

THE 2004 UNITED STATES SURGEON GENERAL'S REPORT: THE HEALTH CONSEQUENCES OF SMOKING

The Surgeon General of the United States, Richard Carmona, recently launched the 28th Surgeon General's Report on Smoking and Health: *The Health Consequences of Smoking*.¹ The first Surgeon General's Report was published in 1964. These reports have been instrumental in providing evidence-based information regarding all aspects of tobacco-related harm to the global tobacco control community. Previous topics have included evidence relating to involuntary smoking (1986); nicotine addiction (1988); the health benefits of smoking cessation (1990); preventing tobacco use among young people (1994); and women and smoking (1980 and 2001).

The report *The Health Consequences of Smoking* concludes that smoking harms almost every organ in the body, causes many diseases, and reduces the health of smokers in general. It also confirms that quitting smoking has immediate as well as long-term benefits, by reducing risks for diseases caused by smoking and improving health in general. It states that for every premature death caused each year by smoking there are at least 20 smokers with a serious smoking-related illness.

Through a comprehensive literature review, the report has identified a substantial number of diseases caused by smoking that were not previously considered to be causally associated with smoking. These include abdominal aortic aneurysm, acute myeloid leukemia, cervical cancer, kidney cancer, pancreatic cancer, stomach cancer, periodontitis, pneumonia, and cataract.

The report describes the mechanisms by which smoking tobacco causes disease. Toxic ingredients in cigarette smoke travel throughout the body, causing damage in several different ways. Wherever blood travels in the body, the toxins from tobacco smoke also travel. Nicotine reaches the brain within 10 seconds after inhalation and has been found in every part of the body, including breast milk. Carbon monoxide binds to haemoglobin in red blood cells, reducing the load of oxygen that affected cells can carry. Carcinogens in tobacco smoke damage the genes that control the growth of cells, causing them to grow abnormally or to reproduce too rapidly. The carcinogen benzo(a)pyrene binds to cells in the airways and major organs of smokers.

Smoking affects the functioning of the immune system and increases the risk of respiratory and other infections. Tobacco smoke causes oxidative stress that mutates DNA, promotes atherosclerosis, and leads to chronic lung injury. Oxidative stress is thought to be the general mechanism behind the ageing process, which contributes to the development of cancer, cardiovascular disease, and chronic obstructive pulmonary disease.

The report *The Health Consequences of Smoking*, and all previous reports on smoking and health made by the United States Surgeon General, are available from the Centers for Disease Control website at www.cdc.gov/tobacco/sgr/index.htm. This website also contains several other documents drawn from the content of the 2004 report, including nine fact sheets, an interactive database of key articles, an interactive animation of health effects of smoking, a video link, and a booklet for consumers.

REFERENCE

1. United States Department of Health and Human Services. *The Health Consequences of Smoking: A Report of the Surgeon General*. Atlanta: United States Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2004.