smoking cessation pharmacotherapy can double quit rates. However, smokers often fail after a single quit attempt, and quitting smoking often involves multiple quit attempts over the course of months or years. Few studies have tested the impact of providing repeated courses of pharmacotherapy to help smokers recover from relapses and engage in new cessation attempts. As part of a study of chronic disease management for smoking cessation, we followed a cohort of smokers that was offered up to 4 courses of pharmacotherapy to help smokers, regardless of their interest in quitting, from 50 rural areas in Kansas, through Minnesota, Missouri, and Nebraska.

In our longitudinal analyses, subjects were censored at the end of any treatment cycle in which they failed to request medication: this permitted us to compare the 6-month quit rates among participants who had used or not used pharmacotherapy during that cycle. Because we wanted to examine the impact of repeated cycles of pharmacotherapy on smokers who had failed to quit during a prior medication-assisted attempt, we also censored subjects who had stopped smoking at the end of the previous treatment cycle. The flow of continuing smokers across 4 consecutive cycles of pharmacotherapy-assisted quit attempts and those censored is described in the Figure. SAS version 9.1 software was used for all statistical analyses (SAS Institute Inc).

Results. The Figure describes medication use across the 4 consecutive cycles of pharmacotherapy-assisted quit attempts. Of the 726 participants, 464 (63.9%) took medication in the first cycle of treatment. Among continuing smokers, 202 of 383 (52.7%), 81 of 177 (45.8%), and 44 of 68 (64.7%) opted for second, third, and fourth consecutive cycles of pharmacotherapy, respectively. In the generalized linear mixed model, a positive relationship existed between the probability of requesting medication and baseline stage of change, baseline motivation, and previous nicotine replacement therapy.

Cessation rates were consistently higher for pharmacotherapy users compared with nonusers. Smokers who...
opted to use pharmacotherapy had 6-month quit rates
of 17.4% (n=464), 12.4% (n=202), 16.0% (n=81), and
15.9% (n=44) after the first, second, third, and fourth
consecutive rounds of pharmacotherapy, respectively
(Figure). The odds ratios (95% confidence intervals) for
quitting among pharmacotherapy users vs nonusers were
2.56 (1.53-4.28), 1.83 (0.90-3.69), 1.85 (0.75-4.58), and
2.08 (0.40-10.92) after the first, second, third, and fourth
cycles of treatment, respectively.

In a generalized linear mixed model that controlled
for baseline characteristics related to pharmacotherapy
use, pharmacotherapy use was found to be significantly
associated with the probability of quitting (odds ratio,
1.99; P = .002). The probability of quitting was not re-
lated to the number of previous pharmacotherapy-
assisted quit attempts (odds ratio, 1.004; P = .81).

Comment. The study has several limitations. Smokers
who chose to use pharmacotherapy were self-selected.
However, we did adjust for baseline factors related to
who would select medication. Moreover, the success as-
sociated with use of pharmacotherapy is similar to that
seen in randomized controlled trials\(^1\) and is much
higher than that seen in general populations of smokers
who are not receiving offers for free treatment. Success
in smoking cessation was based on self-report, and fol-
low-up was restricted to 6 months owing to the timing
of the repeated interventions. Studies with longer fol-
low-up and biochemical validation would help to con-
firm these findings.

Nevertheless, this study showed that 1 in 2 smokers was
willing to make a second pharmacotherapy quit attempt
within 6 months of a treatment failure. Willingness to re-
engage in treatment did not diminish over time. Phar-
macotherapy appeared to remain effective even in the pres-
ence of multiple prior treatment failures. These results
support a model of care in which smokers in whom treat-
ment initially fails are quickly reengaged in a new, phar-
macotherapy-assisted quit attempt. Insurance programs
that currently limit the number of courses of treatment that
smokers receive should reexamine those policies.

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**Low-Carbohydrate Diet and Blood Lipid Levels: How Good and How Fast?**

We read with interest the article by Jenkins et al1 describing the lipid-lowering advantages of a low-carbohydrate diet high in vegetable proteins over a high-carbohydrate diet. Their findings are reassuring (low-carbohydrate diet does not increase cardiovascular risk) and in line with observational data indicating that restriction of refined carbohydrates in the diet, substituted with vegetable sources of fat and protein, may moderately reduce the risk of coronary heart disease in women.2

There are at least one important message from the study by Jenkins et al1 challenging the current view about the effect of diet on low-density lipoprotein cholesterol (LDL-C) levels: diet generally produces only modest LDL-C level reduction in the range of 7% to 12%,3 which may lead readers to underestimate the true effect of diet on lipid levels. According to this estimate, the LDL-C level reduction induced by the low-carbohydrate diet would have been 21 mg/dL (to convert to millimoles per liter, multiply by 0.0259) at best (12% of baseline), whereas it was 36 mg/dL (21% of baseline), which is what one is accustomed to see with low-dose statin use,3 on the average. Interestingly enough, the maximal effect on LDL-C levels was obtained in 2 weeks.

Too small (for numbers of participants), too short (for length of follow-up), and too extreme (for the percentage of carbohydrate) are, however, the adjectives that need to be challenged to have these encouraging results translated into clinical practice. The reader needs to be convinced that this kind of diet may be applicable to unselected patients who have to purchase and prepare their own meals and that the robust changes in a tested diet can be maintained for periods longer than the few weeks studied in the trial. Longer trials examining actual cardiovascular events are needed to convince the skeptical physician, accustomed to the drug-intensive style of medicine,4 of the benefit of yet another unique and difficult-to-achieve dietary regimen.

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**In reply**

We thank Giugliano and colleagues for their kind words on the possible value of our study. We agree absolutely that the study was small, of short duration, and extreme in terms of carbohydrate restriction. As Giugliano and colleagues rightly noted, the aim of the study was proof of principle that high-fat and high-protein diets of plant origin may have advantages over animal product–based diets in terms of LDL-C level reduction, with benefits also for the total–high-density lipoprotein cholesterol ratio and blood pressure reduction.

Such diets have proved beneficial for heart disease in short studies.1 Moderate–to high–vegetable protein diets have been proposed recently by Giugliano and colleagues as part of the dietary treatment of the metabolic syndrome.2 Lower–glycemic load diets have been associated with greater weight loss in subjects with postprandial hyperinsulinemia3 and in reducing cardiovascular disease in those who over-weight in the Nurses Health Study.4 These dietary approaches will all tend to limit the proportion of rapidly di-