

TABLE 470-1 RELATIVE RISKS FOR CURRENT SMOKERS OF CIGARETTES

Disease or Condition	Current Smokers	
	Males	Females
Coronary heart disease		
Age 35–64	2.8	3.1
Age ≥65	1.5	1.6
Cerebrovascular disease		
Age 35–64	3.3	4
Age ≥65	1.6	1.5
Aortic aneurysm	6.2	7.1
Chronic airway obstruction	10.6	13.1
Cancer		
Lung	23.3	12.7
Larynx	14.6	13
Lip, oral cavity, pharynx	10.9	5.1
Esophagus	6.8	7.8
Bladder, other urinary organs	3.3	2.2
Kidney	2.7	1.3
Pancreas	2.3	2.3
Stomach	2	1.4
Liver	1.7	1.7
Colorectal	1.2	1.2
Cervix		1.6
Acute myeloid leukemia	1.4	1.4
Sudden infant death syndrome		2.3
Infant respiratory distress syndrome		1.3
Low birth weight at delivery		1.8

benefit of smoking cessation for a new coronary event demonstrable among those who have survived a first myocardial infarction. This effect may also explain the substantially higher rates of graft occlusion among continuing smokers following vascular bypass surgery for cardiac or peripheral vascular disease.

Cessation of cigarette smoking reduces the risk of a second coronary event within 6–12 months; rates of first myocardial infarction and death from coronary heart disease also decline within the first few years following cessation among those with no prior cardiovascular history. After 15 years of abstinence, the risk of a new myocardial infarction or death from coronary heart disease in former smokers is similar to that for those who have never smoked.

CANCER

Tobacco smoking causes cancer of the lung; oral cavity; naso-, oro-, and hypopharynx; nasal cavity and paranasal sinuses; larynx; esophagus; stomach; pancreas; liver (hepatocellular); colon and rectum; kidney (body and pelvis); ureter; urinary bladder; and uterine cervix, and also causes myeloid leukemia. There is evidence suggesting that cigarette smoking may play a role in increasing the risk of breast cancer. There does not appear to be a causal link between cigarette smoking and cancer of the endometrium, and there is a lower risk of uterine cancer among postmenopausal women who smoke. The risks of cancer increase with the increasing number of cigarettes smoked per day and with increasing duration of smoking. Additionally, there are synergistic interactions between cigarette smoking and alcohol use for cancer of the oral cavity and esophagus. Several occupational exposures synergistically increase lung cancer risk among cigarette smokers, most notably occupational asbestos and radon exposure.

Cessation of cigarette smoking reduces the risk of developing cancer relative to continuing smoking, but even 20 years after cessation, there is a modest persistent increased risk of developing lung cancer.

RESPIRATORY DISEASE

Cigarette smoking is responsible for 90% of chronic obstructive pulmonary disease. Within 1–2 years of beginning to smoke regularly,

many young smokers will develop inflammatory changes in their small airways, although lung function measures of these changes do not predict development of chronic airflow obstruction. After 20 years of smoking, pathophysiologic changes in the lungs develop and progress proportional to smoking intensity and duration. Chronic mucous hyperplasia of the larger airways results in a chronic productive cough in as many as 80% of smokers >60 years of age. Chronic inflammation and narrowing of the small airways and/or enzymatic digestion of alveolar walls resulting in pulmonary emphysema can result in reduced expiratory airflow sufficient to produce clinical symptoms of respiratory limitation in ~15–25% of smokers.

Changes in the small airways of young smokers will reverse after 1–2 years of cessation. There may also be a small increase in measures of expiratory airflow following cessation among individuals who have developed chronic airflow obstruction, but the major change following cessation is a slowing of the rate of decline in lung function with advancing age rather than a return of lung function toward normal.

PREGNANCY

Cigarette smoking is associated with several maternal complications of pregnancy: premature rupture of membranes, abruptio placentae, and placenta previa; there is also a small increase in the risk of spontaneous abortion among smokers. Infants of smoking mothers are more likely to experience preterm delivery, have a higher perinatal mortality rate, be small for their gestational age, and have higher rates of infant respiratory distress syndrome; they are more likely to die of sudden infant death syndrome and appear to have a developmental lag for at least the first several years of life.

OTHER CONDITIONS

Smoking delays healing of peptic ulcers; increases the risk of developing diabetes, active tuberculosis, rheumatoid arthritis, osteoporosis, senile cataracts, and neovascular and atrophic forms of macular degeneration; and results in premature menopause, wrinkling of the skin, gallstones and cholecystitis in women, and male impotence.

ENVIRONMENTAL TOBACCO SMOKE

Long-term exposure to environmental tobacco smoke increases the risk of lung cancer and coronary artery disease among nonsmokers. It also increases the incidence of respiratory infections, chronic otitis media, and asthma in children and causes exacerbation of asthma in children. Some evidence suggests that environmental tobacco smoke exposure may increase the risk of premenopausal breast cancer. Patients who continue to smoke during treatment for cancer with chemotherapy or radiation have poorer outcomes and reduced survival.

PHARMACOLOGIC INTERACTIONS

Cigarette smoking may interact with a variety of other drugs (Table 470-2). Cigarette smoking induces the cytochrome P450 system, which may alter the metabolic clearance of drugs such as theophylline. This may result in inadequate serum levels in smokers as outpatients when the dosage is established in the hospital under nonsmoking conditions. Correspondingly, serum levels may rise when smokers are hospitalized and not allowed to smoke. Smokers may also have higher first-pass clearance for drugs such as lidocaine, and the stimulant effects of nicotine may reduce the effect of benzodiazepines or beta blockers.

OTHER FORMS OF TOBACCO USE

Other major forms of tobacco use are moist snuff deposited between the cheek and gum, chewing tobacco, pipes and cigars, and recently bidi (tobacco wrapped in tendu or temburni leaf; commonly used in India), clove cigarettes, and water pipes. Oral tobacco use leads to gum disease and can result in oral and pancreatic cancer as well as heart disease, with dramatic differences in the risks evident for products used in Africa and Asia as compared to those in the United States and Europe.