

Abrupt versus gradual smoking cessation with pre-cessation nicotine replacement therapy for cigarette smokers motivated to quit

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Gradual reduction before quitting smoking is common among unaided quitters; however most guidelines recommend abrupt cessation [e.g., (1)]. Using nicotine replacement therapy (NRT) to reduce cigarettes per day (CPD) increases cessation more than placebo among smokers who are not ready to quit (2). It is unclear whether this same strategy is effective for smokers who intend to quit now (3).

A recent randomized controlled trial (RCT) by Lindson-Hawley and colleagues (4) tested gradual- versus abrupt-cessation for smokers who intend to quit now (N=697). All participants received 2 weeks of NRT-patch and behavioral support prior to their quit date. The gradual-cessation group was also given short-acting NRT and instructed to reduce 75% of their CPD before quitting. The abrupt-cessation group was instructed to smoke as usual before quitting. After their quit date, all continued to receive NRT and behavioral support. Significantly fewer participants in the gradual-versus the abrupt-cessation group achieved prolonged abstinence at 4 weeks (39% versus 49%, RR =0.80; 95% CI, 0.66 to 0.93) and 6 months (16% versus 22%, RR =0.71; 95% CI, 0.46 to 0.91) after their quit date (4).

This large RCT (4) achieved high attendance for pre-cessation study visits (82–86%), daily patch medication adherence (81–90%), and, among those instructed to do so, a high magnitude of reduction in CPD (68%). The use of short-acting NRT in addition to NRT-patch for the gradual-cessation group was less, with 76% using a mean of 3–5 doses/day. The trial recruited from 31 general practitioners across England (which increased external validity) and used interventions that differed only during the 2 weeks of pre-cessation NRT (which increased internal

validity).

Reduction in CPD in the gradual-cessation group was more rapid than clinical guideline recommendations and previous trials (3). The reduction goal (75% of CPD in 2 weeks) in the “gradual” cessation group is in stark contrast to the current European labelling of NRT for gradual-cessation, which allows up to 6 months to reduce CPD. Further, the reduction goal was more ambitious than all 10 of the previous trials included in the Cochrane review on the topic (3). Lindson-Hawley and colleagues’ rapid reduction goal for the gradual-cessation group was based on two prior studies (5,6); however, these studies have methodological problems [e.g., different goals for the rapid versus slow reduction conditions (5) and a very small sample size (6)].

One rationale for gradual quitting has been to increase self-efficacy and decrease dependence and withdrawal by reducing smoking in small steps (7). It appears that about half of the gradual-cessation group failed to meet the reduction goal. Thus, it is possible that the poor outcomes in the gradual-cessation condition were because the reduction goal was too challenging and that participants were discouraged and this undermined rather than enhanced self-efficacy to quit. It may be that setting more obtainable goals (i.e., a smaller magnitude or longer duration of reduction in CPD) more readily increases self-efficacy, which increases quitting. On the other hand easier goals over a longer time could mean less practice with not smoking, or, as our prior trial suggests (8), more time for smokers to lose motivation to quit.

The trial’s “abrupt-cessation” condition appears to be different than what typically occurs during abrupt-cessation (i.e., quitting prior to initiating NRT). The study used

2 weeks of pre-cessation NRT in both groups to ensure that any treatment effect was due to gradual *vs.* abrupt quitting, and not pre-cessation NRT. This was necessary because pre-cessation NRT appears to be an effective strategy to increase cessation (9-11). However, it is not routinely used with abrupt quitting and different results may have occurred in the more real-world scenario of abrupt quitting without pre-cessation NRT.

Finally, the study used smokers ready to quit now. Reducing CPD increases motivation and eventual cessation among smokers who are not ready to quit (2). Thus, these results may not apply to smokers who are not motivated to quit now.

Findings from this trial (4) indicate that, among smokers who intend to quit now, instructions to quit abruptly after pre-cessation NRT increases the likelihood of abstinence more than instructions to quit after reducing CPD with pre-cessation NRT. However, more research is needed to test the circumstances in which reducing CPD (i.e., different magnitudes or durations of reduction) versus abrupt quitting (i.e., with or without pre-cessation NRT) increases cessation.

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Footnote

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Comment on: Lindson-Hawley N, Banting M, West R, *et al.* Gradual Versus Abrupt Smoking Cessation: A Randomized, Controlled Noninferiority Trial. *Ann Intern Med* 2016;164:585-92.

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