1003-9.

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Hayford KE, Patten CA, Rummans TA, et al. Efficacy of bupropion for smoking cessation in smokers with a former history of major depression or alcoholism. Br J Psychiatry 1999;174:173-8.

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Kinnunen T, Korhonen T, Garvey AJ. Role of nicotine gum and pretreatment depressive symptoms in smoking cessation: twelve-month results of a randomized placebo controlled trial. Int J Psychiatry Med 2008;38(3):373-89.

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Munoz RF, Marin BV, Posner SF, et al. Mood management mail intervention increases abstinence rates for Spanish-speaking Latino smokers. Am J Community Psychol 1997;25(3):325-43.

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APPENDIX D: EXCLUDED STUDIES

All studies listed in Table 12 were reviewed in their full-text version and excluded for the reason indicated. An alphabetical reference list follows the table.

Table 12. List of Excluded Studies

Reference	Population not depressed	Main outcome not of interest to key questions	Not peer-reviewed	Main outcome not reported at desired interval	Not RCT or secondary analysis	Analysis does not address key questions
Acton, 2005 (203)	X					
Alderton, 2009 (5)					X	
Barnett, 2008 (82)		X				
Bercaw, 2008 (963)			X			
Berlin, 2006 (141)				X		
Blondal, 1999 (1317)						X
Brown, 2007 (117)	X					
Buchanan, 2004 (1247)	X					
Capone, 2003 (968)			X			
Carmody, 2008 (567)	X					
Carton, 2002 (300)	X					
Catley, 2003 (278)	X					
Catley, 2005 (179)	X					
Collins, 2003 (1265)			X			
Cornelius, 1997 (1036)		X				
Covey, 2008 (1204)	X					
Covey, 1990 (445)				X		
Cox, 2004 (237)		X				
Csonka, 2008 (1206)			X			
Dalack, 1995 (413)		X				
Frederick, 1996 (924)		X				
Friend, 2007 (123)	X					
Gilbert,1999 (366)		X				

Reference	Population not depressed	Main outcome not of interest to key questions	Not peer-reviewed	Main outcome not reported at desired interval	Not RCT or secondary analysis	Analysis does not address key questions
Ginsberg, 1995 (1086)		X				
Ginsberg, 1997 (381)		X				
Glassman, 1993 (425)	X					
Glassman, 2001 (325)		X				
Glassman, 1988 (451)				X		
Haas, 2005 (235)						X
Hayford, 1997 (1325)			X			
Helgason, 2004 (742)					X	
Hernandez-Reif, 1999 (369)	X					
Hill, 2007 (626)					X	
Hitsman,1999 (363)	X					
Jarvik, 2000 (1297)	X					
Keuthen, 2000 (343)	X					
Killen,1999 (1035)	X					
Killen, 2008 (1197)	X					X
Lerman, 2004A (1256)	X					
Lerman, 2004 B(215)		X				
Leventhal, 2008 (85)	X					
Levine, 2000 (1152)			X		X	
McCarthy, 2008 (587)	X					
McClure, 2009 (34)						X
McFall, 2005 (1240)	X					
McHugh, 2001 (1291)	X					
Mermelstein, 2003 (788)	X					
Munoz, 2006 (165)						X
Oncken, 2007 (641)	X					
Patten, 2002 (304)				X		
Patten, 1998 (375)	X					
Perkins, 2008 (1199)		X				

Reference	Population not depressed	Main outcome not of interest to key questions	Not peer-reviewed	Main outcome not reported at desired interval	Not RCT or secondary analysis	Analysis does not address key questions
Piper, 2010 (1113)	X					
Pomerleau, 2003 (2854)		X				
Prochaska, 2008 (115)		X				
Rabius, 2008 (42)	X					
Rovina, 2007 (604)					X	
Schippers, 2006 (1233)				X		
Smith, 2003 (276)	X					
Sonne, 2010 (465)	X					
Spring, 2007A (133)				X		
Spring, 2004 (1255)						
Spring, 2007B (150)					X	
Strong, 2009 (8)	X					
Swan, 2003 (772)	X					
Thorndike, 2008 (91)	X					
Thorndike, 2006 (1228)	X					
Trockel, 2008 (53)	X					
Uyar, 2007 (607)	X					
Vazquez, 1999 (357)					X	
Walsh, 2008 (74)	X					
Wetter, 1999 (884)	X					
Wileyto, 2005 (189)		X				
Zelman, 1992 (946)	X					
Ziedonis, 1997 (1328)	X					

LIST OF EXCLUDED STUDIES

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APPENDIX E: ACRONYMS AND ABBREVIATIONS

AE	adverse effects
am	ante meridian (before noon)
BA	behavioral activation
BATS	behavioral activation treatment for smoking
BID	two times per day
BDI-II	Beck Depression Inventory-II
CBT	cognitive behavioral therapy
CES-D	Center for Epidemiologic Studies-Depression
CI	confidence interval
CO	carbon monoxide
DIS	Diagnostic Interview Schedule
FTQ	Fagerstrom Tolerance Questionnaire
FTND	Fagerstrom Test for Nicotine Dependence
GEE	generalized estimating equation
ID	identification
HDRS	Hamilton Depression Rating Scale
ITT	intention to treat
MDD	major depressive disorder
MDE	major depressive episode
mg	milligram or milligrams
mo	month or months
ml	milliliter or milliliters
N or n	number
NA	not applicable
NCI	National Cancer Institute
ng	nanogram
NRT	nicotine replacement therapy
NR	not reported
ns or NS	not significant
OR	odds ratio
p	probability
pm	post meridian (after noon)
POMS	Profile of Mood States
ppm	parts per million
RCT	randomized controlled trial
SCID	Structured Clinical Interview for DSM Diagnoses
SD	standard deviation
SE	standard error
ST	standard treatment
UDD	unipolar depressive disorder
vs	versus
wk	week or weeks
yr	year or years