

Hypnotherapy for smoking cessation (Review)

Barnes J, Dong CY, McRobbie H, Walker N, Mehta M, Stead LF



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[Intervention Review]

Hypnotherapy for smoking cessation

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Editorial group: Cochrane Tobacco Addiction Group.

Publication status and date: New search for studies and content updated (no change to conclusions), published in Issue 10, 2010.

Review content assessed as up-to-date: 21 July 2010.

Citation: Barnes J, Dong CY, McRobbie H, Walker N, Mehta M, Stead LF. Hypnotherapy for smoking cessation. *Cochrane Database of Systematic Reviews* 2010, Issue 10. Art. No.: CD001008. DOI: 10.1002/14651858.CD001008.pub2.

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ABSTRACT

Background

Hypnotherapy is widely promoted as a method for aiding smoking cessation. It is proposed to act on underlying impulses to weaken the desire to smoke or strengthen the will to stop.

Objectives

To evaluate the efficacy of hypnotherapy for smoking cessation.

Search strategy

We searched the Cochrane Tobacco Addiction Group Specialized Register and the databases MEDLINE, EMBASE, AMED, SCI, SSCI using the terms smoking cessation and hypnotherapy or hypnosis. Date of most recent searches July 2010. There were no language restrictions.

Selection criteria

We considered randomized controlled trials of hypnotherapy which reported smoking cessation rates at least six months after the beginning of treatment.

Data collection and analysis

Three authors independently extracted data on participant characteristics, the type and duration of the hypnotherapy, the nature of the control group, smoking status, method of randomization, and completeness of follow up. They also independently assessed the quality of the included studies.

The main outcome measure was abstinence from smoking after at least six months follow up. We used the most rigorous definition of abstinence in each trial, and biochemically validated rates where available. Those lost to follow up were considered to be smoking. We summarised effects as risk ratios (RR). Where possible, we performed meta-analysis using a fixed-effect model. We also noted any adverse events reported.

Main results

Eleven studies compared hypnotherapy with 18 different control interventions. There was significant heterogeneity between the results of the individual studies, with conflicting results for the effectiveness of hypnotherapy compared to no treatment, or to advice, or psychological treatment. We did not attempt to calculate pooled risk ratios for the overall effect of hypnotherapy. There was no evidence of a greater effect of hypnotherapy when compared to rapid smoking or psychological treatment. Direct comparisons of hypnotherapy with cessation treatments considered to be effective had confidence intervals that were too wide to infer equivalence.

Authors' conclusions

We have not shown that hypnotherapy has a greater effect on six-month quit rates than other interventions or no treatment. There is not enough evidence to show whether hypnotherapy could be as effective as counselling treatment. The effects of hypnotherapy on smoking cessation claimed by uncontrolled studies were not confirmed by analysis of randomized controlled trials.

PLAIN LANGUAGE SUMMARY

Does hypnotherapy help people who are trying to stop smoking

Different types of hypnotherapy are used to try and help people quit smoking. Some methods try to weaken people's desire to smoke, strengthen their will to quit, or help them concentrate on a 'quit programme'. Trials have used different types and amounts of hypnotherapy and compared them with different control conditions, including no treatment, brief advice, or smoking cessation counselling. Although it is possible that hypnotherapy could be as effective as counselling treatment there is not enough good evidence to be certain of this.

BACKGROUND

Hypnotherapy has been recognized as a therapeutic tool by professional medical groups in a number of countries for many years, and can be powerful for changing patterns of behaviour when used as an adjunct to other therapies, such as cognitive behavioural therapy (CBT) (Kirsch 1995). Clinical research is still limited but some success has been reported for symptom reduction in irritable bowel syndrome (Whorwell 1991), asthma (Morrison 1988), chronic pain (Hart 1994) and for improving the quality of life of cancer patients (Newton 1982). There is however, little consensus about how hypnotherapy might induce these effects. It is also recognized that treatment success could be influenced by other factors such as the transference relationship between patient and therapist and the hypnotisability of subjects (Perry 1979).

The rationale for hypnotherapy as a useful adjunct for smoking cessation is that, by acting on underlying impulses, it may weaken the desire to smoke, strengthen the will to stop or improve the ability to focus on a treatment programme by increasing concentration (Spiegel 1993). Many different hypnotherapy techniques have been employed but the most frequently used approaches are variants of the 'one session, three point' method developed by Spiegel. This method attempts to modify patients' perceptions of smoking by using the potential of hypnotherapy to induce deep

concentration. During the session the smoker is instructed that a) smoking is a poison, b) the body is entitled to protection from smoke, and c) there are advantages to life as a nonsmoker (Spiegel 1964). This approach also includes training in self hypnosis which may be as important as hypnosis by a therapist (Katz 1980). Self-hypnosis can be used at will by the patient. Compliance may be higher and costs lower because only one session is required. In uncontrolled studies six-months abstinence rates using this method are reported to vary between 20 and 35%.

Most of the older studies in the scientific literature are either case reports or poor quality uncontrolled trials, which show a great variability in quit rates (4 to 88%) six months after treatment. Interpretation of these studies is complicated by the many different hypnotherapy regimens used and the variation in number and frequency of treatments (Holroyd 1980). The purpose of this review is to assess the efficacy of hypnotherapy for smoking cessation from all the relevant trials purporting to be randomized and controlled.

OBJECTIVES

To evaluate the effectiveness of hypnotherapy as a treatment for

smoking cessation.

We set out to test the following hypotheses:

- a) That hypnotherapy has a therapeutic effect in achieving long-term smoking cessation compared with no intervention.
- b) That the magnitude of the effects observed with hypnotherapy is greater than with other intervention strategies.

METHODS

Criteria for considering studies for this review

Types of studies

Randomized controlled trials.

Types of participants

People who wish to stop smoking, irrespective of gender, number of years smoking, or level of nicotine dependence.

Types of interventions

We considered any trial of hypnotherapy for smoking cessation. We included studies comparing hypnotherapy with no treatment or with any other therapeutic interventions. We reported the type and duration of therapy.

Types of outcome measures

The primary outcome was abstinence (continuous, point prevalence or prolonged) from smoking, assessed at follow up at least six months from the start of treatment. Validated abstinence based on biochemical markers, and abstinence based on self report by telephone and postal questionnaires were accepted. We also looked for any adverse events reported in the studies.

Search methods for identification of studies

We identified all reports which might describe randomized controlled trials (RCTs) of hypnotherapy for smoking cessation from the Cochrane Tobacco Addiction Group Specialized Register (most recent search July 2010). Additional search strategies used to identify studies included: searches of MEDLINE (1966-2010 June week 5), EMBASE (1980-2010 week 26), AMED (Allied and Alternative Medicine database) (1985-July 2010) and the ISI Science Citation and Social Science Citation Indexes (BIDS 1981-2005, Web of Science 2005-July 2010) using the terms "hypnotherapy" and "smoking cessation", and cross-referencing the bibliographies

of identified trials and reviews. The CISCOM database was no longer available for the 2010 update. There were no language or publication date restrictions in the search.

Data collection and analysis

Three authors independently checked all of the trials identified against the inclusion criteria by reading through the full text copies. The lists of included studies were then compared and any disagreements were resolved by discussion. For each included trial, three authors independently extracted information on study methodology, randomization method, participant demographics, intervention details, smoking cessation rates after six months or more, follow-up rates and adverse events, using a standardised data extraction form. We also extracted information on sample size calculation and baseline equivalence. The same authors also independently assessed the quality of the trials based on the 'Risk of Bias' table elements using principles set out in the Cochrane Handbook. Six elements were assessed: sequence generation, allocation concealment, blinding, addressing incomplete outcome data, freedom from selective reporting and verification of smoking cessation. For studies published after the year 2005, we attempted to contact the study authors for any missing or unclear information. Data extraction forms and quality assessments were then compared, and we resolved any discrepancies by discussion. Information extracted for each included study are presented in the 'Characteristics of Included Studies' tables, and the quality assessment results for each study are presented in the 'Risk of Bias' tables.

For data analysis, if the results were not based on an ITT analysis but had 'loss to follow up' recorded, we recalculated the results to include all randomized subjects (except those deceased), with those lost to follow up assumed to be continuing smokers. We used the strictest criteria for abstinence, preferring sustained over point prevalence measures. We summarized individual study results as a risk ratio (RR), calculated as: (number of quitters in intervention group/ number randomized to intervention group) / (number of quitters in control group/ number randomized to control group). An RR greater than 1.0 indicates a higher rate of quitting in the treatment group than in the control group.

We grouped studies into comparisons according to the characteristics of the 'control' condition, categorising it as a wait list/ no intervention control, a brief intervention or advice on smoking cessation, a psychologically based counselling intervention, or some other intervention. For trials that provided additional identical therapies, for example counselling sessions, in both the treatment and control arms, we expected that the corresponding effects would be balanced in each arm, and included them in comparisons based on the 'control', but in a separate subgroup. So for each comparison the first subgroup was 'hypnotherapy alone versus comparison alone' and the second subgroup was 'hypnotherapy + other treatments versus comparison + other treatments'. This allowed us to assess whether additional treatments in both arms

might alter the relative effect of the hypnotherapy component and contribute to heterogeneity.

For comparisons where more than one eligible trial was identified, we performed meta-analysis using a Mantel-Haenszel fixed-effect method to estimate a pooled risk ratio with 95% confidence intervals (Mantel 1959). This is a change from previous review versions that used odds ratios (OR), because ORs can be misleading (Deeks 2008). We tested for statistical heterogeneity, and where we found it (p value of the chi-square test < 0.05 or $I^2 > 60-70\%$) we considered whether it might be accounted for by characteristics of the interventions, patient populations or way in which outcomes were assessed or defined. If there were sufficient trials for a particular comparison, we used a funnel plot to assess the potential publication bias.

RESULTS

Description of studies

See: [Characteristics of included studies](#); [Characteristics of excluded studies](#).

Results of the search

For the present update we identified five controlled trials potentially relevant for inclusion. All trials were identified within the specialised register of the Cochrane Tobacco Addiction Group; additional searches did not identify further studies. Two studies (Elkins 2006; Carmody 2008) were relevant to include, making a total of eleven included studies compared with nine in the previous version. All included studies were in English.

Included studies

The eleven included studies had data from approximately 1120 participants. Additional details of the included studies are presented in the '[Characteristics of included studies](#)' table. Five studies were conducted in the USA, four in Canada and one each in the UK and Australia. All of the included studies were parallel RCTs with follow-up length of at least six months. Sample sizes were typically small, and varied from 20 to 286 participants; only Carmody 2008 included more than 100 people in each arm and only Lambe 1986 reported a proper sample size calculation. The studies typically included participants who smoked 20 to 40 cigarettes per day (CPD), with an average age between 30 to 40 years and with more females than males.

The studies varied greatly in the method of hypnotic induction used, number of hypnotherapy sessions and duration of hypnotic treatments. Six studies (Barkley 1977; Carmody 2008; Elkins 2006; Hyman 1986; Rabkin 1984; Williams 1988) mentioned the

method or described the details of induction used whilst the rest did not describe the technique. The number of hypnotherapy sessions varied from a single session (Pederson 1975; Pederson 1979; Pederson 1980; Rabkin 1984; Williams 1988) up to eight sessions (Elkins 2006). Fee 1977 did not report the number of sessions. The total duration of hypnosis used in the studies ranged from 30 minutes to eight hours. Five studies provided hypnotherapy in a group format (Pederson 1975; Barkley 1977; Pederson 1979; Pederson 1980; Williams 1988). Although there was such diversity in the interventions, we were unable to do sensitivity analyses based on hypnotherapy type and intensity because there was also variation in the control conditions so very few studies were directly comparable. Some studies compared hypnotherapy alone against more than one intervention; and some studies compared hypnotherapy plus other therapies against other treatment(s). Of the studies comparing hypnotherapy alone against a single treatment (or control): one study compared hypnotherapy with a no-treatment waiting list comparison group Williams 1988. Two other studies (Rabkin 1984; Hyman 1986) had waiting list controls but could not be included in this comparison because treatment was offered before the end of the follow-up period. Five studies compared hypnotherapy with an attention placebo/anti-smoking advice group (Barkley 1977; Hyman 1986; Lambe 1986; Rabkin 1984; Williams 1988). Of these, two (Barkley 1977; Williams 1988) used a control group matching the number of sessions and therapist contact whilst in the other three the comparison intervention had a different format. Pederson 1979 compared a session of cessation focused hypnotherapy to a hypnotherapy session that emphasised relaxation; both groups also had multiple sessions of counselling. Fee 1977 and Rabkin 1984 compared hypnotherapy with non-specific psychological treatments. Carmody 2008 compared a combination of hypnotherapy, provision of nicotine patch and counselling follow-up calls versus a combination of matched duration psychological treatment, nicotine patch and counselling follow-up calls. Two trials compared hypnotherapy with rapid/focused smoking (Hyman 1986; Barkley 1977) and one with a specific drug (fenfluramine), and with a placebo (Fee 1977).

Four studies compared 'hypnotherapy + other therapies' with identical therapies without the hypnotherapy component. Of these, Elkins 2006 compared a combination of hypnotherapy, self-help materials and supportive calls against self-help materials and supportive calls; Pederson 1975 and Pederson 1979 compared hypnotherapy used in conjunction with counselling against counselling alone; and Pederson 1980 compared hypnotherapy in conjunction with rapid smoking and counselling, against rapid smoking and counselling alone.

Excluded studies

Eight randomized studies were excluded because they had follow up at fewer than six months (Casmir 2003; Cornwell 1981; Perry 1979; Rodriguez 2007; Schubert 1983; Spanos 1993; Spanos

1995; Valbo 1995) and four controlled studies were excluded because they were not randomized (Bastien 1983; Hasan 2007; Javel 1980; MacHovec 1978). Nine were excluded for having no control group which did not receive hypnotherapy (Ahijevych 2000; Crasilneck 1968; Dedenroth 1968; Frank 1986; Johnson 1994; Katz 1978; Owens 1981; Perry 1975; Spiegel 1993). Tindle 2006 was excluded because the control group received the same intervention 12 weeks post-randomization. Green 2006 was a meta-analysis; Richard 2002 was a descriptive report and not a controlled trial and finally, Sood 2006 was a cross-sectional survey rather than an RCT.

Risk of bias in included studies

We assessed the quality of each study report based on seven items: randomized sequence generation; allocation concealment; blinding; reporting of incomplete outcome data; selective reporting; verification of smoking cessation; and baseline imbalance.

Sequence generation and concealment: All the included studies mentioned randomization but none reported the method in enough detail to assess whether sequence generation was adequate or whether there was adequate allocation concealment. We contacted the first author of Carmody 2008 for more information on their randomization method, and their response showed adequate sequence generation and allocation concealment.

Blinding: It wasn't possible to blind providers and participants in most cases, and most studies did not state whether the outcome assessors were blinded to participants allocation. Only Carmody 2008, in response to our query, stated that the assessors were blinded.

Incomplete outcome data: Most studies reported the number of participants lost to follow-up and the assumptions made about their smoking status in the analyses. Three studies by Pederson and colleagues did not report whether any participants were lost to follow-up. Elkins 2006 did not report the number in each group; we assumed they were equally divided when calculating back from percentages.

Selective reporting: All studies reported the outcomes described in their methods section.

Verification of cessation: Carmody 2008 validated self-reported success using saliva cotinine or spousal proxy and Elkins 2006 used carbon monoxide or saliva cotinine. Although two studies (Hyman 1986; Rabkin 1984) measured serum thiocyanate during the intervention, in both cases abstinence at six months was based on self report. The other studies used self report obtained by a personal or telephone interview or by postal questionnaire, or did not state the method of follow up.

Baseline imbalance: Two studies had baseline imbalance concerns (Elkins 2006 and Lambe 1986). Three studies did not provide sufficient data to assess baseline equivalence between intervention groups. The remaining studies showed a low risk of bias from lack of baseline equivalence.

There were too few trials in each comparison to undertake sensitivity analysis based on study quality.

Effects of interventions

There was variation in intensity and little information on the types of hypnotherapy used in the studies reviewed, and large variation in the nature of the control interventions. Therefore we did not perform meta-analysis for different forms of hypnotherapy, or provide an overall summary estimate of the effectiveness of hypnotherapy. We organized studies under the following comparisons:

1. Hypnotherapy versus no treatment control
2. Hypnotherapy versus brief attention or advice on smoking cessation
3. Hypnotherapy versus psychological treatments
4. Hypnotherapy versus rapid/focused smoking
5. Hypnotherapy versus drug
6. Hypnotherapy versus placebo drug
7. Hypnotherapy + other treatment versus other treatment alone

Studies comparing hypnotherapy plus other treatments versus the treatments alone (where treatments in both arms are identical) were included in subgroups under one of the above comparisons as explained under Data collection and analysis above. We used smoking cessation at the longest follow-up for all studies.

Trials with multiple treatment or control arms contributed to more than one comparison. Forest plots are used to display the data in all comparisons (see Data and analyses). Comparison 7 showed evidence of heterogeneity of effects, so no pooled estimate is given. Comparisons 1, 5 and 6 each included only one study. We estimated pooled risk ratios for comparisons 2, 3 and 4. No study reported any adverse events.

Hypnotherapy versus no treatment; Analysis 1.1

One trial with 20 participants in each arm (Williams 1988) compared hypnotherapy with a waiting list control. There was a higher 12-month point prevalence cessation rate for hypnotherapy than the no treatment control group in which there were no quitters (RR 19.00; 95% CI 1.18 to 305.88, analysis 1.1.1). We did not include a second trial with a waiting list control (Pederson 1975) here, because the intervention arm confounded hypnotherapy and counselling.

Hypnotherapy versus brief attention or advice; Analysis 2.1

This comparison includes six trials with a total of 396 participants, comparing hypnotherapy with a brief attention or advice control; of these, five trials (n = 363) compared hypnotherapy alone versus attention/advice control alone. Pooling these five trials did not detect a difference in smoking cessation rates at six months or greater follow up (Analysis 2.1.1, pooled RR 1.37; 95% CI 0.89 to 2.11,

$I^2 = 37\%$). The two relatively larger trials (more than 80 smokers; [Lambe 1986](#) and [Rabkin 1984](#)) showed no trend towards success of hypnotherapy compared to the brief attention/advice control group at follow up. Only one small trial ([Williams 1988](#)) showed a significant increase in smoking cessation rate in hypnotherapy group compared to a control consisting of a single discussion session; as with the separate wait list control condition used for this trial in Comparison 1 there were no control group quitters. The other trial of 33 smokers ([Pederson 1979](#)) compared a single session of group hypnosis for cessation to a single session hypnosis for

relaxation during which no suggestions were made about smoking, with both arms also receiving multi session group-based cessation counselling. This showed a benefit of the intervention but with wide confidence intervals ([Analysis 2.1.2](#), RR 4.24; 95% CI 1.07 to 16.70). Although when pooling all six trials the estimate suggests a benefit of hypnotherapy ([Figure 1](#) RR 1.56; 95% CI 1.04 to 2.35, $I^2 = 49\%$) care should be taken with interpreting this result, because a funnel plot ([Figure 2](#)) shows clear asymmetry of the results of these six trials, indicating potential publication bias.

Figure 1. Comparison 2: Hypnotherapy vs Brief attention/ cessation advice, smoking cessation at 6m+ follow up.

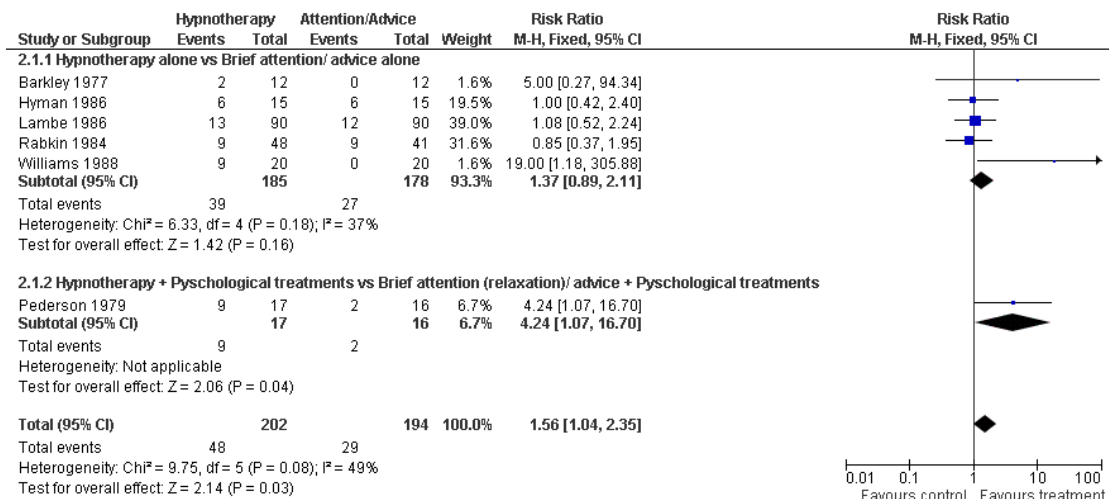
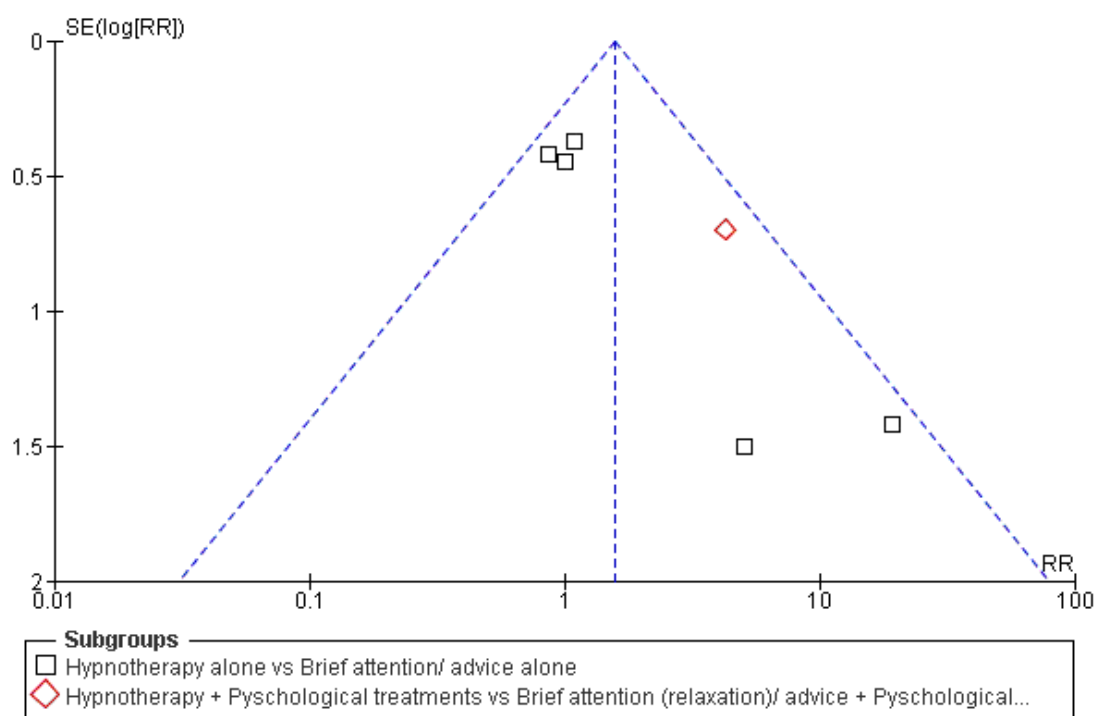


Figure 2. Funnel plot of Hypnotherapy vs Brief attention/Antismoking advice, smoking cessation at 6m+ follow up.



Hypnotherapy versus psychological treatments; Analysis 3.1

This comparison includes three trials with a total of 492 participants. Two trials (Fee 1977; Rabkin 1984) with 211 smokers compared hypnotherapy alone with psychological treatments alone. When pooled, no significant difference in smoking cessation rates was detected (pooled RR 0.93; 95% CI 0.47 to 1.82, Analysis 3.1.1). Carmody 2008 with 141 smokers compared hypnotherapy with psychological treatments, with nicotine patches being provided to all participants (Analysis 3.1.2). There was no significant difference in validated cessation at 12 months although the cessation rate was higher in the hypnotherapy group (RR 1.49, 95% CI 0.86 to 2.58). The overall estimate pooling three trials did not detect evidence of an effect (RR 1.24, 95% CI 0.81 to 1.89, $I^2 = 0\%$).

Hypnotherapy versus other interventions

Analysis 4.1, Analysis 5.1 and Analysis 6.1 compared hypnotherapy alone with (i) rapid/focused smoking, (ii) drug and (iii) placebo drug respectively. Within these comparisons no trials pro-

vided additional treatments in any arms. None of these comparisons showed any significant difference in smoking cessation rates between the hypnotherapy group and the comparison group. Analysis 4.1 included two trials with 54 smokers (Barkley 1977 and Hyman 1986) with no evidence that hypnotherapy was either more or less effective than rapid smoking (RR 1.00, 95% CI 0.43 to 2.33) although with some evidence of heterogeneity ($I^2 = 65\%$). There was only one trial in comparisons 5 and 6 (Fee 1977 for both, RR 1.02, 95% CI 0.31 to 3.33 and RR 0.83, 95% CI 0.27 to 2.58 respectively).

Hypnotherapy as an adjunct to other cessation interventions

The last comparison (Analysis 7.1) included four trials that compared hypnotherapy in combination with other treatments, against the other treatments alone. The trials have been divided into subgroups depending on the categories of other treatments. There was too much evidence of heterogeneity to pool all studies ($I^2 = 75\%$). Analysis 7.1.1 included a single trial with only 20 smokers (Elkins 2006) which compared multisession hypnotherapy plus self help materials and phone calls to materials and calls alone. No one quit

smoking in the attention/advice alone group, and the CI was very wide (RR 9.00; 95% CI 0.55 to 147.95). [Analysis 7.1.2](#) included two trials with 65 smokers ([Pederson 1975](#) and [Pederson 1979](#)); pooling these indicated a benefit of a hypnotherapy session as an adjunct to counselling although the estimate was not very precise (RR 4.80, 95% CI 1.71 to 13.49, $I^2 = 40\%$). [Analysis 7.1.3](#) included a single trial with 44 smokers ([Pederson 1980](#)) that compared hypnotherapy combined with psychological treatments and rapid smoking treatments against a combination of psychological and rapid smoking treatments (RR 0.91; 95% CI 0.42 to 1.99), which did not detect any benefit of the addition of the hypnotherapy component.

DISCUSSION

The eleven studies in this review do not demonstrate clear evidence of a greater long-term benefit of hypnotherapy compared to other interventions, or no intervention. Most studies did not detect significant differences in quit rates at six months or longer. Studies were very diverse so could not be combined in a single meta-analysis. Pooling small groups of relatively comparable studies did not provide any additional evidence for a specific effect of hypnotherapy. Those studies which did find higher quit rates compared to controls were small, and had methodological weaknesses. Most studies were conducted before the improvements in the standard of study design and reporting for smoking cessation trials seen in the 1990s. Biochemical validation of self-reported quitting was only used in the two most recent studies. If hypnotherapy can increase the likelihood of quitting compared to no intervention or brief advice, it may be due to non-specific factors such as extended contact with a therapist. The absence of a suitable placebo for hypnotherapy to control for the non-specific effects makes evaluation difficult. One trial by Pederson and colleagues ([Pederson 1979](#)) did include two arms intended to investigate the non-specific elements of hypnotherapy. One arm received a hypnosis session which was presented as an aid to relaxation, and the other controlled for the therapist presence by using a video presentation for the hypnotherapy session. These both had lower quit rates, similar to the counselling alone control.

When hypnosis is compared with other interventions involving therapist contact, group contact or other support, there is no evidence that it is more successful. One problem with these 'head to head' comparisons is that the evidence for the efficacy of some other behavioural interventions is equally difficult to evaluate. A Cochrane review of aversive smoking ([Hajek 2001](#)) concluded that methodological problems in the trials made it impossible to show whether the technique was effective.

This update includes two new trials. One of these, with 281 participants, increases the amount of available supportive evidence considerably ([Carmody 2008](#)). In this study both intervention and control groups received nicotine patches, and the hypnotherapy component was compared to behavioural counselling, an effective cessation intervention ([Lancaster 2005](#)). Both treatment conditions provided two hours of face-to-face contact and three follow-up phone calls. There were no significant differences between the conditions at any follow-up point but at six and 12 months the quit rate was higher in the hypnosis group. Since the control group received an effective intervention, the absence of a significant difference might be interpreted as evidence of equivalence, although the confidence intervals do not rule out the possibility that hypnotherapy was more, or less, effective than standard counselling. The other study ([Elkins 2006](#)) was a pilot study, so although the intervention of eight sessions of hypnotherapy and self-help materials had more quitters than self-help alone, numbers were too small to provide clear evidence.

The highly significant treatment effects of hypnotherapy on smoking cessation claimed by past uncontrolled studies (e.g. [Dedenroth 1968](#)) cannot be confirmed from analysis of randomized controlled trials. Although many therapists offer hypnotherapy for smoking cessation and it continues to be a popular choice amongst smokers seeking treatment there is recognition that the success rates quoted by practitioners are likely to be exaggerated ([Handel 2010](#); [Yager 2010](#)). Encouraging results reported in uncontrolled studies may be due to the motivation of those presenting for treatment, or may not reflect likely long-term success or drop-out rates.

AUTHORS' CONCLUSIONS

Implications for practice

There is insufficient evidence to recommend hypnotherapy as a specific treatment for smoking cessation.

Implications for research

Since hypnotherapy is regularly suggested as a possible aid to smoking cessation there is a need for large trials to establish its efficacy. The type of hypnotherapy used needs to be clearly defined and described. Comparison needs to be made with active interventions, preferably matching for therapist contact time.

ACKNOWLEDGEMENTS

We acknowledge the important contributions of three previous authors of this review; Neil Abbot initiated the review in 1998 and was first author until 2010. Edzard Ernst was an author until 2001 and Adrian White until 2010.

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* Indicates the major publication for the study

CHARACTERISTICS OF STUDIES

Characteristics of included studies [ordered by study ID]

Barkley 1977

| | |
|---------------|--|
| Methods | Site: USA, Bowling Green State University, Ohio Study period: not stated Recruitment: advertisements distributed in the university community Sample size calculation: not mentioned |
| Participants | Number of participants: 36 smokers (12 in each group) Inclusion criteria: not stated Exclusion criteria: those not able to meet demands of procedures including scheduling of treatment sessions, random assignment to groups, data collection, deposit requirements, etc. Overall demographics: primarily students and university affiliated persons, all of whom were young adults; 42% female. |
| Interventions | a) rapid smoking (based on a modified version of that reported by Keutzer 1968) b) group hypnosis (hypnotic suggestions were the same as those reported by Hall and Crasilneck 1970) c) attention placebo (watch films, receiving and discussing handouts on the topic, discussion of problems they might be experiencing in quitting smoking) All treatments: 7 x 1-hr sessions over 2 wks; first and last 15 mins spent discussing problems with quitting smoking, while 30 mins in the middle spent in treatment procedures. |
| Outcomes | Definition of smoking cessation: point-prevalence abstinence at 9-month follow up. Adverse events: none reported |
| Notes | Funding: partly supported by Department of Psychology, Bowling Green State University, fund. Comparisons: b) vs c) in comparison 2, hypnotherapy vs brief attention/advice, b) vs a) in comparison 4, hypnotherapy vs rapid smoking. |

Risk of bias

| Item | Authors' judgement | Description |
|--|--------------------|--|
| Adequate sequence generation? | Unclear | Randomized, method not stated, possibly stratified by gender. |
| Allocation concealment? | Unclear | No details given |
| Blinding? All outcomes | Unclear | Providers: not possible; subjects: not possible; assessors: not stated |
| Incomplete outcome data addressed? All outcomes | Yes | 7 participants missed at least one treatment session: (a) 0; (b) 4; (c) 3; not included in |

Barkley 1977 (Continued)

| | | |
|-------------------------------------|---------|---|
| | | the original analysis, but included in our recalculations, following ITT analyses with missing assumed smoking. |
| Free of selective reporting? | Yes | All outcomes reported as described in the methods section. |
| Verification of smoking cessation? | No | Telephone self report. |
| Free of extreme baseline imbalance? | Unclear | Proportion of males to females was kept constant across all groups; no other information provided. |

Carmody 2008

| | |
|---------------|---|
| Methods | Site: USA, San Francisco Veterans Affairs Medical Center Study period: September 2001-December 2003 Recruitment: participants enrolled from the medical centre, referral practice to the medical centre is unknown Sample size calculation: not mentioned |
| Participants | Number of participants: 286 smokers (hypnosis+NP: 145; behaviour+NP:141) Inclusion criteria: current smokers interested in quitting (Stages of Change model, contemplation or action stage of quitting) and reported smoking ≥ 10 CPD during the pre-enrolment week Exclusion criteria: NRT contraindication Overall demographics: predominantly unmarried, white, middle-aged; smoked 20 CPD on average. |
| Interventions | a) hypnosis (training based on Spiegel (1994), Lynn et al. (1993), Green (1996, 1999) and Gorassini and Spanos (1986) + audiotape of hypnosis training to use daily at home) b) behavioural counselling based on social learning theory & Stages of Change model Both groups received 2 x 60 mins face-to-face sessions + 3 x 20 mins follow-up telephone counselling calls at weeks 3, 4 & 6 + 2 months supply of nicotine patch (initial dose: 21 or 14 mg) Duration of intervention: 2 months |
| Outcomes | Definition of smoking cessation: point-prevalence abstinence (defined as no smoking, not even a puff, for 7 days) at telephone follow-up at 6 and 12 m Adverse events: none reported |
| Notes | Funding: California Tobacco-Related Diseases Research Program. The funding agency had no role in the conduct of the research or preparation of the manuscript. Comparisons: a) vs b) in comparison 3, hypnotherapy vs psychological treatment, 12 m outcome |

Risk of bias

Carmody 2008 (Continued)

| Item | Authors' judgement | Description |
|--|--------------------|--|
| Adequate sequence generation? | Yes | Randomized, using computer-generated algorithm (SPSS, V.15) (info from author) |
| Allocation concealment? | Yes | Subject numbers and the corresponding treatment assignments in sequentially numbered and sealed opaque envelopes. As each subject enrolled in the study, the study coordinator supplied their counsellor with the envelope to open at the start of the first counselling session (info from author). |
| Blinding? All outcomes | Yes | Providers: not possible; subjects: not possible; assessors: the research associates who telephoned subjects for study follow-up assessments were not blinded to their treatment condition, but biochemical confirmation of quitting was done by lab personnel blinded to treatment assignment. |
| Incomplete outcome data addressed? All outcomes | Yes | At 6 months: a) Hypnosis: drop-out: 4; withdrew: 1; died: 1; lost to follow-up: 7 b) Behaviour: drop-out: 12, withdrew: 1; lost to follow-up: 4 At 12 months (cumulative): a) Hypnosis: drop-out: 4; withdrew: 1; died: 4; lost to follow-up: 11 b) Behaviour: drop-out: 12; withdrew: 2; died: 1; lost to follow-up: 5 Lost to follow-up and withdrawn participants were included in the original analysis, with the imputation of being smokers at the endpoints, but drop-out patients were not included in the original analysis. Behaviour group drop-out rate was 3 x that for hypnosis group. We included all patients, except those who died, in our recalculations for ITT analyses (missing assumed smoking). |
| Free of selective reporting? | Yes | All outcomes reported as described in the methods section. |
| Verification of smoking cessation? | Yes | All self-reported successes validated by saliva cotinine level (≤ 15 ng/ml) or spousal proxy (6 hypnosis & 5 control at |

Carmody 2008 (Continued)

| | | |
|-------------------------------------|-----|---|
| | | 12 m). |
| Free of extreme baseline imbalance? | Yes | All important baseline demographics by groups were reported and there were no major concerns. |

Elkins 2006

| | |
|---------------|--|
| Methods | Site: USA, Most authors worked for Scott and White Memorial Hospital and Clinic, Temple, Texas Study period: not stated Recruitment: physician referral and advertisements Sample size calculation: not mentioned (Pilot study) |
| Participants | Number of participants: 20 smokers (number in group not specified, no response from author. Assumed 10/group in analysis) Inclusion criteria: at least 18 yrs, smoking ≥ 10 CPD, interested in quitting smoking in the next 30 days, able to attend weekly sessions, spoke English. Exclusion criteria: regular use of any non-cigarette tobacco product, reported current abuse of alcohol or psychoactive drugs, current use of any other smoking-cessation treatments, any reported history of borderline personality disorder, or currently using hypnotherapy for any reason. Overall demographics: average age early to mid-40s, majority female, Caucasian, married, high school education; > 20 CPD; Fagerstrom score of slightly >10. |
| Interventions | a) Intensive hypnotherapy - 8 x 1hr sessions of hypnotherapy (9 steps hypnotic induction) + self-hypnosis tape for daily practice b) Waiting-list control Both groups: National Cancer institute self-help materials, encouraged to set TQD, 3 x 5-10 mins supportive phone calls at weeks 2, 4 & 5 Duration of intervention: approx. 2 months |
| Outcomes | Definition of smoking cessation: 7-day point-prevalence abstinence at week 26 Adverse events: none reported |
| Notes | Funding: not stated Comparisons: a) vs b) in comparison 7, hypnotherapy + other treatment vs other treatment alone. |

Risk of bias

| Item | Authors' judgement | Description |
|-------------------------------|--------------------|-------------------------------|
| Adequate sequence generation? | Unclear | Randomized, method not stated |
| Allocation concealment? | Unclear | No details given |

Elkins 2006 (Continued)

| | | |
|--|---------|---|
| Blinding? All outcomes | Unclear | Providers: not possible; subject: not possible; assessors: not stated |
| Incomplete outcome data addressed? All outcomes | No | ITT analysis with participants unavailable for assessment counted as non-abstainers, but no data on drop-out rates. |
| Free of selective reporting? | Yes | All outcomes reported as described in the methods section. |
| Verification of smoking cessation? | Yes | CO 8ppm or less at each visit. If CO value greater than 8ppm, saliva cotinine had to be less than 20 ng/mL. |
| Free of extreme baseline imbalance? | Unclear | Only percentages are given, not numbers. |

Fee 1977

| | |
|---------------|---|
| Methods | Site: UK, an anti-smoking clinic in Tayside, Scotland Study period: 1970-1972 Recruitment: personal application or hospital or GP referral Sample size calculation: not mentioned |
| Participants | Number of participants: 232 smokers (hypnosis: 57; aversion: 60; fenfluramine: 58; placebo: 57) Inclusion criteria: not stated Exclusion criteria: not stated Overall demographics: no information reported |
| Interventions | a) Individual hypnosis b) Aversion therapy (covert sensitisation) c) Fenfluramine d) Placebo There was a standard 9-week course treatment for all intervention groups. Number and duration of sessions not stated; treatment method details not provided. |
| Outcomes | Definition of smoking cessation: point-prevalence abstinence at 12 m Adverse events: none reported |
| Notes | Funding: not stated Comparisons: a) vs b) in comparison 3, hypnotherapy compared to psychological treatment; a) vs c) in comparison 5, vs drug, a) vs c) in comparison 7, vs placebo |

Risk of bias

| Item | Authors' judgement | Description |
|------|--------------------|-------------|
|------|--------------------|-------------|

Fee 1977 (Continued)

| | | |
|--|---------|---|
| Adequate sequence generation? | Unclear | Randomized, method not stated |
| Allocation concealment? | Unclear | No details given |
| Blinding? All outcomes | Unclear | Providers: not stated; subjects: not stated; assessors: not stated |
| Incomplete outcome data addressed? All outcomes | Yes | Participants who did not complete treatment were excluded from the original analysis: a) 19 (33%); b) 23 (38%); c) 32 (55.2%) and d) 33 (58%). There were more treatment drop-outs in "fenfluramine" and "placebo" groups than the other two treatment groups. We included all participants in our recalculations following protocol for ITT analysis. Those with missing data were assumed to be smoking. |
| Free of selective reporting? | Yes | All outcomes reported as described in the methods section. |
| Verification of smoking cessation? | No | Self-reported |
| Free of extreme baseline imbalance? | Unclear | No information reported |

Hyman 1986

| | |
|---------------|---|
| Methods | Setting: Australia, site not described Study period: not stated Recruitment: half the number of subjects referred through public hospital, other half responded to newspaper advertisement Sample size calculation: none |
| Participants | Number of participants: 60 smokers (15 in each group) Inclusion criteria: not stated. Exclusion criteria: not stated Overall demographics: 28% male, mean age 34.9 years, smoked an average of 29.9 CPD; 13% having made no prior attempt to stop smoking. |
| Interventions | a) Hypnosis (Weitzenhoffer & Hilgard induction method, modified Spiegel treatment) b) Focused smoking (approx. 15 mins focused smoking practices, 3 times during each session, based on Hackett & Horan 1978) c) Attention placebo (discussed topics of concern to the subject) d) Waiting list control (wait-list of 3 months with no contact, but they were offered treatment after this time if they so wished) Duration of intervention: groups a), b) and c) were seen individually for 1hr, once a week for 4 weeks. Duration of follow-up: 6 months |

Hyman 1986 (Continued)

| | | |
|--|--|---|
| Outcomes | Definition of smoking cessation: point-prevalence abstinence at six months. Adverse events: none reported | |
| Notes | Funding: not stated Comparisons: a) vs c) in comparison 2, hypnotherapy vs attention/advice, a) vs b) in comparison 4, hypnotherapy vs rapid/focused smoking. (Waiting list control group followed up for 3 months then offered treatment, so not used in a comparison) Additional notes: Subjects expected to abstain after first hypnosis session but received all four sessions whether they had successfully abstained or not. | |
| Risk of bias | | |
| Item | Authors' judgement | Description |
| Adequate sequence generation? | Unclear | Randomized, method not stated |
| Allocation concealment? | Unclear | No details given |
| Blinding? All outcomes | No | Providers: not possible; subjects: not possible; assessors: No, because all treatment and assessment was completed by the same therapist. |
| Incomplete outcome data addressed? All outcomes | Yes | Number lost to follow-up in groups at 6 months: a) 1; b) 3; c) 2. They were considered to be smoking and included for analysis. |
| Free of selective reporting? | Yes | All outcomes reported as described in the methods section. |
| Verification of smoking cessation? | No | No validation at 6 months (self-reported by postal questionnaire) but serum thiocyanate measured at 3 months. |
| Free of extreme baseline imbalance? | Yes | No statistically significant difference between the groups in age and estimated and monitored smoking rate. |

Lambe 1986

| | |
|---------------|--|
| Methods | <p>Site: USA, Family Medicine Center (FMC); patient population was representative of cross-section of Monroe County, New York</p> <p>Study period: not stated</p> <p>Recruitment: patients attending FMC for scheduled health care screened for eligibility</p> <p>Sample size calculation: 180 participants needed for 90% power. Assumed effectiveness of advice alone 5%, hypnosis 20% effective; allowed for 10% dropout ; one-tailed alpha error of 0.05</p> |
| Participants | <p>Number of participants: 180 smokers (90 in each group)</p> <p>Inclusion criteria: wish to quit smoking and willing to undergo hypnosis</p> <p>Exclusion criteria: aged < 18 years; psychiatric diagnosis.</p> <p>Overall demographics: mean age approx. 35 years; majority female; mean CPD approx. 26</p> |
| Interventions | <p>a) Hypnosis (2 x 40min sessions (probably individual), 2 weeks apart. Instructions for autohypnosis; for those who accepted hypnosis treatment only)</p> <p>b) Cessation advice control (letter from physicians advising quitting, copy of 'Calling It Quits' booklet)</p> <p>All subjects received 3 telephone calls in first 4 months to offer encouragement and ascertain smoking behaviour.</p> <p>Duration of intervention: 4 months</p> <p>Duration of follow-up: 12 months</p> |
| Outcomes | <p>Definition of smoking cessation: point-prevalence abstinence at 6 and 12 months.</p> <p>Adverse events: none reported</p> |
| Notes | <p>Funding: not stated</p> <p>Comparisons: a) vs b) in comparison 2, hypnotherapy vs attention/advice, 12 m outcomes.</p> |

Risk of bias

| Item | Authors' judgement | Description |
|--|---------------------------|--|
| Adequate sequence generation? | Unclear | Randomized, method not stated, but Zelen design (18 subjects declined hypnosis but analysed in hypnosis group). |
| Allocation concealment? | Unclear | No details given |
| Blinding? All outcomes | Unclear | Providers: not possible; subject: not possible; assessors: not stated |
| Incomplete outcome data addressed? All outcomes | Yes | <p>Lost to follow-up: At 6 m: a) 24; b) 26; At 12 m: a) 30; b) 30</p> <p>Only patients who could be contacted at each follow-up period included in the original analysis. About the same number of patients lost to follow-up across groups at 6</p> |

Lambe 1986 (Continued)

| | | |
|-------------------------------------|-----|--|
| | | and 12 month follow-up. Numbers of quitters derived from percentages, corrected for drop-outs. Recalculations included all participants following ITT protocol; missing assumed smoking. |
| Free of selective reporting? | Yes | All outcomes reported as described in the methods section. |
| Verification of smoking cessation? | No | Self-reported (telephone or questionnaire) |
| Free of extreme baseline imbalance? | No | Patients in hypnosis group tended to be younger, more educated, less likely to have Medicaid, less likely to have other smokers at home, but more likely to have other smokers at work. |

Pederson 1975

| | |
|---------------|--|
| Methods | Country: Canada Study sites: not stated; study period: not stated Recruitment: community volunteers Sample size calculation: not mentioned |
| Participants | Number of participants: 48 smokers (16 in each group) Inclusion criteria: not stated. Exclusion criteria: not stated. Overall demographics: 50% male; mean age: 37.9; mean years smoked: 17.25 and mean baseline smoking rate: 25.37 CPD |
| Interventions | a) Waiting list control (contacted by telephone at 1, 3 and 10 months) [Not used in analyses] b) Counselling (discussions about quitting techniques) c) Hypnosis and counselling (same discussion sessions and one 1.5hr session of group hypnosis of simple relaxation techniques and benefit of quitting) Both groups b) and c) received 6 weekly group counselling sessions followed by 6 monthly meetings Duration of intervention: approximately 7.5 months Duration of follow-up: 10 months |
| Outcomes | Definition of smoking cessation: abstinence for at least 3 months at 10-month follow up. Adverse events: none reported |
| Notes | Funding: Ontario Thoracic Society Comparison: c) vs b) in comparison 7, hypnosis plus other therapy vs other therapy alone. a) does not now contribute to any comparison because hypnosis was confounded with counselling. Additional notes: This study and Pederson 1979, Pederson 1980 were undertaken by |

Pederson 1975 (Continued)

| | same authors and funded by the same party. | |
|--|--|--|
| Risk of bias | | |
| Item | Authors' judgement | Description |
| Adequate sequence generation? | Unclear | Randomized, method not stated |
| Allocation concealment? | Unclear | No details given |
| Blinding? All outcomes | Unclear | Providers: not possible; subjects: not possible; assessors: not stated |
| Incomplete outcome data addressed? All outcomes | Unclear | All subjects were included in the analysis, but it is unclear whether no one was lost to follow up, or the authors made some imputation to the missing outcome data. |
| Free of selective reporting? | Yes | All outcomes reported as planned in the methods section. |
| Verification of smoking cessation? | No | Self-reported over the telephone |
| Free of extreme baseline imbalance? | Yes | Equal number of males and females in each group; no reported difference at baseline with regard to age, years smoked and smoking rate; but averages and standard deviations by groups not given. |

Pederson 1979

| | |
|---------------|---|
| Methods | Country: Canada Study sites: not stated; Study period: not stated Recruitment: Community volunteers Sample size calculation: not mentioned |
| Participants | Number of participants: 65 smokers (17 in live-hypnosis group and 16 each for other groups) Inclusion criteria: not stated. exclusion criteria: not stated. Overall demographics: mean age: 41.7; mean years smoked: 23.2; mean base line smoking: 28.2 CPD. All participants had quit smoking at least once prior to participation; range of abstinence varied from < day to > 1 year. |
| Interventions | a) Live hypnosis and counselling b) Videotape hypnosis and counselling c) Relaxation hypnosis (no mention of smoking) and counselling d) Counselling alone All groups received 6 x weekly sessions followed by 3 x monthly sessions of group coun- |

Pederson 1979 (Continued)

| | |
|----------|--|
| | <p>selling with presentation and discussion of various techniques which could be employed for quitting. The hypnosis session for groups a), b) and c) occurred at the third weekly session</p> <p>Duration of intervention: approximately 4.5 months</p> <p>Duration of follow-up: 6 months</p> |
| Outcomes | <p>Definition of smoking cessation: no smoking for at least 3 months at 6 months post-treatment.</p> <p>Adverse events: none reported</p> |
| Notes | <p>Funding: Ontario Thoracic Society</p> <p>Comparisons: a) vs c) in comparison 2.1.2, hypnotherapy plus psychological treatment vs brief attention/ advice plus psychological treatment: a) vs d) in comparison 7, hypnotherapy plus other therapy vs other therapy alone;</p> <p>Additional notes: this study, Pederson 1975 & Pederson 1980 were undertaken by same authors and funded by the same party.</p> |

Risk of bias

| Item | Authors' judgement | Description |
|--|--------------------|---|
| Adequate sequence generation? | Unclear | Randomized, method not stated |
| Allocation concealment? | Unclear | No details given |
| Blinding? All outcomes | Unclear | Providers: not possible; subjects: not stated (it was possible to blind subjects in the 3 different hypnosis groups); assessors: not stated |
| Incomplete outcome data addressed? All outcomes | Unclear | The author stated that "after the hypnosis session (3rd weekly session), the attendance for the live-hypnosis plus counselling group remained at 75% to 100%, while the attendance of the remaining three groups dropped to about 50%". All participants were included in the analysis; no specific information regarding subjects lost to follow up. |
| Free of selective reporting? | Yes | All outcomes reported as described in the methods section. |
| Verification of smoking cessation? | No | Self-reported over the telephone |
| Free of extreme baseline imbalance? | Yes | Approximately equal gender distribution in each group; "...the groups did not differ statistically in any of the smoking history or demographic variables which were ob- |

Pederson 1979 (Continued)

| | | |
|--|--|-------------------------------------|
| | | tained”; but raw data not reported. |
|--|--|-------------------------------------|

Pederson 1980

| | |
|---------------|--|
| Methods | Country: Canada Study sites: Victoria Hospital, London, Ontario, Canada Study period: January to August 1976 Recruitment: Community volunteers Sample size calculation: not mentioned |
| Participants | Number of participants: 66 smokers (37 in rapid smoking+hypnosis+counselling group; 29 in rapid smoking+counselling group) Inclusion criteria: not stated. Exclusion criteria: not stated. Overall demographics: 45 women (68.2%). Mean age 36; mean years smoked 18; mean baseline smoking rate 26 CPD. All volunteers had quit smoking at least once prior to participation, range of abstinence varied from less than a day to over a year. |
| Interventions | a) Rapid smoking & hypnosis (1x 1.5 hour session consisted of a presentation of reasons for quitting, benefits of continuing abstinence and techniques for coping with withdrawal) & counselling b) Rapid smoking & counselling All groups: 6 weekly followed by 3 monthly counselling sessions. Rapid smoking and hypnosis sessions occurred at the third and fourth weekly sessions, respectively. Note: Rapid smoking session was only done for those participants who were allowed to do the session after medical screening: a) 23 out of 37; b) 21 out of 29 Duration of intervention: approx. 4.5 months Duration of follow-up: 6 months |
| Outcomes | Definition of smoking cessation: did not smoke a cigarette for at least 3 months at 6 month follow up. Adverse events: none reported |
| Notes | Funding: Ontario Thoracic Society Comparisons: a) vs b) in comparison 7.1.3, Hypnotherapy + psychological treatments + rapid smoking vs psychological treatments + rapid smoking Additional notes: this study, Pederson 1975 & Pederson 1979 were undertaken by same authors and funded by the same party. |

Risk of bias

| Item | Authors' judgement | Description |
|-------------------------------|--------------------|-------------------------------|
| Adequate sequence generation? | Unclear | Randomized, method not stated |
| Allocation concealment? | Unclear | No details given |

Pederson 1980 (Continued)

| | | |
|--|---------|---|
| Blinding? All outcomes | Unclear | Providers: medical personnel screening at initial appointments blinded (however, not possible to blind one provider who was present at all intervention sessions); subjects: not possible; assessors: not stated |
| Incomplete outcome data addressed? All outcomes | Unclear | Subjects who could not participate in rapid smoking (a:14; b: 8) were not included in the analysis. Those subjects were not eligible for the study (so they should not be recruited to the study in the first place). As in the other 2 Pederson papers, all remaining subjects were included in the analysis and the authors did not report if any were lost to follow-up. |
| Free of selective reporting? | Yes | All outcomes reported as described in the methods section. |
| Verification of smoking cessation? | No | Self-reported by telephone contact |
| Free of extreme baseline imbalance? | Yes | Approx. equal number of males & females in each group; author stated that the groups did not differ significantly in any of the smoking history or demographic variables, but raw data not reported. |

Rabkin 1984

| | |
|---------------|--|
| Methods | Country: Canada Study sites: not stated; Study period: not stated Recruitment: via media (radio and newspaper, etc), all participants had enrolled with the promise of a “meaningful” cigarette smoking intervention programme. Sample size calculation: not mentioned |
| Participants | Number of participants: 168 smokers (hypnosis 48; health education 41; behaviour modification 46; control 33) Inclusion criteria: smokers between age 20-65. Exclusion criteria: patients with serious medical problems Overall demographics: average age: 40.4, average of 24.3 CPD |
| Interventions | a) Hypnosis - 1 x 30 minutes one-to-one basis hypnosis session (Spiegel’s method and instructions for autohypnosis) + suggested autohypnosis every hour or hour and a half over the next week and whenever necessary b) Behaviour modification - 5 x evening meetings (45-90mins over a 3-week period) on group discussion about smoking behaviours + daily smoking behaviour records for participants to do c) Health education - 1 x health education session followed the format of cessation |

Rabkin 1984 (Continued)

| | | |
|--|---|--|
| | <p>programs emphasizing the biological effects of smoking and incorporated data on behavioural factors such as perception of risk and efficacy + materials on how to quit (U.S. DHEW, 1979) to take home + participants were asked to written down their reasons to quit on paper to take home and mounted in a conspicuous place + individual meetings in approximate 1 week later of review and counselling</p> <p>d) Waiting list control - delayed treatment group, received behaviour modification treatment 3 weeks after completion of the programmes in treatment groups. No follow-up thereafter.</p> <p>Duration of intervention: 3 weeks.</p> <p>Duration of follow-up: 6 months</p> | |
| Outcomes | <p>Definition of smoking cessation: point prevalence abstinence at 6 month follow up.</p> <p>Adverse events: none reported</p> | |
| Notes | <p>Funding: supported in part by Manitoba Medical Services Foundation and Fellowship award from National Health and Welfare to the first author</p> <p>Comparisons: a) vs c) in comparison 2, hypnotherapy vs attention/advice; a) vs b) in comparison 3, hypnotherapy vs psychological treatment.</p> <p>Additional notes: control group was not used in any comparison since no follow-up at 6 months.</p> | |
| <i>Risk of bias</i> | | |
| Item | Authors' judgement | Description |
| Adequate sequence generation? | Unclear | Randomized, method not stated |
| Allocation concealment? | Unclear | No details given |
| Blinding? All outcomes | Unclear | Providers: not possible; subjects: not possible; assessors: not stated |
| Incomplete outcome data addressed? All outcomes | Yes | Drop-outs: a) 10; b) 8; c) 10. Lost-to follow-up at 6 months: a) 9; b) 4; c) 6. All excluded from the original analysis. Hypnosis group has more patients that lost to follow-up than the other 2 groups. We included all participants in our recalculations following our protocol of intention to treat analyses with missing assumed smoking. |
| Free of selective reporting? | Yes | All outcomes reported as described in the methods section. |
| Verification of smoking cessation? | No | Mailed questionnaire with no validation at 6 months, but serum thiocyanate levels measured post-programme. |

Rabkin 1984 (Continued)

| | | |
|-------------------------------------|-----|--|
| Free of extreme baseline imbalance? | Yes | No statistically significant differences; although smaller proportion of females included in hypnosis group than the other groups. |
|-------------------------------------|-----|--|

Williams 1988

| | |
|---------------|--|
| Methods | Country: USA Study sites: not stated; Study period: not stated. Recruitment: via the newsletters of three manufacturers in Northeastern Pennsylvania, USA Sample size calculation: not mentioned |
| Participants | Number of participants: 60 smokers (20 in each group). Inclusion criteria: smokers who had attended at least one other smoking cessation programme, and who worked for one of 3 companies. Exclusion criteria: not stated. Overall demographics: 31 males (51.7%), ages 21-58, smoked an average of 36.4 CPD over an average of 5.32 yrs and had attended at least one other smoking cessation program. |
| Interventions | a) Hypnosis - single 2.5hr group session using an adaptation of Spiegel (1970) and Stanton (1978) procedure. There were two 45 min hypnosis trials, followed by a 45 min question period to help subjects understand procedure, alleviate misconceptions and clarify self-monitoring procedure + post-hypnotic suggestion to take away b) Placebo control - single 2.5hr group discussion of reasons for smoking and attempts to quit c) No treatment control - received instructions on self monitoring and 12 month waiting list Duration of intervention: 2.5 hours Duration of follow-up: 48 weeks (12 months) |
| Outcomes | Definition of smoking cessation: point prevalence abstinence at 48 weeks Adverse events: none reported |
| Notes | Funding: participants were told that their companies were sponsoring the programme in the interest of employees' health Comparisons: a) vs c) in comparison 1, hypnotherapy vs no treatment. a) vs b) in comparison 2, hypnotherapy vs attention/advice. |

Risk of bias

| Item | Authors' judgement | Description |
|-------------------------------|--------------------|-------------------------------|
| Adequate sequence generation? | Unclear | Randomized, method not stated |
| Allocation concealment? | Unclear | No details given |

Williams 1988 (Continued)

| | | |
|--|---------|--|
| Blinding? All outcomes | Unclear | Providers: not possible; subjects: not possible; assessors: not stated |
| Incomplete outcome data addressed? All outcomes | Yes | No missing outcome data. |
| Free of selective reporting? | Yes | All outcomes reported as described in the methods section. |
| Verification of smoking cessation? | No | Self-reported by self-monitoring cards |
| Free of extreme baseline imbalance? | Unclear | No data provided |

Characteristics of excluded studies [ordered by study ID]

| Study | Reason for exclusion |
|-----------------|---|
| Ahijevych 2000 | No control group |
| Bastien 1983 | Controlled trial, but not randomized |
| Casmar 2003 | Short follow up (3 months) |
| Cornwell 1981 | Short follow up (2 months). |
| Crasilneck 1968 | No control group. |
| Dedenroth 1968 | No control group. |
| Frank 1986 | All groups received hypnotherapy; trial was to test combining with other support and varying schedules. |
| Green 2006 | This is a meta-analysis. |
| Hasan 2007 | Not a randomized trial (patients were allow to self-select their group). |
| Javel 1980 | Not randomized (consecutive allocation), short follow-up. |
| Johnson 1994 | No control group. |
| Katz 1978 | No control group. |
| MacHovec 1978 | Not stated to be randomized. |
| Owens 1981 | No control group. |

(Continued)

| | |
|----------------|--|
| Perry 1975 | No control group. |
| Perry 1979 | No non hypnotherapy control group, short follow-up (3 months). |
| Richard 2002 | Descriptive report, not a controlled trial. |
| Rodriguez 2007 | Short follow-up (3 months). |
| Schubert 1983 | Short follow up (4 months). |
| Sood 2006 | Not RCT, cross-sectional survey. |
| Spanos 1993 | Short follow up. |
| Spanos 1995 | Short follow up (3 months). |
| Spiegel 1993 | No control group |
| Tindle 2006 | The control group received the same intervention 12 weeks after randomization. |
| Valbo 1995 | Short follow up (4 months). |

DATA AND ANALYSES

Comparison 1. Hypnotherapy vs No treatment

| Outcome or subgroup title | No. of studies | No. of participants | Statistical method | Effect size |
|--|----------------|---------------------|---------------------------------|---------------------|
| 1 smoking cessation at 6m+ follow up | 1 | | Risk Ratio (M-H, Fixed, 95% CI) | Totals not selected |
| 1.1 Hypnotherapy alone vs No treatment | 1 | | Risk Ratio (M-H, Fixed, 95% CI) | Not estimable |

Comparison 2. Hypnotherapy vs Brief attention/ cessation advice

| Outcome or subgroup title | No. of studies | No. of participants | Statistical method | Effect size |
|--|----------------|---------------------|---------------------------------|--------------------|
| 1 smoking cessation at 6m+ follow up | 6 | 396 | Risk Ratio (M-H, Fixed, 95% CI) | 1.56 [1.04, 2.35] |
| 1.1 Hypnotherapy alone vs Brief attention/ advice alone | 5 | 363 | Risk Ratio (M-H, Fixed, 95% CI) | 1.37 [0.89, 2.11] |
| 1.2 Hypnotherapy + Psychological treatments vs Brief attention (relaxation)/ advice + Psychological treatments | 1 | 33 | Risk Ratio (M-H, Fixed, 95% CI) | 4.24 [1.07, 16.70] |

Comparison 3. Hypnotherapy vs Psychological treatment

| Outcome or subgroup title | No. of studies | No. of participants | Statistical method | Effect size |
|--|----------------|---------------------|---------------------------------|-------------------|
| 1 smoking cessation at 6m+ follow up | 3 | 492 | Risk Ratio (M-H, Fixed, 95% CI) | 1.24 [0.81, 1.89] |
| 1.1 Hypnotherapy alone vs Psychological treatments alone | 2 | 211 | Risk Ratio (M-H, Fixed, 95% CI) | 0.93 [0.47, 1.82] |
| 1.2 Hypnotherapy + nicotine patch vs Psychological treatments + nicotine patch | 1 | 281 | Risk Ratio (M-H, Fixed, 95% CI) | 1.49 [0.86, 2.58] |

Comparison 4. Hypnotherapy vs Rapid/Focused smoking

| Outcome or subgroup title | No. of studies | No. of participants | Statistical method | Effect size |
|---|----------------|---------------------|---------------------------------|------------------|
| 1 smoking cessation at 6m+ follow up | 2 | 54 | Risk Ratio (M-H, Fixed, 95% CI) | 1.0 [0.43, 2.33] |
| 1.1 Hypnotherapy alone vs Rapid/Focused smoking alone | 2 | 54 | Risk Ratio (M-H, Fixed, 95% CI) | 1.0 [0.43, 2.33] |

Comparison 5. Hypnotherapy vs Drug

| Outcome or subgroup title | No. of studies | No. of participants | Statistical method | Effect size |
|---------------------------------------|----------------|---------------------|---------------------------------|-------------------|
| 1 smoking cessation at 6m + follow up | 1 | 115 | Risk Ratio (M-H, Fixed, 95% CI) | 1.02 [0.31, 3.33] |
| 1.1 Hypnotherapy alone vs Drug alone | 1 | 115 | Risk Ratio (M-H, Fixed, 95% CI) | 1.02 [0.31, 3.33] |

Comparison 6. Hypnotherapy vs Placebo drug

| Outcome or subgroup title | No. of studies | No. of participants | Statistical method | Effect size |
|--|----------------|---------------------|---------------------------------|-------------------|
| 1 smoking cessation at 6m+ follow up | 1 | 114 | Risk Ratio (M-H, Fixed, 95% CI) | 0.83 [0.27, 2.58] |
| 1.1 Hypnotherapy alone vs Placebo drug alone | 1 | 114 | Risk Ratio (M-H, Fixed, 95% CI) | 0.83 [0.27, 2.58] |

Comparison 7. Hypnotherapy + Other treatments vs Other treatments (other treatments in both arms are identical)

| Outcome or subgroup title | No. of studies | No. of participants | Statistical method | Effect size |
|---|----------------|---------------------|---------------------------------|--------------------|
| 1 smoking cessation at 6m+ follow up | 4 | | Risk Ratio (M-H, Fixed, 95% CI) | Subtotals only |
| 1.1 Hypnotherapy + Brief attention/ advice vs Brief attention/ advice | 1 | 20 | Risk Ratio (M-H, Fixed, 95% CI) | 9.0 [0.55, 147.95] |
| 1.2 Hypnotherapy + Psychological treatments vs Psychological treatments | 2 | 65 | Risk Ratio (M-H, Fixed, 95% CI) | 4.80 [1.71, 13.49] |

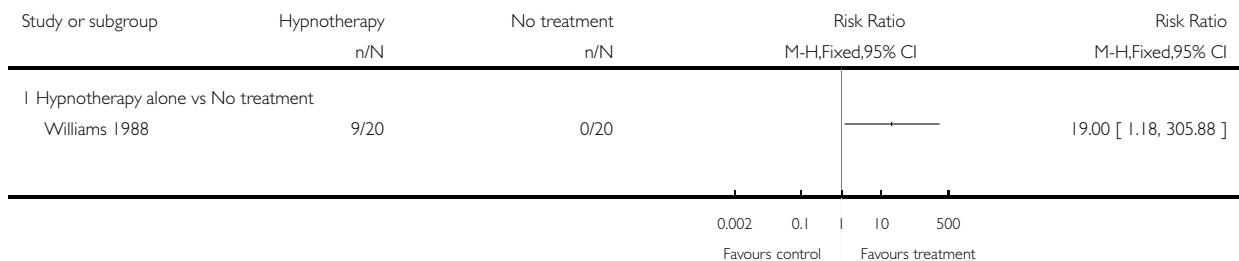
| | | | | |
|---|---|----|---------------------------------|-------------------|
| 1.3 Hypnotherapy + Psychological treatments + Rapid smoking vs Psychological treatments + Rapid smoking | 1 | 44 | Risk Ratio (M-H, Fixed, 95% CI) | 0.34 [0.10, 1.12] |
|---|---|----|---------------------------------|-------------------|

Analysis 1.1. Comparison 1 Hypnotherapy vs No treatment, Outcome 1 smoking cessation at 6m+ follow up.

Review: Hypnotherapy for smoking cessation

Comparison: 1 Hypnotherapy vs No treatment

Outcome: 1 smoking cessation at 6m+ follow up

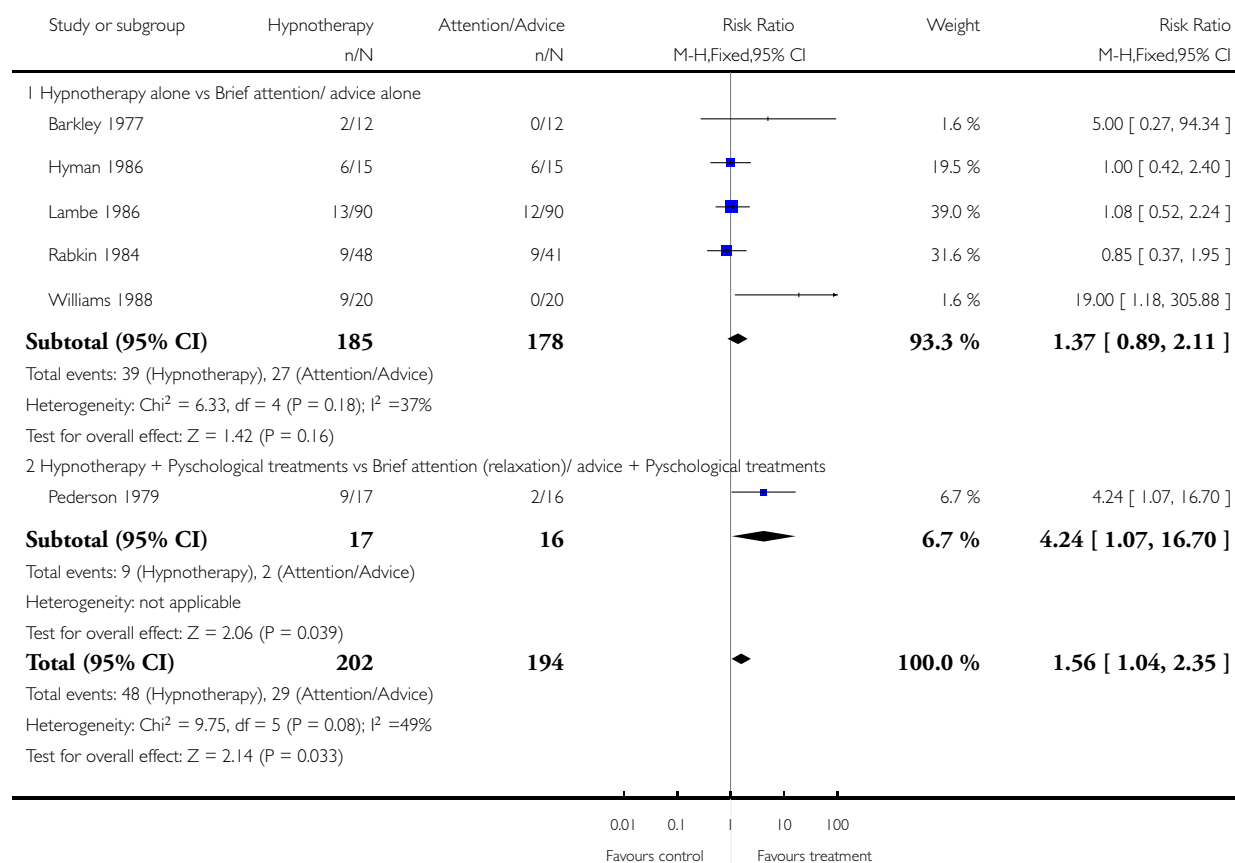


Analysis 2.1. Comparison 2 Hypnotherapy vs Brief attention/ cessation advice, Outcome 1 smoking cessation at 6m+ follow up.

Review: Hypnotherapy for smoking cessation

Comparison: 2 Hypnotherapy vs Brief attention/ cessation advice

Outcome: 1 smoking cessation at 6m+ follow up

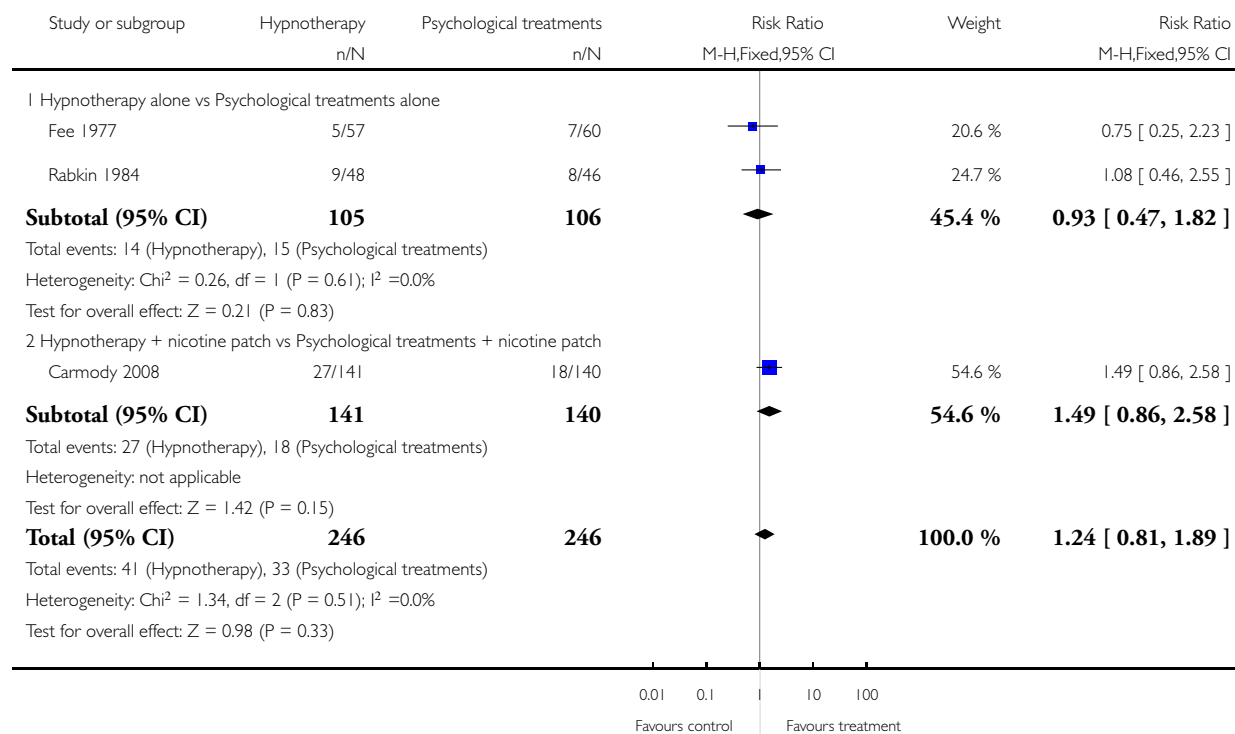


Analysis 3.1. Comparison 3 Hypnotherapy vs Psychological treatment, Outcome 1 smoking cessation at 6m+ follow up.

Review: Hypnotherapy for smoking cessation

Comparison: 3 Hypnotherapy vs Psychological treatment

Outcome: 1 smoking cessation at 6m+ follow up

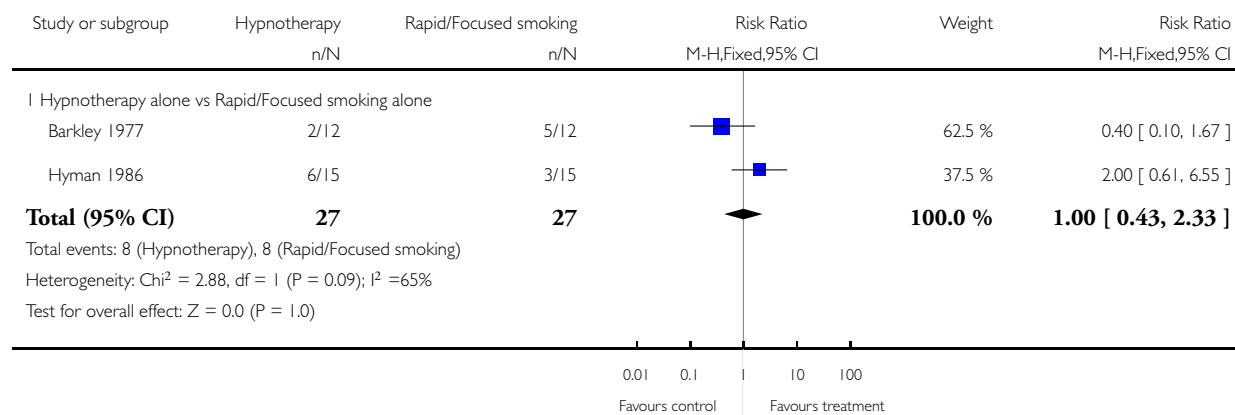


Analysis 4.1. Comparison 4 Hypnotherapy vs Rapid/Focused smoking, Outcome I smoking cessation at 6m+ follow up.

Review: Hypnotherapy for smoking cessation

Comparison: 4 Hypnotherapy vs Rapid/Focused smoking

Outcome: I smoking cessation at 6m+ follow up

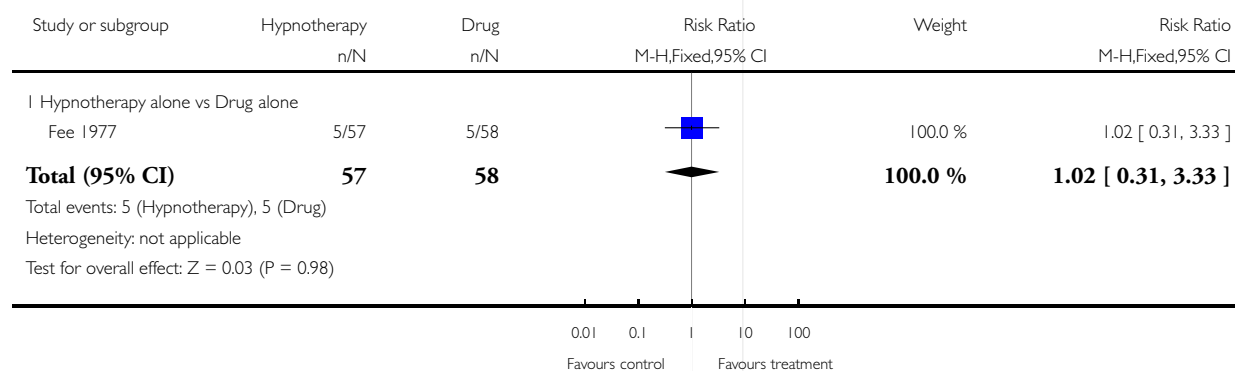


Analysis 5.1. Comparison 5 Hypnotherapy vs Drug, Outcome I smoking cessation at 6m + follow up.

Review: Hypnotherapy for smoking cessation

Comparison: 5 Hypnotherapy vs Drug

Outcome: I smoking cessation at 6m + follow up

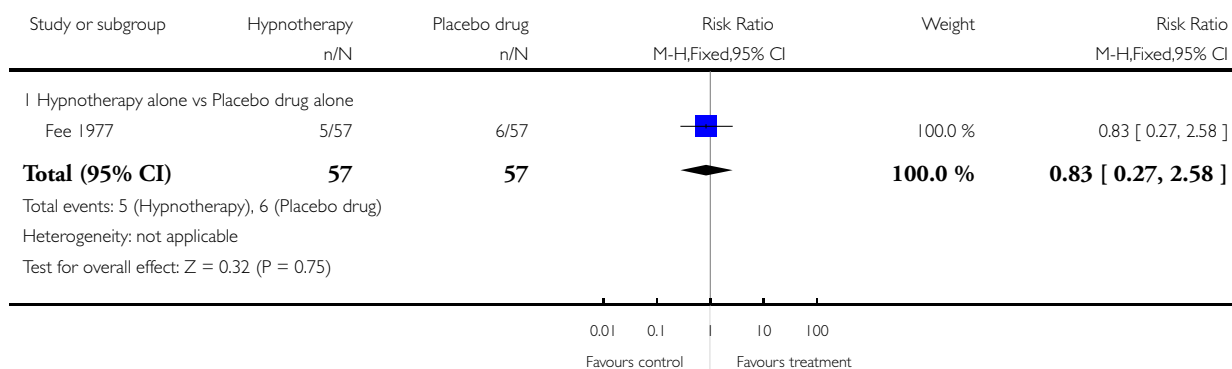


Analysis 6.1. Comparison 6 Hypnotherapy vs Placebo drug, Outcome 1 smoking cessation at 6m+ follow up.

Review: Hypnotherapy for smoking cessation

Comparison: 6 Hypnotherapy vs Placebo drug

Outcome: 1 smoking cessation at 6m+ follow up

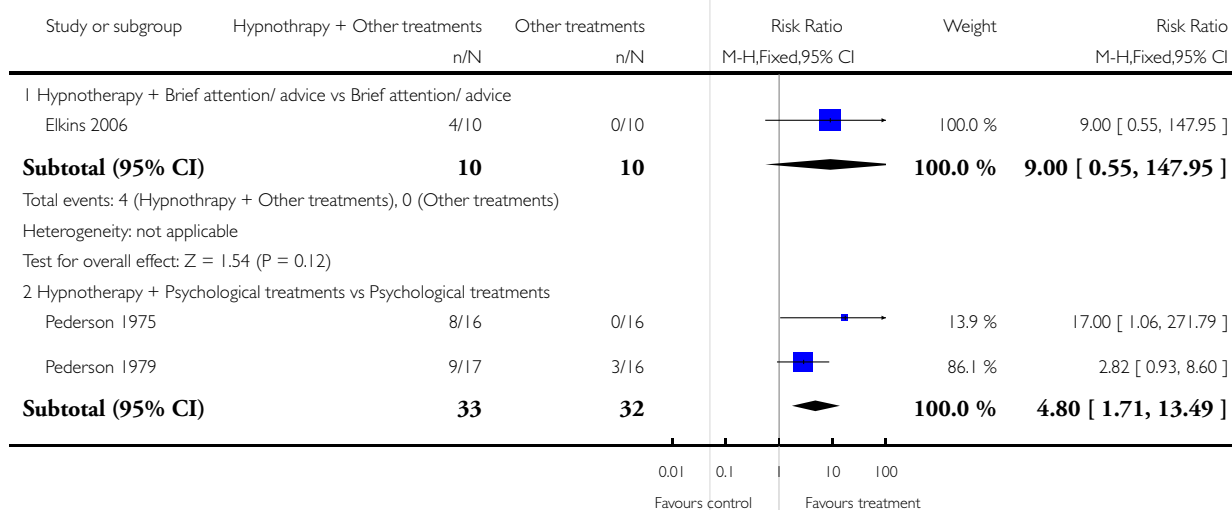


Analysis 7.1. Comparison 7 Hypnotherapy + Other treatments vs Other treatments (other treatments in both arms are identical), Outcome 1 smoking cessation at 6m+ follow up.

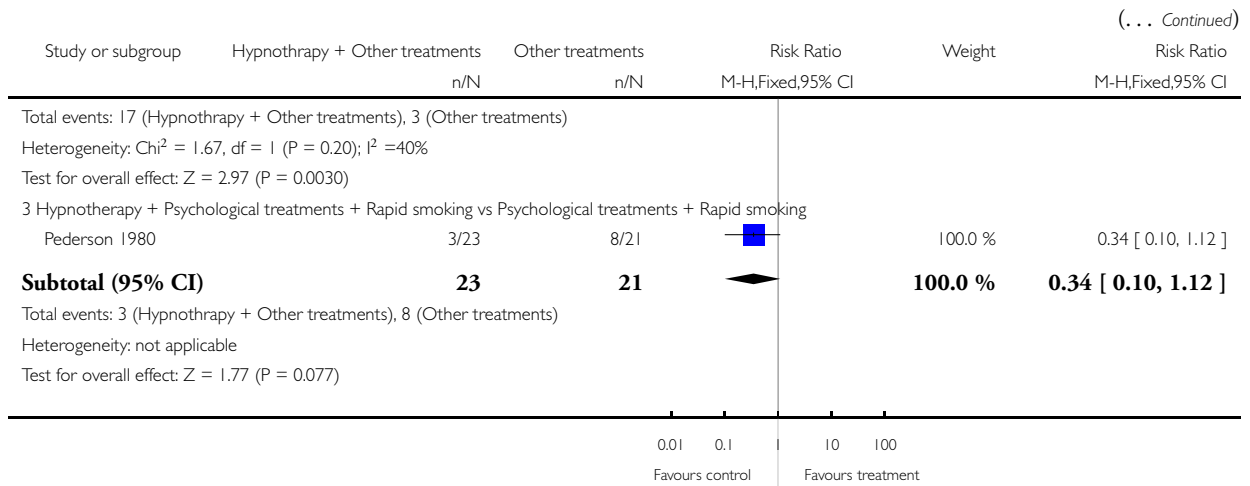
Review: Hypnotherapy for smoking cessation

Comparison: 7 Hypnotherapy + Other treatments vs Other treatments (other treatments in both arms are identical)

Outcome: 1 smoking cessation at 6m+ follow up



(Continued ...)



FEEDBACK

Hypnothrapy versus NRT or bupropion

Summary

The comment asked whether anyone knew of any formal comparisons of hypnothrapy with treatments such as NRT or bupropion

Reply

We know of no randomized controlled trials comparing hypnothrapy with NRT or bupropion (Zyban) but we eagerly await such reports. We agree that it is important to compare different methods of smoking cessation. At the moment, only nine trials have been identified, and overall these have not shown that hypnothrapy has a greater effect on six-month quit rates than other interventions or indeed no treatment. The small number of trials and their heterogeneity mean, however, that the jury is still out, and further data from adequately powered randomized studies is urgently needed.

Contributors

Neil Abbot

Losses to follow up

Summary

The commenter asked whether the estimates changed significantly if those lost to follow up were excluded rather than counted as continuing smokers

Reply

This contribution raises an interesting and important point. The inclusion or otherwise of those lost to follow-up is the concern of intention to treat analysis (ITT) which is comprehensively discussed in Section 8.4 of the Reviewer's handbook (available on the web at <http://www3.interscience.wiley.com/homepages/106568753/handbook.pdf>).

The ideal strategy is to compare the groups exactly as randomised, but if data on some participants are lost for a variety of reasons, this can be impossible. ITT analysis aims to include all participants randomized into a trial irrespective of what happened subsequently. ITT analyses are generally preferred as they are unbiased, and also because they address a more pragmatic and clinically relevant question. It is the view of the Collaboration that ITT analysis delivers the most robust evidence and is to be preferred over less conservative approaches, and it explicitly adopts this approach in its reviews wherever possible.

In the case of smoking cessation, the convention is to treat patients lost to follow-up as continuing smokers. Some people may consider this inappropriate since we may be attributing the continuation of smoking to people who have actually quit. However, first, we are dealing here with randomised trials with a hypnotherapy and a control intervention, and this assumption is made for both the treatment and the control arms of each study, so it is thus unlikely that the use of ITT will adversely affect the treatment arm compared with the control arm. Second, the decision to assume that those lost to follow-up are continuing smokers is based on clinical judgement as to what would be the most likely outcome, and most professionals would agree that this assumption is not unreasonable.

Ideally, we would compute both ways, i.e. assuming that those lost to follow up were, first, continuing smokers and then, second, quitters, and perform a sensitivity analysis. Another option would be to analyse as you have suggested, using only the available data, i.e. excluding losses to follow up. Of the nine included studies in the current review, four only present an ITT analysis with insufficient information to perform an available-data analysis (the Pederson studies and the Williams trial). None of the remaining five studies achieves a statistically significant result by excluding dropouts and those lost to follow up. The main impact of the analysis is to reduce the precision of the estimates by widening the confidence intervals. We continue to abide by the guidance of the Cochrane Collaboration convention, and present the outcomes on an intention to treat basis where possible, as they are currently displayed in the review.

Contributors

Neil Abbott

WHAT'S NEW

Last assessed as up-to-date: 21 July 2010.

| Date | Event | Description |
|--------------|--|---|
| 22 July 2010 | New citation required but conclusions have not changed | Change of authorship: N Abbott & A White removed; H McRobbie, N Walker, M Mehta added. |
| 22 July 2010 | New search has been performed | Updated with two new trials (Elkins 2006, Carmody 2008). Comparisons reorganised. No major change to conclusions. |

HISTORY

Protocol first published: Issue 1, 1998

Review first published: Issue 2, 1998

| Date | Event | Description |
|------------------|-------------------------------|---|
| 19 June 2008 | Amended | Converted to new review format. |
| 22 May 2005 | Amended | Response to Feedback included |
| 16 February 2005 | Amended | Response to Feedback included |
| 16 February 2005 | New search has been performed | Updated for 2005 Issue 2. Four references added to Excluded studies (Bastien 1983, Casmar 2003, Frank 1986, Richard 2002) |
| 5 August 2001 | New search has been performed | Updated for 2001 Issue 4. No new studies identified. |

CONTRIBUTIONS OF AUTHORS

JB became the contact author in 2006. In 2010 CYD, MM, LS & JB contributed to screening studies, data extraction and updating the text. NW and HMCR commented on analyses and text.

DECLARATIONS OF INTEREST

None

SOURCES OF SUPPORT

Internal sources

- University of Dundee, Department of Medicine, UK.
- Department of Primary Health Care, Oxford University, UK.

External sources

- Wellcome Trust, UK.
- NHS Research and Development National Cancer Programme, England, UK.

INDEX TERMS

Medical Subject Headings (MeSH)

*Hypnosis; Smoking [*prevention & control]; Smoking Cessation [*methods]

MeSH check words

Humans