SMOKING CESSATION INTERVENTIONS FOR SMOKERS WITH DEPRESSION

SUMMARY OF COCHRANE REVIEW

OBJECTIVE OF THE REVIEW

• Assess the effectiveness of smoking cessation interventions in smokers with current or past depression

BACKGROUND

There is a need for tailored interventions for smokers with depression



- Smoking is strongly associated with depression
- The probability of being a smoker is twice as likely in people with depression ^{(1) (2) (3)}
- Smokers attempting to quit are more likely to fail if they are also depressed ^{(4) (5) (6) (7)}
- Smokers with depression have a higher chance of:
 - experiencing negative mood changes from nicotine withdrawal,
 - relapsing to smoking after a quit attempt,
 - smoking-related morbidity and mortality ^{(8) (9) (10) (11)}
- Several studies have evaluated smoking cessation interventions that involve either antidepressants or psychosocial mood management components ^{(12) (13) (14) (15)}

METHODS



- Systematic review which includes randomized controlled trials (RCTs) that compare smoking cessation interventions in smokers with current or past depression
- Comparisons were made between smoking cessation interventions with and without specific mood management components that addressed depression

RESULTS

Adding a brief mood management intervention to smoking cessation treatment helps smokers with current or past depression quit smoking



- Smoking cessation interventions *with* mood management components: (n=33)
 - Addition of mood management has a significant positive effect on smokers with current or past depression as show below: ⁽¹⁶⁾

Figure 1: Forest plot of comparison: Psychosocial mood management versus control for smokers with current depression. Abstinence at six months of greater follow-up.

	Experimental		Control		Risk Ratio		Risk Ratio	
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% Cl	M-H, Fixed, 95% Cl	
Brown 2007	2	20	6	25	6.6%	0.42 [0.09, 1.85]		
Carmody 2008	14	65	6	61	7.7%	2.19 [0.90, 5.33]		
Cinciripini 2010	6	33	2	27	2.7%	2.45 [0.54, 11.19]		
MacPherson 2010	2	35	0	33	0.6%	4.72 [0.24, 92.85]		
Muñoz 1997	5	28	2	25	2.6%	2.23 [0.47, 10.50]		
Muñoz 2006a	2	19	1	13	1.5%	1.37 [0.14, 13.57]		
Muñoz 2006b	4	20	4	28	4.1%	1.40 [0.40, 4.94]		
Muñoz 2009	6	33	4	31	5.1%	1.41 [0.44, 4.52]	-	
Rabius 2007b	23	294	18	249	24.2%	1.08 [0.60, 1.96]	_ _	
Rabius 2007b	27	256	17	252	21.3%	1.56 [0.87, 2.80]		
Van der Meer 2010	29	118	18	119	22.3%	1.62 [0.96, 2.76]		
Vickers 2009	1	30	1	30	1.2%	1.00 [0.07, 15.26]		
Total (95% CI)		951		893	100.0%	1.47 [1.13, 1.92]	•	
Total events	121		79					
Heterogeneity: Chi2=	= 6.12, df= 1	11 (P = 0.87	0.01 0.1 1 10 100					
Test for overall effect	t: Z = 2.84 (P = 0.005)	Favours control Favours experimental					

Figure 2: Forest plot of comparison: Psychosocial mood management versus control for smokers with past depression. Abstinence at six months of greater follow-up.

	Experimental		Control		Risk Ratio		Risk Ratio		
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% Cl	M-H, Fixed, 95% Cl		
Brown 2001	9	86	14	93	12.7%	0.70 [0.32, 1.52]			
Brown 2007	5	44	9	64	6.9&	0.81 [0.29, 2.25]			
Carmody 2008	12	47	7	55	6.1%	2.01 [0.86, 4.68]			
Cinciripini 2010	12	95	8	99	7.4%	1.56 [0.67, 3.65]			
Hall 1994	10	29	3	17	3.6%	1.95 [0.62, 6.13]			
Hall 1996	5	21	4	23	3.6%	1.37 [0.42, 4.43]			
Hall 1998	9	34	5	31	4.9%	1.64 [0.62, 4.37]			
Muñoz 1997	10	26	2	27	1.9%	5.19 [1.26, 21.47]			
Muñoz 2006a	2	25	6	28	5.3%	0.37 [0.08, 1.68]	←		
Muñoz 2006b	8	25	11	27	10.0%	0.79 [0.38, 1.68]			
Muñoz 2009	5	42	4	44	3.7%	1.31 [0.38, 4.55]			
Patten 1998	4	13	2	16	1.7%	2.46 [0.53, 11.38]			
Van der Meer 2010	58	243	34	242	32.2%	1.70 [1.16, 2.49]			
Total (95% CI)		730		766	100.0%	1.41[1.13, 1.77]	•		
Total events	149		109						
Heterogeneity: Chi2=	= 15.51, df=	12 (P = 0.2	0.1 0.2 0.5 1 2 5 10						
Test for overall effect	t: Z = 3.00 ((P = 0.003)	Favours control Favours experimental						

- > Bupropion has a positive, but not significant effect on smokers with current depression
- Although evidence is weak due to the small number of trials, bupropion may increase long-term cessation in smokers with past depression ⁽¹⁶⁾

- Evaluation of the effectiveness of fluoxetine, nortriptyline, paroxetine, selegiline, and sertraline in smokers with current or past depression was not possible due to limited trial data ⁽¹⁶⁾
- Smoking cessation interventions *without* mood management components:⁽¹⁶⁾
 - Not enough evidence to show that nicotine replacement therapy or standard smoking cessation interventions are beneficial to smokers with depression ⁽¹⁶⁾

CONCLUSION

- Combining a smoking cessation intervention with a mood management component increases long-term cessation in smokers with current or past depression
- Additional trials are required to evaluate the effectiveness of bupropion and other antidepressants on cessation rates in smokers with current or past depression



BIBLIOGRAPHY

1. *Co-morbidity of smoking in patients with psychiatric and substance use disorder.* Kalman, D, Baker-Morissette, S and George, TP. 2005, American Journal on Addiction, Vol. 14, pp. 106-23.

2. *Smoking and mental illness. A population-based prevalence study.* Lasser, K, et al., et al. 2000, JAMA, Vol. 284, pp. 2606-9.

3. *Tobacco use and cessation in psychiatric disorders: National institute of mental health.* **Ziedonis, D, et al., et al.** 2008, Nicotine & Tobacco Research, Vol. 10, pp. 1691-715.

4. Smoking cessation among patients with depression. Covey, L. 1999, Primary Care, Vol. 26, pp. 691-706.

5. *Cigarette smoking: implications for psychiatric illness.* **Glassman, AH.** 1993, The American Journal of Psychiatry, Vol. 150, pp. 546-53.

6. Past major depression and smoking cessation outcome: a systematic review and meta-analysis update. **Hitsman, B, et al.**, **et al.**, 2012, Addiction, pp. 294-306.

7. *The relationship of major depressive disorder and gender to changes in smoking for current and former smokers: longitudinal evaluation in the US population.* **Weinberger, AH, et al., et al.** 2020, Addiction, Vol. 107, pp. 1847-56.

8. Quitting smoking does not increase the risk of major depressive episodes among users of Internet smoking cessation interventions. **Torres, LD, et al., et al.** 2010, Psychological Medicine, Vol. 40, pp. 441-9.

9. *Two decades of smoking cessation treatment research on smokers with depression: 1990-2010.* Weinberger, AH, et al., et al., 2013, Nicotine & Tobacco Research, Vol. 15, pp. 1014-31.

10. *Does smoking cessation cause depression and anxiety? Findings from the ATTEMPT Cohort.* Bolam, B, West, R and Gunnell, D. 2011, Nicotine & Tobacco Research, Vol. 13, pp. 209-14.

11. *Smoking cessation interventions for patients with depression: A systematic review and meta-analysis.* **Gierisch, JM, et al.**, **et al.**, 2012, Journal of General Internal Medicine, Vol. 27, pp. 351-60.

12. Effectiveness of a mood management component as an adjunct to a telephone counselling smoking cessation intervention for smokers with a past major depression: a pragmatic randomized controlled trial. Van der Meer, RM, et al., et al. 2010, Addiction, Vol. 105, pp. 1991-9.

13. *Effectiveness of cognitive-behavioral therapies for smokers with histories of alcohol dependence and depression.* **Patten, CA, et al., et al.** 1998, Journal of Studies on Alcohol, Vol. 59, pp. 327-35.

14. *Mood management and nicotine gum in smoking treatment: a therapeutic contact and placebo-controlled study.* Hall, SM, et al., et al. 1996, Journal of Consulting and Clinical, Vol. 64, pp. 1003-9.

15. *Cognitive-behavioral treatment for depression in smoking cessation.* **Brown, RA, et al., et al.** 3, 2001, Journal of Consulting and Clinical Psychology, Vol. 69, pp. 471-80.

16. *Smoking cessation interventions for smokers with current or past depression (Review).* van der Meer, RM, et al., et al. 2013, Cochrane Database of Systematic Reviews, Vol. 8.