

# Harm-Reduction Approaches to Smoking

## The Need for Data

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Over 80% of smokers are not planning to attempt to stop smoking in the next 6 months.<sup>1</sup> One approach to such smokers is to motivate them to make a quit attempt via advice or mass media. Although such approaches are effective, the magnitude of their effect is small.<sup>2,3</sup>

A second approach, often termed "harm reduction," is to reduce the risk of ongoing smoking.<sup>4</sup> This strategy has become a popular research topic recently for several reasons. First, we know that 50% of smokers will never quit<sup>5</sup>; thus, focusing only on cessation ignores half of the smokers. However, perhaps a more important reason for the popularity of harm reduction is that many scientists and clinicians have become disappointed in the lack of impact of new effective treatments. For example, smokers often do not receive our proven-effective treatments for a variety of reasons.<sup>6</sup> In addition, newer treatments seem to produce the same quit rates as the older treatments.<sup>7</sup> Finally, some believe that a selection bias has occurred such that social pressure or health education, have caused mostly the less-dependent, less-troubled smokers to quit, leaving the more-dependent, more-problematic smokers.<sup>8</sup> The prevalence of cessation has been increasing dramatically over recent decades; however, cessation activity has now leveled off in the last decade.<sup>9</sup> This lends validity to the disappointment felt by scientist/clinicians.

Although harm reduction is attractive, whether clinically significant harm reduction can be achieved is debatable.<sup>4</sup> There are three main ways harm reduction has been attempted with cigarettes: reducing tar yield of cigarettes, reducing number of cigarettes smoked, and production of cigarette substitutes. As Kozlowski et al.<sup>10</sup> point out, reductions in the tar yield of cigarettes have not been clearly demonstrated to produce significant reduction in risk.<sup>10</sup> In terms of reducing smoking, recent data suggest some smokers can make large

reductions in smoking rate and maintain these over time<sup>12</sup>; however, whether these reductions will produce sustained reductions in toxin exposure and health risk has not been shown. In terms of cigarette substitutes, the newest of these—Eclipse—appears to produce large reductions in tar exposure on smoking machines<sup>13</sup>; however, whether this will occur with human smoking is unclear.

Even if we could verify that one of these three strategies reduced risk, the major contribution of the Kozlowski et al.<sup>10</sup> study is that it reminds us that we must look at possible unintended effects. For example, efforts to reduce harm from smoking might send an unintended message that there are ways to use cigarettes with very little risk and thereby undermine prevention and cessation. In the Kozlowski et al.<sup>10</sup> study, several lines of evidence suggest that despite the lack of scientific evidence that low-tar cigarettes reduce risk, many smokers have switched to low-tar/low-nicotine cigarettes in an attempt to reduce harm and believe they have, indeed, substantially reduced their risk of harm. Perhaps the more important finding in the study is that many low-tar smokers reported they would be more likely to attempt to stop smoking if they found out they could be receiving similar levels of tar from low- and regular-tar cigarettes. This finding suggests that the perceived lowering of risk from using low-tar cigarettes has decreased the motivation of some smokers to stop smoking. This finding is consistent with an earlier report that found that smokers who had switched to low-tar cigarettes were less likely to have made a quit attempt than smokers who had not switched.<sup>14</sup> Interestingly, the two studies of the other two methods of harm reduction, reducing the number of cigarettes/day<sup>15</sup> and the use of Eclipse,<sup>16</sup> suggest these harm-reduction treatments do not undermine cessation.

Finally, in terms of the effects of harm reduction on initiation of smoking, one study suggested low-tar/low-nicotine cigarettes might be a less-aversive starter product for teenage women.<sup>17</sup> In fact, most teenagers are using low-tar/nicotine cigarettes.<sup>7</sup> Thus, teenagers might perceive a campaign to promote reduced smoking for those who cannot quit or a safer cigarette as

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indicating there are relatively safe ways to smoke. This might, in turn, increase smoking initiation.

In summary, the major significance of the Kozlowski et al.<sup>10</sup> paper is to teach prevention scientists a little humility and a little ecology: humility, in that face-valid, biologically plausible interventions cannot assume to be effective without testing; ecology, in that any intervention will have unintended results and we need to know if these are good or bad.

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