

## Smoking cessation: integrating recent advances into clinical practice

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### Abstract

**Smoking remains a prevalent habit with serious consequences for public health. There are now effective treatments for nicotine addiction and, in the UK, specialist services for the treatment of smoking cessation are becoming available in all areas. This paper reviews the role of treatments for nicotine addiction in the management of smoking cessation. Recommendations are made for the judicious use of these therapies and also for the rational use of the new UK smoking cessation services.**

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Smoking remains an enormous public health problem throughout the world, contributing significantly to the burden of respiratory illness.<sup>1</sup> The nicotine contained in cigarette smoke is fiercely addictive,<sup>2</sup> making smoking cessation difficult to achieve even though the majority of smokers want to stop smoking.<sup>3</sup> Recently, however, there have been a number of developments in the field of nicotine addiction which make it timely to review how doctors can best help their patients to stop smoking. Firstly, treatments for nicotine addiction are becoming more widely available. Bupropion (Zyban), an antidepressant which aids smoking cessation by an unknown mechanism, has been introduced

in the UK,<sup>4</sup> and the UK government is planning to allow general practitioners to prescribe nicotine replacement therapy (NRT) in the near future. Secondly, in 1998 the UK government initiated a policy of encouraging smoking cessation<sup>5</sup> and £60 million is currently being made available to develop smoking cessation services targeted at motivated smokers in each health authority area in the UK.

This paper is an interpretation of how the published literature on smoking cessation relates to clinical practice. Others have organised the numerous trials of smoking cessation interventions into systematic reviews and these reviews have informed UK<sup>6</sup> and US<sup>7</sup> guidelines for the management of smoking cessation. A new systematic review is not needed and the aims of this paper are:

- to assess the role of *effective* nicotine addiction therapies in the clinical management of smoking cessation;
- to indicate how the new UK smoking cessation services are best utilised by clinicians who wish to help patients to stop smoking.

The first of these aims is relevant to all clinicians, but the second is most relevant to those working in the UK or, indeed, in other countries where specialist services for smoking cessation are available.

### Effective anti-smoking interventions

Table 1 summarises the effectiveness of a number of anti-smoking interventions that are easily available to doctors. Simply advising

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Table 1 Effective smoking cessation interventions available to physicians: amount of evidence

Intervention	Estimate of effectiveness Odds ratio (95% CI)	Amount of evidence	Licensed for use in the UK
Brief advice from a doctor	1.69 (1.45 to 1.98) <sup>9</sup> OR for quitting after brief advice compared with no advice	31 trials in different health care settings, not all dealing exclusively with brief advice	NA
Intensive advice from a doctor	1.44 (1.23 to 1.68) <sup>9</sup> OR for quitting after intensive advice compared with minimal advice	31 trials in different health care settings, not all dealing exclusively with intensive advice	NA
Nicotine replacement therapy (NRT)	1.71 (1.60 to 1.82) <sup>11</sup> OR comparing effect of NRT to placebo on quit rates. There is no evidence that any one type of NRT is more effective than others	100 trials investigating effectiveness of NRT, 88 comparing NRT with placebo, the remainder comparing different forms of NRT	GPs may only prescribe Niquitin CQ transdermal patches, Nicorette Microtabs and inhalators and Nicotinell lozenges. Hospital doctors may prescribe NRT, but may be restricted to certain products by local prescribing policies. Pharmacists can sell NRT
Bupropion (Zyban)	2.73 (1.90 to 3.94) <sup>15</sup> OR for quitting using bupropion compared with placebo	Two published and two unpublished trials. Only one trial compared NRT and bupropion. Insufficient evidence to be certain which is more effective	All UK doctors may prescribe this
Nortriptyline	2.83 (1.59 to 5.03) <sup>15</sup> OR for quitting using nortriptyline compared with placebo	Two trials	Not licensed for use in smoking cessation

smokers to stop is effective. It should also be noted that, of the pharmacological treatments for nicotine addiction, there is much more evidence for the effectiveness of NRT than there is for either bupropion or nortriptyline. The odds ratios for the effectiveness of bupropion and nortriptyline suggest that these drugs are more effective in promoting smoking cessation than NRT, but these figures need to be treated with some caution. Treatment effects (and hence odds ratios) obtained from clinical trials often differ markedly and more accurate estimates for the effectiveness of bupropion and nortriptyline will only become available after data can be pooled from further clinical trials. Either bupropion or nortriptyline may, in time, prove to be more effective in promoting smoking cessation than NRT, but at present there is insufficient research evidence to compare the effectiveness of these three treatments objectively.

#### BRIEF ANTI-SMOKING ADVICE

Most trials of doctors' anti-smoking advice have been conducted in primary care settings and advice has been given to all smokers presenting to doctors whether or not the patient requests it.<sup>8,9</sup> In other words, the population of smokers chosen for advice will have been unselected, including smokers who are both motivated and not motivated to try stopping smoking. Very few trials have tried to define what brief advice encompasses. Where definition has been attempted, advice has been described as being given in the "usual style" of the doctor and being aimed at making the patient realise that smoking is harmful. Some authors have advocated that, because brief anti-smoking advice is effective, doctors should discuss smoking with patients at every possible opportunity. It is worth noting, however, that the follow up periods in most brief advice trials are short (no more than one year), so "once only" rather than repeated anti-smoking advice will have been given to most smokers in these studies. There are no trials investigating the effectiveness of brief anti-smoking advice given repeatedly to unselected smokers (that is, those who have not requested advice) over longer periods. Consequently, a correct interpretation of the evidence is that doctors' anti-smoking advice, given to all presenting smokers *periodically*, promotes smoking cessation by a small minority. We have no evidence that repeating advice to unselected smokers who are not motivated to stop at short intervals has any greater effect. Indeed, there is some evidence that repetition of advice to asymptomatic smokers is counterproductive because it may lessen the effectiveness of doctors' advice.<sup>10</sup> This point has been incorporated into updated anti-smoking guidelines<sup>9</sup> which suggest that doctors should advise patients against smoking periodically and not necessarily at every consultation.

#### INTENSIVE ADVICE

More intensive advice—that is, advice which lasts for a longer period of time than brief advice—is marginally more effective than brief

advice (table 1).<sup>8,9</sup> The difference between brief and intensive advice from a doctor is not always clear, however. Few trials have accurately measured the amount of time taken to deliver anti-smoking interventions and only rarely has the content of anti-smoking advice been standardised. The Cochrane Collaboration Tobacco Addiction Review Group arbitrarily define advice provided during a single consultation lasting less than 20 minutes with up to one follow up visit as "minimal intensity advice".<sup>9</sup> To be considered "minimal intensity", this advice must not be accompanied by any greater reinforcement than giving the smoker a leaflet. Any advice involving a greater time commitment at the initial consultation, additional materials (other than leaflets), or more than one follow up visit is "intensive" anti-smoking advice. Due to time constraints, "intensive" advice is therefore unlikely to be delivered by UK general practitioners (GPs) or hospital doctors during their routine consultations. Trials investigating intensive interventions are likely to have recruited smokers who are motivated to stop smoking. Patients enrolled in these trials will have given informed consent to be randomised to spending significant amounts of their time receiving anti-smoking interventions or, where studies have involved more than one consultation, will have been motivated enough to attend their doctor for anti-smoking advice on a number of occasions. The Cochrane Collaboration Tobacco Addiction Review Group recommends that intensive anti-smoking advice is *not* given to unselected (that is, non-motivated) smokers<sup>9</sup> as the benefits of this compared with brief advice are minimal. Intensive anti-smoking advice from doctors is best reserved for smokers who have shown an interest in stopping smoking and, even then, it may be equally effective to employ another health professional to provide this.<sup>12</sup>

#### NICOTINE REPLACEMENT THERAPY (NRT)

There is strong evidence from numerous trials that NRT given for at least 8 weeks is an effective adjunct to smoking cessation advice given by doctors.<sup>11</sup> Trials have recruited smokers who are motivated to try stopping and there is no evidence that NRT is effective for non-motivated smokers. NRT delivers nicotine by a number of harmless delivery systems which reduce or eliminate withdrawal symptoms, enabling smokers to stop more easily. All delivery systems are thought to be equally effective.<sup>11</sup> NRT is only effective if used by heavier smokers—that is, those who smoke an average of 10 or more cigarettes daily—and its effect is probably maximised when behavioural support is provided concurrently by trained health professionals.<sup>11</sup> Any interested health professional who is appropriately trained would be appropriate for this task.<sup>12</sup> Worldwide there is a great deal of experience with NRT and serious side effects are rare.

#### BUPROPION (ZYBAN)

It is not known how this antidepressant works, but its effect is to decrease the withdrawal

symptoms that smokers experience. To date, two published trials<sup>13 14</sup> have been conducted on motivated smokers who smoke an average of at least 15 cigarettes daily. In these trials bupropion has only been used with quite intensive behavioural support and, consequently, there is no evidence that it can be effective without this. As a new drug its side effect profile is less certain than that of NRT. The most common side effect is insomnia, but fits have also been experienced by a small number of patients using bupropion (estimated as one in 1000 by the manufacturers). Consequently, bupropion is contraindicated in patients who are already taking antidepressants or who suffer from epilepsy.

#### NORTRIPTYLINE

This tricyclic antidepressant is not widely used for smoking cessation and is currently not licensed for this indication in the UK. Two trials have indicated that it is effective in smoking cessation.<sup>15</sup>

#### UK smoking cessation policy

In 1999 funds were made available to develop smoking cessation services in the UK.<sup>5</sup> For the first year of funding these were set up in health action zones (HAZs). HAZs are economically disadvantaged areas that have been targeted for extra government action and finance. From April 2000 monies were also made available to develop smoking cessation services in all remaining UK health authorities, so soon all UK physicians should have access to specialist centres for the treatment of nicotine addiction. Although the funds for smoking cessation services are only available until the end of the 2002 financial year, it is hoped that primary care groups (PCGs) will subsequently commission these services.

Following the introduction of bupropion on prescription, the UK government has ordered the National Institute of Clinical Excellence (NICE) to make recommendations about how NRT should be made available to patients. At the time of writing, smoking cessation services in the UK are allowed to issue smokers with NRT free of charge when this is clinically appropriate, and the smoker receives free prescriptions. Up to 4 weeks of treatment with NRT can be issued and some smoking cessation services are funding even longer courses. GPs can only prescribe the types of NRT mentioned in table 1. The reason for this is historical; before 1997 all new nicotine replacement products were "blacklisted" by the Department of Health and GPs were not allowed to prescribe them. After a change of government in 1997 this policy of blacklisting NRT products was dropped and, as the NRT products listed in Table 1 were introduced after the 1997 change of government, no steps have been taken to blacklist them.

#### Recommendations for using anti-smoking interventions

##### SMOKERS WHO ARE NOT MOTIVATED TO TRY STOPPING SMOKING

As doctors' advice against smoking can be effective, it is important to raise the topic of smoking, where possible, with patients. Once the topic of smoking has been raised, it is important to assess how motivated each smoker is to try stopping smoking. All further management should be tailored to the smoker's level of motivation to try to stop smoking. It may be counterproductive to try to persuade smokers to initiate quit attempts when they are not obviously motivated to stop.<sup>16 17</sup> A better use of the doctor's time is, perhaps, to encourage non-motivated smokers to change their attitudes to smoking in order to help them to decide to try stopping smoking. Where smokers are motivated to make an attempt to quit, it is probably worth encouraging them to take appropriate action against their habit. This could involve enlisting peer or spouse support in cessation attempts or even setting a future quit date. With motivated smokers it is always appropriate to find the number of cigarettes smoked daily to help assess whether treatment for nicotine addiction is indicated or not.

##### INDICATORS OF MOTIVATION

Unfortunately, there are currently no objective methods for assessing whether or not smokers are motivated to stop, although there is some evidence that motivated and non-motivated smokers behave differently when discussing smoking with doctors.<sup>18</sup> Where smokers have tried to stop in the past, however, they are more likely to do so in the future<sup>19-22</sup> and smokers who intend to try stopping smoking in the near future are also more likely to do so than others.<sup>21 23 24</sup> Clinicians' judgements of how motivated smokers are to try stopping can also be accurate predictors of patients' future smoking cessation.<sup>24</sup> Perhaps, until stronger research evidence is available, clinicians should use their own impressions of smokers' levels of motivation in conjunction with asking smokers about past quit attempts and future intentions to quit (or not) to assess their level of motivation to stop.

##### RECOMMENDATION 1: SYSTEMATICALLY RECORD SMOKING STATUS

Both primary health care teams and hospital teams should be enquiring about a patient's smoking status, at least periodically. There is strong research evidence that a systematic approach to recording smoking status prompts clinicians to discuss smoking more frequently with patients.<sup>7</sup> Clinicians should also consider recording their impression of smokers' motivation to try to stop as this can be useful when broaching the topic of smoking with patients.

##### RECOMMENDATION 2: MOTIVATED LIGHT SMOKERS (LESS THAN 10 CIGARETTES PER DAY ON AVERAGE)

As a bare minimum, these smokers should be given brief advice against smoking which includes basic information that can help them

to quit. Ideally, they should be offered more intensive support from a trained health professional with an interest in smoking cessation. This could be provided by a suitably trained member of the primary health care/hospital team or, alternatively, these smokers could be encouraged to attend the local smoking cessation service.

**RECOMMENDATION 3: MOTIVATED HEAVY SMOKERS (MORE THAN 10 CIGARETTES DAILY)**

These smokers will benefit from NRT and the best results will probably be achieved if this is provided with behavioural support. Again, behavioural support can be provided "in house" or by the local smoking cessation service. Table 1 indicates the types of NRT that GPs can prescribe. Hospital doctors should make themselves aware of the NRT they are able to prescribe as there may be restrictions on available products imposed by hospital pharmacy drugs formularies. If the smoker is referred to a smoking cessation service for behavioural support, then he or she may be eligible to receive NRT free of charge.

**RECOMMENDATION 4: MOTIVATED HEAVY SMOKERS (MORE THAN 15 CIGARETTES DAILY)**

As NRT has been in use much longer than bupropion and we have a clearer picture of its side effect profile, these smokers should use NRT first (see Recommendation 3). If, however, they are unsuccessful after using NRT with behavioural support and remain motivated to stop, clinicians should consider using bupropion. This should be provided with intensive behavioural support as, to date, trials have used weekly face to face counselling in addition to bupropion. This support should be provided by an appropriately trained health professional working with the clinical team or local smoking cessation service.

**Summary**

Doctors now have access to both effective treatments for nicotine addiction and to specialist centres for the treatment of smoking cessation. Neither of these resources are appropriate for all smokers and smokers' motivation to stop is crucial when determining the appropriate degree(s) of anti-smoking intervention(s) for them. Doctors must raise the issue of smoking regularly with patients, providing brief anti-smoking advice periodically to all smokers. Clinicians should carefully consider using either NRT or bupropion in

conjunction with intensive smoking cessation advice to help motivated heavy smokers combat nicotine addiction.

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