Women's Health in Perspective
A Real Lady Killer

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Millions of dollars are spent each year on research to prevent and treat cardiovascular disease, cancer, and other diseases in order to improve health outcomes for women in the United States. The impact of this research on longevity and quality of life is significant. However, it pales in comparison to the potential impact of a single known preventable cause of most of these diseases - tobacco use. Cigarette smoking is by far the number one preventable cause of death in both men and women. While the death rate for tobacco related disease for men has leveled off, rates among women continue to rise.[1] More than 140,000 women in the United States die each year as a result of smoking related diseases, including cardiovascular disease; lung cancer; chronic lung disease; pancreatic, oral, esophageal, laryngeal, urinary, and cervical cancers; and lower respiratory infections.[2,3]

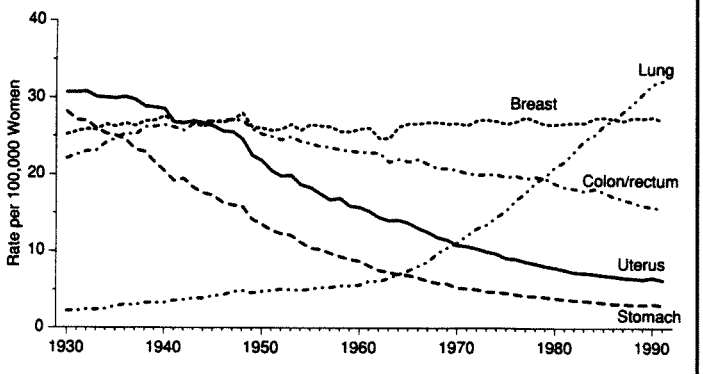
Cardiovascular Disease

Cardiovascular disease, particularly coronary heart disease and stroke, is the major cause of death among women in the United States and in most developed countries. Cigarette smoking is the leading preventable risk factor for CVD in women, with more than 50% of myocardial infarctions among middle-aged women attributed to tobacco.[4] Carbon monoxide, which inhibits oxygen transfer to the blood, and nicotine, which increases the heart rate and blood pressure, are just two of the multiple factors in smoking that increase the risk of myocardial infarction. Women smokers who also take oral contraceptives have a 10-fold increased risk of myocardial infarction compared to nonsmoking women.[5]

Cancer

Tobacco use accounts for nearly one third of all cancer deaths, and more than 80% of lung cancer can be directly attributed to cigarette smoking. Between 1960 and 1990, the lung cancer death rate among women increased by more than 500%, and the rate is continuing to rise. While much recent attention and funding have been targeted to breast cancer, mortality from breast cancer is declining by 1-2% annually. Less known is the alarming fact that lung cancer surpassed breast cancer in 1987 as the number one cause of cancer death in women.[6] (Figure 1.) The American Cancer Society estimates that in 1999, lung cancer will kill 68,000 women and breast cancer will kill 43,300 women.[1]

Figure 1. In 1987 Lung Cancer surpassed Breast Cancer as Number One cause of Cancer Death in Women



Source: American Cancer Society.
*Rates are adjusted to the 1970 census population.

Recent studies have discovered an interesting phenomenon demonstrated by an unusual increase in lung adenocarcinoma; nearly 17-fold in women and nearly 10-fold in men. Lung adenocarcinoma has replaced squamous cell carcinoma as the most common histologic subtype of lung cancer. Since such changes in cancer type are rarely observed, scientists have found this perplexing for years. Researchers now attribute this change in histopathology to the manufacturer's modification in cigarette composition and gender selection choices. High-tar, nonfiltered cigarettes, generally preferred by men, are perceived as too toxic and harsh for smokers to inhale deeply. The inhalation of such high-tar cigarettes tends to deposit the carcinogenic agents in the more central regions of the lung leading to the development of squamous cell tumors. In contrast, smokers of filtered low-yield cigarettes (advertised as light, mild, low tar/nicotine, etc.) inhale more deeply and develop adenocarcinomas at the lung's periphery. This hypothesis is offered to explain why women, who have historically smoked filtered low-yield cigarettes, are having a higher prevalence of adenocarcinoma.[7,8]

Tobacco use is also a major risk factor in cancers of the mouth, throat, esophagus, kidney, pancreas, bladder and cervix.

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Respiratory Diseases

In addition to cancer, tobacco smoking is responsible for non-neoplastic bronchopulmonary disorders and increased frequency of respiratory symptoms and illnesses. The death rate due to chronic obstructive pulmonary disease among women who smoke is also on the rise. Nearly 80% of persons with emphysema are current or former smokers. The prevalence of chronic bronchitis, chronic cough and sputum production varies directly with the number of cigarettes smoked daily.[9]

Environmental tobacco smoke causes lower respiratory tract infections in adult women as well as chronic middle ear disease, reduced lung function, exacerbation of existing asthma, and increased risk of new cases of asthma among children.[10] Every year in the U. S. between 8,000 and 26,000 children are diagnosed with asthma attributed to mothers who smoke at least 10 cigarettes a day. Between 200,000 and 1 million asthmatic children have their condition worsened by exposure to second hand smoke.[11]

Reproductive Health

Women of reproductive age face increased adverse consequences of smoking. The irony is that smoking rates are highest among women at the height of their childbearing years (age 25-44.) Several epidemiologic studies have suggested that smoking decreases fecundity in women. The probability of conceiving per cycle is reduced by one-third.[12,13,14] Smoking is further associated with premature menopause. Women smokers experience menopause from one to three years earlier than nonsmokers.[12,15]

Smoking during pregnancy is causally linked to intrauterine growth retardation, fetal loss, low birthweight infants, respiratory distress syndrome and other respiratory conditions of the newborn, and sudden infant death syndrome (SIDS).[16,17,18] The risk of SIDS is twice as high for infants born to women who smoked during pregnancy and higher yet among infants exposed to postnatal smoking.[14]

Approximately 18%-20% of pregnant women in the United States smoke during pregnancy.[19] Data reveal that although one-third of women who smoke at the beginning of pregnancy will quit smoking for the duration of the pregnancy, 60% of these women relapse within the first 6 months postpartum, and 80%-90% will return to smoking by 12 months postpartum.[20] Women who smoke expose their infants to tobacco in the postnatal period. This exposure increases respiratory diseases in newborns, infants, and children. Children of smoking mothers are also more likely to become smokers themselves.[21]

Despite the known health risks, women continue to smoke at high rates. In the United States, 22% of women are smokers.[22] In Hawaii, 17% of women over 18 years of age are current smokers,[23] but the statistics for adolescent girls are particularly alarming. Thirty-one percent of high school girls in Hawaii are frequent smokers compared to 27% of high school boys. The level rises to 38% of 12th grade girls who report frequent smoking.[24]

What can physicians do?

Women initiate smoking for many reasons including social acceptance, body image and weight control. The tobacco industry has done an outstanding job of appealing to the insecurities of adolescence and equating smoking to emancipation, success, beauty, and

Figure 2. Smoking Intervention Model

ASK About Smoking at Every Visit

- ✓ Document by vital signs stamp, progress notes, computerized record, or chart stickers.

ADVISE All Smokers to Quit

- ✓ Advice should be *clear, strong* and *personalized.*

ASSIST Smokers in Quitting

- ✓ Assess motivation to make a quit attempt:

Ready to Quit Now:

- ✓ Identify *reasons* for wanting to quit.
- ✓ Develop a *quit* plan:
  - set quit date within 2 weeks
  - review previous quit attempts
  - identify smoking triggers and anticipated challenges
  - brainstorm strategies
  - inform family, friends and coworkers
- ✓ Provide *self-help* materials and *referrals.*
- ✓ Encourage *nicotine replacement therapy* (patch, gum, nasal spray, inhaler) or *non-NRT* (bupropion-SR) unless contraindicated.
- ✓ Give *advice* on successful quitting: total abstinence; avoid alcohol; have a plan for dealing with smokers in the house.

Not Ready to Quit Now:

- ✓ Use the 4Rs to enhance motivation to quit:
  - *Relevance*- Provide patient-specific information.
  - *Risks*- Ask Patient to identify the negative consequences of smoking.
  - *Rewards*- Ask patient to identify benefits of quitting.
  - *Repetition*- Repeat every visit.

ARRANGE Follow-up

If Quit (Relapse Prevention):

- ✓ *Congratulate, encourage* maintenance.
- ✓ Review *benefits* from cessation.
- ✓ Review *problems* encountered, offer possible *solutions.*
- ✓ *Anticipate* problems or *threats* to maintenance(weight gain, depression, prolonged withdrawal, lack of support).
- ✓ Timing: Contact soon after quit date, preferably during first week, and within first month; further follow-up as needed.

If Quit Attempt unsuccessful:

- ✓ Ask for *recommitment* to total abstinence.
- ✓ Remind patient to use lapse as a *learning experience.*
- ✓ Review *circumstances* that caused lapse.
- ✓ Develop *new* plan with patient.
- ✓ Timing: Contact soon after NEW quit date, preferably during first week; further contacts as needed based on new quit plan.

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other desirable characteristics. Adolescents are unaware that they are being manipulated by the clever and seductive marketing.

Physicians play a key role in affecting smoking behavior. Over 70% of adult female patients want to stop smoking, but only half of them have been urged to quit by their physician or other health care provider.[25] Physician advice has been shown to be the most important factor in getting patients to initiate smoking cessation.

Recommendations on smoking cessation from the Agency for Health Care Policy and Research (AHCPR) are summarized in a Smoking Intervention Model (Figure 2.) provided by the Center for Tobacco Prevention and Control, Preventive & Behavioral Medicine at the University of Massachusetts Medical School. Copies of the full report, *Clinical Practice Guideline on Smoking Cessation*, and guideline products are available by calling AHCPR Publications Clearinghouse toll-free at 800-358-9295 or writing: AHCPR Publications Clearinghouse, P.O. Box 8547, Silver Spring, MD 20907.

Pharmacotherapy using nicotine replacement and/or bupropion has expanded effective treatment options for physicians. Combining pharmacotherapy with intensive behavior interventions further increases abstinence rates.[26]

Physicians who deal with women's health can contribute more to health care outcomes by advising women to stop smoking than by any other single intervention. When we put the entire spectrum of women's health in perspective, tobacco is a real lady killer!

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