

RISK FACTOR INFORMATION FOR SELECTED CANCER TYPES

Pancreatic Cancer

The American Cancer Society estimates that approximately 32,180 people in the U.S. (16,100 men and 16,080 women) will develop pancreatic cancer in 2005. This disease accounts for approximately 2% of all new cases of cancer in both men and women, but between 5% and 6% of all cancer deaths (ACS, 2005). This discrepancy has been attributed to detection of pancreatic cancer at an advanced stage and the short median survival time for this cancer of approximately three months. Between 1920 and 1965, mortality from this disease increased nearly 200% from 2.9 to 8.2 per 100,000 people. These increases are believed to be due, in part, to improved diagnosis during this time period (Anderson et al., 1996). However, over the past 25 years, incidence rates have declined slowly but consistently in men and a slight decline in rates among women has been observed since the mid-1980s. Further, since about 1975, men have experienced a slight decrease in mortality from pancreatic cancer, although rates among women have not dropped (ACS, 2005). The risk of developing pancreatic cancer increases with age and the majority of cases occur between age 60 and 80. Men are approximately 30% more likely to develop pancreatic cancer than are women (ACS, 2000).

Very little is known about what causes pancreatic cancer and how to prevent it. However, a number of risk factors have been identified. Besides age, the most consistent and only established risk factor for pancreatic cancer is cigarette smoking. According to the American Cancer Society, approximately 30% of all pancreatic cancer cases are thought to result directly from cigarette smoking (ACS, 2000). Studies have estimated that the risk of pancreatic cancer is two to six times greater in heavy smokers than in non-smokers (Anderson et al., 1996).

Certain medical conditions, such as chronic pancreatitis, diabetes mellitus, and cirrhosis, have been associated with pancreatic cancer, but the reasons for these associations are largely unknown (ACS, 2000). More recently, a possible role for the bacteria *Helicobacter pylori*, which causes ulcers and some gastric cancers, has been suggested in the development of pancreatic cancer (Stolzenberg-Solomon et al., 2001).

There is also some evidence to suggest that certain dietary factors may be related to the development of pancreatic cancer. Increased risks of pancreatic cancer may be associated with animal protein and fat consumption as evidenced by higher rates of this cancer in countries whose populations eat a diet high in fat (ACS, 2005). Decreased risks for the disease are usually associated with fruit and vegetable consumption (ACS, 2000). Obesity is also a risk factor for pancreatic cancer (ACS, 2000). Although older studies suggested that coffee and alcohol consumption may be risk factors, more recent studies do not support this association (Michaud et al., 2001).

Numerous occupations have been investigated for their potential role in the development of pancreatic cancer, but studies have not produced consistent results. Heavy exposure to certain pesticides (including DDT and its derivatives) may increase the risk of pancreatic cancer (ACS, 2000; Ji et al., 2001; Porta et al., 1999). Exposure to certain dyes and certain chemicals related to gasoline, in addition to asbestos and ionizing radiation, have also been associated with the development of pancreatic cancer in some studies, however, other studies have found no link between these agents and pancreatic cancer (ACS, 2000; Anderson et al., 1996). A recent evaluation of data from several studies has implicated organic solvents (e.g., chlorinated hydrocarbons and polycyclic aromatic hydrocarbons), nickel compounds, and chromium

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compounds in the development of pancreatic cancer, but further studies are needed to corroborate this claim (Ojajarvi et al., 2000). Although occupational exposures may have played a role in the incidence of this cancer in the past, currently most newly diagnosed patients with pancreatic cancer do not have evidence of a specific chemical exposure or relevant occupational history (Evans et al., 1997).

Finally, pancreatic cancer seems to run in some families. According to the American Cancer Society, an inherited tendency to develop pancreatic cancer may account for approximately 5% to 10% of cases (ACS, 2000). Pancreatic cancer has been observed in both familial clusterings among siblings as well as in individuals of consecutive generations (Anderson et al., 1996).

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