

counteradvertising campaign to curtail cigarette smoking and its promotion, warning labels could conceivably be useful. But as presently designed, warning labels in and of themselves are not a deterrent to smoking, and consideration should be given to their removal.

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### The Warnings on Cigarette Packages Are Ineffective

*To the Editor.*—Both smokers and nonsmokers regularly encounter the Surgeon General's warnings about the health hazards of tobacco. The presence of these warnings has become a basis for tobacco companies' defense in product liability cases. They have argued that because of these health messages, the public is adequately warned about the "alleged" hazards of tobacco use. Yet, at the same time, they contend that smoking does not cause disease.

There is growing concern that the Surgeon General's warnings may be ineffective. Recent evidence<sup>1,2</sup> has demonstrated that the warnings are often not seen when they appear on magazine advertisements, billboards, and taxi signs. We conducted a pilot study to examine the public's knowledge of the current Surgeon General's warnings on cigarette packages. In particular, we were interested in the level of knowledge that smokers had about the warnings.

*Study.*—Using a typical "market survey" format, adults in a shopping mall were approached and asked if they would answer a brief questionnaire. Queries included age, smoking status, and their knowledge about the presence, location, and content of the Surgeon General's warnings on cigarette packages.

The survey population ( $n=202$ ) was young (median age, 36.0 years). Sixty-six percent were female, 70% were white, 34% were current smokers, 10% were former smokers, and 56% were nonsmokers.

Ninety-six percent of all those surveyed knew there was a health warning on cigarette packages. However, only 67% knew the warning was located on the side of the pack. Ninety-one percent of the current smokers, compared with 60% of the nonsmokers, were able to correctly identify the warning's location ( $P<.003$ ).

There are currently four rotating warnings, each with a different health message. When current or past smokers were asked about the number of different warnings, 21% said that they did not know, 24% said one, 27% said two, and 15% said three. Only 7% knew the correct answer.

There were no differences between smokers and nonsmokers in terms of their knowledge of the warnings' contents. For smokers, 22% had no content knowledge, 48% knew only the warnings' general theme (eg, health), 28% knew one specific warning theme (eg, lung cancer), and 1% knew the exact

wording for one warning. For nonsmokers, 23% had no content knowledge, 47% knew only a general theme, and 30% knew a specific theme. None knew the exact wording of even a single warning.

*Comment.*—Even though it is widely known that tobacco packages contain a warning of some kind, it appears that the public is unaware of the health messages in these warnings. This is surprisingly true even for smokers, of whom 70% were unable to identify the specific theme of even one Surgeon General's warning. A one-pack-per-day smoker is theoretically exposed to the Surgeon General's warnings each time a cigarette is smoked, ie, 7300 exposures per year from the one daily pack alone!

The data presented herein provide preliminary evidence that these warning exposures are of such a low impact that smokers remain to a large extent not warned. We believe that the Surgeon General's warnings as presently written and currently formatted are neither effective in transferring knowledge regarding the health hazards associated with tobacco use nor likely to positively impact on the health behavior of those using these products.

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1. Fischer PM, Richards JW, Berman EJ, et al: Recall and eye tracking study of adolescents viewing tobacco advertisements. *JAMA* 1989;261:84-89.

2. Davis R, Kendrick JS: The Surgeon General's warnings in outdoor cigarette advertising. *JAMA* 1989;261:90-94.

### Chain-Chewin'

*To the Editor.*—The Sept 16 issue of *JAMA* contains several articles that address the use of nicotine gum in the treatment of smoking cessation. I took particular notice of the recommended dose and duration of use of nicotine polacrilex and its possible side effects. In particular, I question whether the reinforcement schedules described by Fortmann et al<sup>1</sup> might induce a psychophysiological condition that Hajek et al<sup>2</sup> call "long-term gum users." This condition may more aptly be labeled "chain-chewing." My familiarity with patients who "doctor shop" as a means of replenishing their gum supply has led me to conclude that for those with heavy nicotine depen-

dence, the gum may serve as a temporary substitute or enhancer of nicotine dependency, not as an ingredient of successful smoking cessation.

There is also no mention of "passive gum users"—those individuals affected by the chewing habits of would-be quitters. The following country/western song lyrics give an example of the adverse effects of nicotine gum use:

1. Fortmann SP, Gillen JD, Teich MJ, et al: Minimal contact treatment for smoking cessation: A placebo controlled trial of nicotine polacrilex and self-directed relapse prevention: Initial results of the Stamford Stop Smoking Project. *JAMA* 1988;260:1575-1580.

2. Hajek P, Jackson P, Belcher M: Long-term use of nicotine chewing gum: Occurrence, determinants, and effect on weight gain. *JAMA* 1988;260:1593-1596.

Before long she was hooked on my chewin' love;  
She needed love after lovin' and lovin' after love;  
But it wasn't my kisses that made her hum,  
It was the nicotine in my chewin' gum.

So now I'm a chain-chewin' on nicotine gum;  
I'm chew-chew-chewin' til my jaws are numb.  
I'm a chain-chewin' on nicotine gum,  
I'm chew-chew-chewin' to get me some....

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In a bar in Kentucky, I chain smoked one night  
And met me a lady who felt mighty right;  
But she said, "Sir, I don't kiss a smokin' chimney.  
Lay down those smokes before you have me."  
I told 'er, "Ma'am, you're seein' a pack-a-day man;  
I don't promise to quit but I'll do what I can.  
If you don't mind me chewin' while I give you a kiss,  
I'll use nicotine gum to get my fix."  
So now I'm a chain-chewin' on nicotine gum;  
I'm chew-chew-chewin' til my jaws are numb.  
I'm a chain-chewin' on nicotine gum,  
I'm chew-chew-chewin' to get me some.