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Is there a place for cutting-down-to-stop in smoking cessation support?

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Conflicting evidence on the relative efficacy of cutting-down-to-stop (CDTS) versus quitting smoking abruptly could suggest that CDTS does help people to stop smoking, but is favoured by people who find it more difficult to quit. Future research should investigate this, and ways to implement and maximise the effectiveness of CDTS.

Abrupt quitting versus cutting-down-to-quit

Historically, guidelines and health professionals have recommended people stop smoking abruptly - by smoking as normal until a 'quit day'. However, around half of people reduce their smoking before quitting.(1, 2) This may involve reducing before a specified quit day or reducing consumption whilst aiming to stop at an indeterminate point in the future. In this editorial, we use the term cutting-down-to-stop (CDTS) to include both approaches. For people who cannot or will not quit abruptly, providing a CDTS option could increase the likelihood that people attempt to quit and use aids to cessation, such as support or medication, so increasing their chances of success(3). However, even if offering CDTS alongside abrupt quitting does draw more people into services, it could be damaging if it results in lower quit rates than stopping smoking abruptly. This is because people who would previously have attempted abrupt quitting may find CDTS more appealing and choose the less effective option. Therefore, research has explored the relative efficacy of the two approaches, but conflicting results have hampered interpretation.

Conflicting research findings

US-(4) and UK-based(1) surveys have found that people who chose CDTS were less likely to stop smoking than people who chose to quit abruptly, and results from one large, rigorously conducted randomised trial are consonant. The Rapid Reduction Trial (RRT) tested the effectiveness of behavioural support for CDTS, compared with abrupt quitting.(5) Nicotine replacement therapy (NRT) was used before and after the quit day in both trial arms. Both at four weeks and six months follow-up, abstinence was more likely in the abrupt arm. However, a Cochrane Review pooled 22 trials comparing CDTS with abrupt quitting, including RRT, and showed no evidence of a difference (risk ratio (RR) 1.01, 95% confidence intervals (CI) 0.87 to 1.17).(6) These contrasting findings provide pointers for research and practice.

Why do research findings differ?

RRT was the only trial in the Cochrane Review to find a statistically significant benefit of abrupt quitting.(6) This may be due to the nicotine preloading (i.e. pre-quit NRT), which has been found to increase abstinence rates compared with not using NRT before quitting.(7) Nicotine patch preloading seems more effective than preloading with fast-acting NRT (e.g. gum and lozenges), which may be due to the supranormal, higher blood concentrations of nicotine observed.(8) Although participants in the CDTS arm of RRT used both patches and fast-acting NRT, they also reduced their cigarette consumption by an average 69%, potentially undermining the effect of preloading by reducing nicotine concentrations.

Surveys suggesting abrupt quitting is superior to CDTS may have been subject to residual confounding. People who chose CDTS may have been more addicted, less motivated to quit or those who had struggled to quit previously; for example, those with mental health problems.(9) This is supported by an analysis from RRT, which found that participants who favoured CDTS at baseline were significantly less likely to be abstinent six months later compared to those who favoured

abrupt quitting, regardless of the trial arm to which they were randomised.(5) Observational studies have not adjusted for all of these potential confounders.(1, 4)

Another factor that could be affecting the success of CDTs is the way people attempt to reduce their smoking. There is only one way to quit abruptly, but there are lots of ways to reduce,(6) for example, by varying the duration of the reduction period and setting a quit date to work toward or not. Some of these approaches may be more successful than others. There is very little research examining the effectiveness of different methods, but there is some evidence that achieving greater reduction(10, 11), receiving behavioural support rather than self-help resources, and using fast-acting NRT or varenicline as an aid, may improve quit rates.(6)

Finally, retrospective recall in surveys of abrupt cessation versus CDTs may be biased. Quitting smoking is often a long process, made up of many different cessation attempts(12) and strategies.(13, 14) Even if participants ultimately stop smoking their last cigarettes abruptly, they may have previously reduced their consumption. Looking back they may not remember or consider reduction that occurred before their most recent, explicit, decision to quit, although it may have contributed to their ability to initiate a quit attempt and their ultimate success. (15)

Where should clinical advice and practice go from here?

The evidence discussed above has aimed to establish whether abrupt quitting or CDTs is more likely to help somebody who has already decided to quit smoking to stop successfully.(1, 4-6) However, data do not definitively tell us whether promoting CDTs undermines or promotes overall quit attempts and the uptake of evidence-based treatment. Evidence does suggest that people do not view CDTs and abrupt quitting as mutually exclusive, and may switch between the two approaches after deciding to change their smoking behaviour.(13, 14) Therefore, offering both strategies could increase access to evidence-based treatment. This may be particularly important if CDTs appeals to people who would not otherwise be motivated to quit, but evidence suggests could benefit from this approach.(16) We suggest clinicians provide treatment tailored to an individual's preference, willingness, or perceived ability to CDTs or quit abruptly with the goal of increasing the percentage of people making quit attempts and using evidence-based support. Evidence suggests that providing behavioural support, and using varenicline or fast-acting NRT, whilst reducing may increase people's chances of quitting, and will not put people at a disadvantage when compared with quitting abruptly.(6)

What do we still need to know?

Research should examine who chooses CDTs versus abrupt quitting, and how those choices are shaped by policy interventions. Based on the evidence presented in this editorial we hypothesise that particularly 'hard to reach populations' may prefer CDTs, and so trials, and complementary qualitative assessments of their acceptability, in these populations would be particularly helpful.

It would also be useful to explore the CDTs strategies people use during unsupported quit attempts and compare these to the methods used in trials, to investigate whether differences could be contributing to discrepancies in findings. Future studies should explore the following characteristics of CDTs interventions to inform the development of CDTs interventions and maximise efficacy:

- Thresholds for reductions in pre-quit smoking behaviour
- Duration of the pre-quit reduction period
- Whether a firm quit date should be set
- Whether reduction influences initiating a quit attempt versus maintaining abstinence

- Whether the effectiveness of CDTs differs between those who are motivated versus unmotivated to quit
- Electronic cigarettes as aids to reduction. There is a lack of trials testing the efficacy of electronic cigarettes specifically for CDTs,(6) although we know that people use them in this way.(17)

Finally, the key question that remains is whether providing support for CDTs enhances or reduces quit attempts and their success in the population as a whole, and how promoting this approach affects equity of cessation outcomes.

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