Bigger cut in smoke exposure for immediate nicotine reduction

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(HealthDay)—Immediate reduction of nicotine in cigarettes leads to significantly greater decreases in biomarkers of smoke exposure than gradual reductions in nicotine levels, according to a study published in the Sept. 4 issue of the *Journal of the American Medical Association*.

Dorothy K. Hatsukami, Ph.D., from the University of Minnesota in Minneapolis, and colleagues performed a double-blind, randomized, parallel-design study to assess the impact of (1) immediate reduction to 0.4 mg of nicotine per gram of tobacco cigarettes; (2) gradual reduction from 15.5 mg to 0.4 mg of nicotine per gram of tobacco cigarettes with five monthly dose changes; or (3) maintenance on 15.5 mg of nicotine per gram of tobacco cigarettes. A total of 1,250 daily smokers with no intention to quit within 30 days were randomized.

The researchers observed significantly lower levels of exposure in the immediate- versus gradual-reduction group for breath carbon monoxide (CO; mean difference, ?4.06 parts per million), urine 3-hydroxypropylmercapturic acid (3-HPMA; ratio of geometric means, 0.83), and urine phenanthrene tetraol (PheT; ratio of geometric means, 0.88). Similarly, significantly lower levels of exposure were seen for the immediate reduction versus control groups for CO (mean difference, ?3.38), 3-HPMA (ratio of geometric means, 0.81), and PheT (ratio of geometric means, 0.86). There were no significant differences between the gradual reduction and control groups.

"Immediate reduction in nicotine content of cigarettes provided the greatest reduction in biomarkers of smoke exposure over time," the authors write.

Several authors disclosed financial ties to the pharmaceutical industry; one author reported serving as a paid expert witness in litigation against tobacco companies.

More information: Abstract/Full Text (subscription or payment may be required)