Lung Cancer Prevention

Iman Hakim and Linda Garland

College of Medicine and College of Public Health, University of Arizona, Tucson AZ 85724

Lung cancer continues to exact a huge toll on the health status of Americans and people worldwide. In the United States (U.S.), the number of new lung cancer cases diagnosed per year has reached epidemic proportions. In 2004, an estimated 173,770 new cases of lung cancer were diagnosed, representing 12.7% of the 1,368,030 new cases of all cancers diagnosed in 2004 (Jemal, Tiwari et al. 2004). While prostate cancer and breast cancer lead new cancer cases in American men and women respectively in 2004, lung cancer remains the leading cause of cancer-related death for both men and women, with an estimated 160,440 of all 563,700 cancer deaths, or 28.5%, attributable to lung cancer. While once thought to be mainly a man’s disease, lung cancer is now represented in a nearly equal fashion between the sexes, with women diagnosed with lung cancer in 2004 representing a full 46% of all new cases (Jemal, Tiwari et al. 2004).

The Epidemiology of Lung Cancer

Trends in Tobacco Use in the United States

The lung cancer epidemic that has now manifested in the U.S. had its roots in the tremendous increase in smoking prevalence through the 1900s. In the early 1900s, smoking, especially among women, was relatively rare (USDHHS 1980). Over the next 50 years, smoking prevalence increased dramatically, influenced by expanding tobacco marketing initiatives by the tobacco industry. Both male and female smokers were cultivated; in fact, as early as the 1920s the tobacco industry first began its targeting of women utilizing the concept of ‘image advertising,’ offering lipstick-colored cigarette tips for the woman smoker and developing advertising campaigns illustrated by the slogan, “Reach for a Lucky instead of a sweet” to create the association between cigarette use with staying slim, a theme particularly appealing to women (Wallace 1929). There was a significant increase in the numbers of men and women who took up the habit of smoking cigarettes during World War II, with cigarettes being included in government issue ration kits, and image advertising capitalizing on the war effort to promote smoking in women.

The Narrowing of the Gender Gap in Smoking Prevalence

While early in the century a large gender gap in smoking prevalence existed, the gap narrowed significantly over the middle and latter parts of the century as a conse-
quence of several trends. First, women’s use of cigarettes virtually soared over the mid-1900s in the face of aggressive niche marketing that linked women’s smoking to their burgeoning social and political independence, a marketing effort best typified by the Virginia Slims advertising slogan, “You’ve Come a Long Way, Baby.” Second, in the 1950s, the first epidemiologic studies were conducted that definitively linked tobacco exposure and lung cancer (Levin, Goldstein et al. 1950; Doll and Hill 1952). In 1964, the influential report of the Advisory Committee to the Surgeon General cited evidence of the adverse health effects of tobacco use (USDEW 1964). At that time, 51.9% of men and 33.9% of women were smoking (Giovino, Schooley et al. 1994).

In 1964, the Surgeon General’s Report on Smoking and Health became the first national declaration of the association between cigarette smoking as a cause of cancer and other diseases. The publication of this report was followed in 1965 by a congressional act requiring a general health warning on all cigarette packaging regarding the dangers of cigarette smoking. The landmark 1964 Surgeon General’s Report on Smoking and Health (USDHHS 1964) provided official evidence that cigarette smoking is a cause of cancer and other serious diseases. The following year, Congress passed the Federal Cigarette Labeling and Advertising Act, requiring health warnings on all cigarette packages: “Caution: Cigarette Smoking May be Hazardous to Your Health.”

A wave of aggressive private, state and federal-based tobacco control initiatives followed, promoting smoking cessation and placing restrictions on some venues for tobacco advertisements such as broadcast advertising on television, bans on billboard advertising, and restrictions on sales and advertising to children and adolescents. For men, the latter part of the century saw a decline in smoking prevalence; for women, smoking prevalence continued to increase. Thus, at the very end of the 20th century, the gender gap had narrowed to only around 5%, with 22% of women aged 18 or old-

![Graph showing annual adult per capita cigarette consumption and major smoking and health events.](image-url)

**Fig. 1.** Annual adult per capita cigarette consumption and major smoking and health events – United States, 1900–1998 – Source of data: US Department of Agriculture, 2000 Surgeon, General’s Report.