



# **Tobacco Facts & Figures** 2003



**Great West Division** 

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### **Agencies Contributing Data**

Cancer Data Registry of Idaho P.O. Box 1278 Boise, Idaho 83701-1278 http://www.idcancer.org/ 208.338.5100 x213

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#### YRBS

HIV, AIDS & Health Education Idaho Department of Education 650 W. State St. P.O. Box 83720 Boise, Idaho 83720-0027 208.332.6950

### Acknowledgements

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# **Tobacco-Related Diseases Kill Half of All Smokers**

More than 20 years ago, a U.S. Surgeon General's Report stated "Cigarette smoking is the major single cause of mortality in the United States." This statement is as true today as when it was written in 1982. Tobacco causes many types of cancer, and when cancer statistics are combined with other smoking-related diseases, cigarette use kills half of all continuing smokers.

Tobacco-related cancer is a major public health problem in Idaho. To help make sense of tobacco use and related cancers, the American Cancer Society presents *Tobacco Facts & Figures 2003*. This publication provides benchmarks to measure progress towards the American Cancer Society's challenge goals for major reductions in cancer deaths and incidence and improvement in quality of life for cancer survivors. It is our hope that it will also assist American Cancer Society volunteers and staff, local community groups, health professionals, and others in Idaho in providing educational programs and informational services to the public, cancer patients, and their families.

For more information you can trust about tobaccorelated cancer, contact your American Cancer Society at 1.800.ACS.2345, or visit our website at www.cancer.org.

*"If I Hadn't Been Diagnosed with Cancer, I'd Still be Smoking"* 

Sharon Jackson Age 58 Cancer Survivor Lewiston, Idaho

Sharon Jackson began smoking as a teenager, because she thought it eased her stress and relaxed her. But it also damaged her health–almost irrevocably. Today, she is tobacco-free, but not before enduring a fierce battle for her life.

In 1997, 52-year-old Sharon reeled in disbelief when her doctor broke the startling news; she had oral cancer. Shocked, ashamed, and frightened, it was days before Sharon was able to summon the courage to tell her children the distressing news. Afterward, her shock and disbelief turned to anger.

"I didn't think I had any of the risk factors. Growing up, the Marlboro Man was a picture of good health, and it was seen as exciting to smoke. I never thought that I would get cancer. I didn't believe that it could happen to me," Sharon said.

Although she's had a long road to recovery, Sharon feels incredibly lucky to be a cancer survivor. In part, Sharon attributes her survival to the anger she felt upon her diagnosis. Her anger was directed toward cigarette manufacturers and the people who marketed them, but mostly toward her herself.

"I got angry at myself for smoking and for the healthrelated problems that the cigarettes caused," said Sharon. She poignantly added, "Yet I know that if I hadn't been diagnosed with cancer, I would still be smoking."

Today, Sharon is passionate about living tobacco-free and has turned her negative experiences with smoking into a positive. She often speaks to Boys & Girls Clubs, educating children about the very real dangers associated lighting that first cigarette. She says that she knows she is making a difference, and offers this simple advice to smokers: "Stop to think about your life. What is smoking doing to your body? It causes so many problems...and the costs are enormous."

### "Bowling Alley Goes Smoke-Free"

Sunset Bowling Smoke-Free Company Couer d'Alene, Idaho



On July 1, 2003, Sunset Bowling Alley joined the everincreased number of restaurants, lounges, and other communal gathering places to go smoke free.

Debbie King, manager of Sunset Bowling, says that the decision was made in the interest of promoting the good health of their employees and customers. The results have been outstanding. Since July, business has increased, and by-and-large, bowlers have been accepting of the change. And even though some of the business's customers and employees still smoke, they have been cooperative in maintaining a smoke-free environment.

"Several of our bowlers have commented that the change has helped support their ability to quit smoking," Debbie said. "Many of our customers have also told us that they the center smells better and they enjoy bowling more."

Employees are happy with their new smoke-free workplace, too. In fact, in conjunction with the change, Sunset Bowling also offered its employees paid time off to attend smoking cessation programs and classes. This has proved to be successful program for the company and has already benefited employees. "Even those that still smoke have cut down," Debbie added.

Overall, the change has been well worth the time and effort spent converting the facility, and Debbie urges other businesses to follow suit.

"Just do it!" she said. "Go forward with your plans. Offer your employees the opportunity and resources to quit. It is well worth it!"

# **Tobacco Use in Idaho is Not Decreasing**

### **Smoking Behavior:**

In 2001, more current female smokers smoked every day than males in Idaho. In previous periods of time the percent of male smokers who reported smoking every day was 32.6%. In 2001 (Figure 1) the percent of women currently smoker was higher than the percent of male current smokers.

### **Smokeless Behavior:**

In Idaho, the percent of men reporting current use of any smokeless tobacco products such as chewing tobacco or snuff increased to 19.8% in 2000 (Figure 2).

### **Smoking During Pregnancy:**

Tobacco has proven damaging effects on women's health and is associated with increased risk of miscarriage, preterm delivery, stillbirth, and infant death, and is a cause of low birth weight in infants. In fact, smoking during pregnancy is responsible for 17.0% to 26.0% of low-weight births (< 2500 g), and has been identified as the single largest changeable risk factor for low-birth weight (1).



Figure 1

In 2002, 10.1% of pregnant Idaho women smoke compared to 12.0% nationally, and the State is ranked 15th (1=low) in terms of maternal smoking during pregnancy (Figure 3). It is estimated that each year, smoking during pregnancy negatively affects 2,000 births in Idaho with health-related costs of \$2.3 million dollars annually (2).







Figure 3

# Youth Tobacco Use in Idaho

Studies show that the younger people begin to smoke, the more likely they are to be smokers as adults. Nearly all first use of tobacco occurs before high school graduation. Youth tobacco addition is similar to that of adults in most every way. Children and adolescents who smoke develop coughs, produce phlegm, have more respiratory illnesses, poorer physical fitness, increased risk for cardiovascular disease, and decreased lung growth and function. Furthermore, young people are the chief source of new consumers for the tobacco industry, which each year must replace the many consumers who quit smoking and those who die from smoking-related diseases.

In Idaho, about 19.0% of high school students reported smoking (Figure 4) and 14.3% of high school males reported using smokeless or spit tobacco (Figure 5). Each year 3,700 Idaho kids (under 18) become new daily smokers.

The percent of students in Idaho who have tried cigarette smoking even one or two puffs, was 57.6% male students and 50.6% female students in 2001(Figure 6).





Figure 5



Figure 4



Figure 6

However, only 14.6% of students reported smoking cigarettes daily in the past 30 days. The percent of daily smokers was higher in higher grades (Figure 7). One in five students reported smoking a cigarette before age 13 in 2001. In addition, 61,000 kids are exposed to secondhand smoke at home.

Approximately 60.0% of all students who were current smokers in 2001 tried to quit smoking at least once during the previous year. More males tried to quit smoking than did females (Figure 8).





Figure 7





Figure 8

# What is Lung Cancer?

Cancers are a group of diseases that cause cells in the body to change and grow out of control. Most types of cancer cells form a lump or mass called a tumor, and are named after the body part where the tumor first starts. Most lung cancers start in the lining of the bronchi (airways) but they can also begin in the trachea (windpipe), bronchioles (small airways), or alveoli (air sacs). Lung cancer often takes many years to develop.

The seriousness of a lung cancer diagnosis is influenced by its stage, meaning how far the cancer has spread on initial diagnosis. Lung cancer is very difficult to detect when it is localized, in the earliest, most treatable stage. Local stage describes cancers confined to the lung. As the cancer grows, cancer cells can break away and spread to other parts of the body in a process called metastasis. Regional stage describes cancers that have spread to the lymph nodes. Distant stage cancer is often a life-threatening disease because it is often discovered after it has spread in this way, when it becomes very difficult to treat successfully.

#### **Bottom Line:**

Lung cancer is the leading cause of cancer death for both men and women (3).

Nationally, about 87.0% of lung cancer deaths are caused by smoking, and it accounts for approximately 6.0% of all deaths in the United States each year. More people die of lung cancer than of colon, breast, and prostate cancers combined (4).

Lung cancer is the most common cancer in the world, even though it is preventable in most cases. People who have smoked all their lives have a lung-cancer risk 20-30 times greater than non-smokers. However, for individuals who quit smoking, the risk of lung cancer decreases every year they remain non-smokers (5).

In the United States, cigarette smoking alone causes approximately 30.0% of cancer deaths. In addition to lung cancer, each year, cigarette smoking is responsible for 64,735 deaths due to chronic obstructive lung disease and 81,976 deaths due to coronary heart disease. Nationally, every year, an estimated \$157 billion in health-related economic losses are attributable to smoking In Utah, this means that each year \$273 million dollars is spent on indirect health care costs linked to tobacco usage (6).

#### **Cancer Burden:**

Nationwide, an estimated 171,900 new cases of lung and bronchus cancer and 157,200 deaths due to lung & bronchus cancer are expected to occur in the United States during 2003. It is expected that 600 persons will develop lung and bronchus cancer in Idaho in 2003.



# Lung Cancer is Usually Detected Late and is Deadly

### **Bottom Line:**

Most patients who receive an initial diagnosis of lung cancer have advanced stage disease, making a cure unlikely. In contrast, individuals with early stage disease may be cured using surgical procedures. Men have higher risk: In general men are a higher risk of developing lung cancer than women (7).

### **Idaho Rates:**

In Idaho from 1990 to 2001, the average incidence and mortality rates of lung cancer were higher for males than females in each of the seven Health Districts. Health District one for had the highest incidence and mortality rates for both men and women, while Health District seven had the lowest incidence and mortality rates (Table 1).



#### Idaho Cancer Incidence and Mortality Rates by Gender, Health District, Average 1990-2001

	Avg. Inc. (male)	Avg. Inc. (female)	Avg. Mort. (male)	Avg. Mort. (female)
Health District 1	87.9	61.5	78.2	51.3
Health District 2	76.5	45.5	62.9	36.6
Health District 3	79.7	42.5	62.2	36.5
Health District 4	82.7	46.5	69.9	37.2
Health District 5	67.0	34.8	56.6	28.8
Health District 6	53.7	23.9	48.9	21.3
Health District 7	49.5	23.3	40.7	19.0

Source: Cancer Data Registry of Idaho.

Rates are per 100,000 and age-adjusted to the 2000 U.S. (18 age groups) standard.

#### Idaho Cancer Incidence and Mortality Counts by Gender, Health District, Average 1990-2001

	Avg. Inc. (male)	Avg. Inc. (female)	Avg. Mort. (male)	Avg. Mort. (female)
Health District 1	67.1	54.3	58.7	45.0
Health District 2	36.1	24.9	29.3	20.1
Health District 3	60.2	38.4	27.1	18.7
Health District 4	82.7	59.4	68.4	47.7
Health District 5	46.6	28.9	38.9	23.9
Health District 6	32.0	16.4	28.8	15.1
Health District 7	27.2	14.8	21.9	12.1

Source: Cancer Data Registry of Idaho.

Rates are per 100,000 and age-adjusted to the 2000 U.S. (18 age groups) standard.

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# **People Live Longer if They Quit Smoking**

More than one-half of men who continue to smoke will die during middle age compared with 22.0% of never smokers and 23.0% of former smokers who quit before age 40. A similar difference in the risk of death in middle age is seen when comparing women who currently smoke (25.0%) compared to those who have never smoked or quit before age 40 and remain non-smokers (15.0%) (Figure 9).

People who stop smoking at younger ages experience the greatest health benefits from cessation; those who quit by age 35 avoid 90.0% of the risk attributable to tobacco (8). However, even smokers who quit after age 50 substantially reduce their risk of premature death. It is absolutely untrue that it is too late to quit smoking because the damage has already been done.

#### Screening For Lung Cancer:

Lung Cancer Screening Past screening studies using chest X-ray and sputum cytology have not been effective methods for early diagnosis in individuals who received screening. However newer studies using low-dose spiral CT (LDCT) are showing promising results of detecting lung cancer at an earlier stage (nodules as small as 5mm versus 10mm for chest X-ray). It is hoped that further research will find that CT screening may improve survival and decrease mortality from lung cancer as a result of earlier detection (9). For more information on this clinical trial contact your American Cancer Society at 1.800.ACS.2345, or visit our website at www.cancer.org.

#### **Reasons to Quit Smoking:**

More Americans are killed by cigarettes than alcohol, car accidents, suicide, AIDS, homicide, and illegal drugs combined. And because cigarette smoking and tobacco use is an acquired behavior that individuals choose, smoking is the most preventable risk factor leading to premature deaths in our society. Besides being the biggest cause of lung cancer, smoking is also a major cause of heart disease, bronchitis, emphysema, and stroke, and contributes to the severity of colds and pneumonia. Furthermore, secondhand cigarette smoke has a harmful effect on those around the smoker.



### Health benefits of guitting smoking include:

 Smokers who quit, regardless of age, live longer than people who continue to smoke.

• Smokers who quit before age 50 have half the risk of dying in the next 15 years compared with those who continue to smoke. Those who quit by age 35 avoid 90.0% of the risk attributable to tobacco.

 Quitting smoking substantially decreases the risk of cancer of the lung, larynx, pharynx, esophagus, mouth, colon, pancreas, bladder, and cervix.

• Quitting smoking reduces the risk of other major diseases including coronary heart disease, lung diseases, and cardiovascular disease.

Besides these direct health benefits, there are many other important reasons to quit smoking or end a dependence on other forms of tobacco (6):

• Escaping the high cost of addiction (\$1,800-\$3,000 saved annually, assuming a pack-a-day habit)

• Eliminating tobacco exposure of the fetus during pregnancy and during childhood

 Living long enough to achieve certain ambitions and lifetime milestones

 Avoiding abandonment of one's spouse and family due to premature death

- Ending the embarrassment of being dependent
- Providing a positive example for children and others
- Reducing the fear of the diseases caused by smoking

Did you know? About one third of the male adult global population smokes



Figure 9



Figure 9

# Early Diagnosis of Lung Cancer Improves Survival

In Idaho, in the period 1997-2001, about 13.0% of patients with lung cancer were alive five years after diagnosis. Patients with localized tumors had the highest five-year relative survival (44.2%) followed by those whose cancer spread regionally (16.5%). Only 2.8% of patients with lung cancer with distant metastasis were alive five years after diagnosis (Figure 10).

**Did you know?** Half of long-term smokers will die from tobacco. Every cigarette smoked cuts at least five minutes of life on average–about the time taken to smoke it. Five Year relative survival by Stage at Diagnosis, Lung Cancer, Idaho, 1993-1997



Figure 10

# Programs to Help Smokers Quit Are Cost Effective

Programs designed to help smokers quit provide large health benefits at a relatively low cost. An analysis of the cost effectiveness of implementing the 1996 Agency for Health Care Policy and Clinical Practice Guideline for cessation (9) revealed that cost-per-quality-adjusted-life-yearsaved ranged from \$1,108 to \$4,542 (10). These calculations do not take into account the higher costs of medical care and hospitalization among smokers compared to nonsmokers. Savings from reduced healthcare costs would probably pay for effective cessation interventions within three to four years. Thus, growing evidence suggests that employer-sponsored and government-funded health plan coverage of counseling and pharmacotherapy to help patients quit smoking is beneficial from both a cost and health perspective (11,12).



Figure 11

# Programs to Help Smokers Quit Are Cost Effective

**Did you know?** About 15 billion cigarettes are sold daily–or 10 million every minute.

### **Smoking is a True Addiction:**

Stopping smoking represents the single most important step that smokers can take to enhance the length and quality of their lives, however, quitting smoking is difficult. Tobacco use is a true addiction, similar to the dependence caused by opiates, amphetamines, and cocaine (9). Furthermore, tobacco dependence is a chronic condition that often requires repeated clinical intervention, just like other addictive behaviors.

Figure 12 shows the percent of Idaho smokers who were able to quit and maintain quitting for variable lengths of time. From 1995 to 2000, the percent of female daily smokers who were able to quit and maintain quitting was greater than the percent of male daily smokers who have quit during the same time (Figure 11). Repeated attempts, multiple approaches, and ongoing support are essential to quitting for good. But the difficulty in quitting is worth the end result. Exsmokers enjoy a higher quality of life with fewer illnesses from cold and flu viruses, better self-reported health status, and reduced rates of bronchitis, pneumonia and cancer. Daily smokers who were able to quit smoking for at least 6-12 months, by gender, Idaho adults 18 and older, 1995-2000



Figure 12

# **Key Factors for Quitting Smoking**

**Physician intervention:** Even brief counseling by a primary care physician or other health care professional can help encourage smokers to quit (13). Health care provider counseling may be as simple as advising a smoker to quit, or as complex as using computers to tailor the intervention to the individual smoker. Physician counseling motivates individual smokers to consider the ill effects of smoking and to change. However, most smokers cannot stop without more intensive help.

More than 70.0% of smokers visit a doctor each year. However, only 33.0% of all adults who talked to a doctor or health care professional within the previous year were asked if they smoked or used tobacco (14).



# **Key Factors for Quitting Smoking**

**Drug therapy:** There are five first-line, FDA-approved drug therapies for tobacco dependence: an oral sustained-release Bupropion Hydrochloride (Zyban<sup>\*</sup>), nicotine gum, nicotine inhaler, nicotine nasal spray, and nicotine patch (see Table 2). The evidence is strong and consistent that pharmacologic treatments for smoking cessation can help people to quit smoking (10:15). In addition, it appears that many smokers trying to quit by using over-the-counter cessation aids (i.e., nicotine patches and gums) are not using these products appropriately. This makes successful quitting more difficult (16).

**Counseling:** Counseling and behavioral therapies can be especially effective in treating tobacco dependence. This includes practical counseling in problem-solving skills and social support. Counseling can be provided by telephone or in individual group settings. Studies show that behavioral counseling therapies achieve long-term abstinence in 12.0%-18.0% of smokers in a single quit attempt (17). In Idaho, the American Cancer Society provides referrals to free or low-cost tobacco cessation programs. For more information about this program call 1.800.ACS.2345.

Despite the availability of effective therapies to help people quit smoking, recent data show that these are not used as much as they could be. Most people who attempt to quit smoking cite "will power" alone to decrease the number of cigarettes smoked, or they quit "cold turkey". See Table 2 for various quitting methods and options that can be incorporated into your attempt to achieve a tobacco free lifestyle.

**Did you know?** Cigarettes cause more than one in five American deaths.

Recommended Pharmacotherapies for Smoking Cessation Pharmacotherapy	Duration	Cost per Day (in 2000)	Estimated Abstinence Proportion* (95% C.I.†)
<b>First line (FDA approved):</b> <b>Bupropion (Zyban<sup>®</sup>):</b> It is an (non-nicotine based) antidepresessant. This drug can help to reduce nicotine withdrawal symptoms and the urge to smoke. Some common side effects are dry mouth, difficulty sleeping, dizziness, and skin rash. Contraindicated if History of Seizure. Availability: Prescription only with a doctor consultation	7-12 weeks maintenance up to 6 months Start 1 -2 weeks before the quit date	\$3.33	30.5 (23.2, 37.8)
Nicotine gum: Chewing gum releases nicotine into the bloodstream through the lining of the mouth. Nicotine gum might not be appropriate for people with temporomandibular joint disease or for those with den- tures or other dental work. Up to 2 mg dose if less than 25 cigarettes/day; 4 mg dose if >= 25 cigarettes/day Availability: Over the counter (OTC)	Up to 12 weeks	\$6.25 for 10 (2-mg pieces) \$6.87 for 10 (4-mg pieces)	23.7 (20.6, 26.7)
<b>Nicotine inhaler:</b> This device delivers a vaporized form of nicotine to the mouth through a mouthpiece attached to a plastic cartridge. Most of the nicotine travels to the mouth and throat, where it is absorbed through the mucous membranes. Common side effects include throat and mouth irritation and coughing. Anyone with bronchial problems should use it with caution. Availability: Prescription only with a doctor consultation	Up to 6 months	\$10.94 for 10 cartridges	22.8 (16.4, 29.2)
Nicotine nasal spray: The spray comes in a pump bottle containing nicotine that tobacco users can inhale when they have an urge to smoke. This product is not recommended for people with nasal or sinus conditions, allergies, or asthma, nor is it recommended for young tobacco users. Availability: Prescription only with a doctor consultation Table 2	3-6 months	\$5.40 for 12 doses	30.5 (21.8, 39.2)

Recommended Pharmacotherapies for Smoking Cessation Pharmacotherapy	Duration	Cost per Day (in 2000)	Estimated Abstinence Proportion* (95% C.I.†)
<b>Nicotine patch:</b> It supplies a steady amount of nicotine to the body through the skin. The nicotine patch is sold in varying strengths as an 8-week smoking cessation treatment. Nicotine doses can be regularly lowered as the treatment progresses or given as a steady dose during treatment. The nicotine patch may not be a good choice for people with skin problems or allergies to adhesive tape.	4 weeks then 2 weeks then 2 weeks	\$4.22	17.7 (16.0, 19.5)
Availability: Either over the counter (OTC) or by prescription with a doctor consultation	8 weeks	\$4.51	
Second-line (not FDA approved): Clonidine: There is evidence to suggest that it is also capable of improving smoking cessation rates. Although clonidine may reduce craving for ciga- rettes after cessation, it does not consistently ameliorate other withdrawal symptoms. Unpleasant side effects appear common with clonidine use. Availability: Prescription only for both for the patch and oral formulation	3-10 weeks	\$0.24 for 0.2 mg (oral for- mulation) \$3.50 (for a patch)	25.6 (17.7, 33.6)
<b>Nortriptyline:</b> There is evidence to suggest that this drug is also effective in smoking cessation. However, this form of anti-depressant produces a number of side effects, including sedation and dry mouth. Availability: Prescription only with a doctor consultation	12 weeks	\$0.74 for 75 mg	30.1 (18.1, 41.6)

Table 2

\*The estimated abstinence proportion was derived from a statistical meta-analysis of published studies. All these studies had at least five months of follow-up after the quit attempts and included a placebo group

 $\ensuremath{^+\!Confidence}$  Interval (C.I.): A range of possible values for the estimated proportion.

A 95% CI will contain the true value 95 out of 100 samples surveyed. A 95% CI is commonly reported.

Sources: The information contained in this table provides a briefly descriptive and was adapted from the published medical articles.[8] The prices were based on retail prices at a national chain pharmacy, located in Madison, Wisconsin, April 2000.

# **Tobacco, the Law and Policy**

### **Illegal Purchases by Youth:**

In 2001, 4.5 % of male students and 1.8 % of female students less than 18 years old who were current smokers reported purchasing cigarettes at a store or gas station during the past 30 days (Figure 13). Of those who reported purchasing cigarettes from a store, 5.3 % of males and 1.4 % of females were not asked to show a proof of age (Figure 14).

#### **Taxes on Cigarettes:**

Idaho's excise tax is only 57 cents per pack. Nationally, the average tax per pack is 70.5 cents; Idaho ranks 27th out of the 50 states. In 2003, Idaho had a smoking rate of 19.1 % for youth (18) and 19.7 % of Idaho adults (19). Research shows conclusively that higher prices for cigarettes reduce consumption; for example, a price increase of 10 percent decreases overall tobacco use by approximately 4.0 % (20). The decrease is significantly higher among youth and individuals of lower socio-economic status (21).

### **State Tobacco Control Initiatives:**

Idaho received \$16.3 million in tobacco generated revenue last fiscal year as a result of the Master Settlement Agreement with the tobacco industry. The Centers for Disease Control and Prevention (CDC) recommends that

Percentage of Idaho high school students who were current smokers and purchased cigarettes at a store or gas station during the past 30 days, by grade and gender, 2001 Female Total Male 20 15 Percent (%) 10 9th 10th 11th 12th ID overall Grade Source: Youth Risk Behavior Survey, Idaho

Figure 13

Idaho should receive between \$11 million and \$24.1 million in state funding to enact an effective, comprehensive tobacco prevention program. However, Idaho has only budgeted \$766,000 thousand for these initiatives in 2003-2004 (22).

**Did you know?** 3.3 million packs of cigarettes are bought or smoked by kids in Idaho each year.

Reducing tobacco use, providing education on cessation options, reducing youth access, utilizing effective methods to reduce illegal tobacco purchases by youth and increasing the percentages of money that the state of Idaho spends on tobacco initiatives will improve the health and welfare of the citizens of Idaho now and in years to come. It is difficult to fight any addiction, and smoking is no different.

However, the proof that it can be done lies with the more than 40 million Americans who have successfully quit smoking. So just do it! As Nancy says, "If I can do it, you can too!" Start today and make this year the one in which you take back the control of your life and of your health.

If you want to quit smoking and need help, talk with your health care provider or call the American Cancer Society at 1.800.ACS.2345. They can provide you with current information, advice, and suggestions for beginning the end of your tobacco use. Don't wait...do it today!



Figure 14

### **Data Sources**

Cancer incidence and survival data are based on cases reported to each state's Central Cancer Registry (CCR) and the underlying cause of death reported by each state's Office of Vital Statistics. U.S. mortality rates are from the Bureau of Vital Statistics. Central Cancer Registries (CCRs) are legally mandated, statewide, population-based cancer information centers. Analyses were performed by the registries. All rates are age-adjusted to the 2000 U.S. standard population. More detailed information on the status of cancer in each state is available from the state's CCR.

Risk factor data have been drawn from each state's Behavioral Risk Factor Surveillance System (BRFSS) and Youth Risk Behavior Survey (YRBS), both of which are conducted as collaborations between the Centers for Disease Control and Prevention and state departments of health or education. For states that did not have overall response rates of at least 60 percent on the Youth Risk Behavior Surveys, the data were un-weighted. Idaho's YRBS data included in this publication are weighted. The BRFSS is conducted annually and the YRBS is conducted semi annually (ever other year).

### **Definitions and Abbreviations**

**SEER summary stage definitions-** Stage of disease information is obtained from extent of disease information. The historical stage presented has four levels. An invasive neoplasm confined entirely to the organ of origin is said to be localized. An invasive neoplasm that has extended beyond the limits of the organ of origin is said to be regional. An invasive neoplasm that has spread to parts of the body remote from the primary tumor either by direct extension or by discontinuous metastasis is said to be distant. In addition, when information is not sufficient to assign a stage, an invasive neoplasm is said to be un-staged.

**Relative Survival Rate:** The relative survival rate is the survival rate observed for a group of cancer patients compared to the survival rate of persons in the general population who are similar to the patient group with respect to age, gender, race, and calendar year of observation. Relative survival adjusts for normal life expectancy (factors such as dying from accidents or other diseases). Five-year relative survival rates include persons who are still living five years after diagnosis, whether in treatment, remission, or disease-free.

ACS	American Cancer Society
BRFSS	Behavioral Risk Factor Surveillance System
CCR	Central Cancer Registry
CDC	Centers for Disease Control and Prevention
NCI	National Cancer Institute
RMD	Rocky Mountain Division
SEER	NCI Surveillance, Epidemiology, and End Results
	Program
YRBS	Youth Risk Behavior Survey

# Understanding Cancer Incidence & Mortality Rates

Cancer rates in this document represent the number of new cases of cancer per 100,000 population (incidence) or the number of cancer deaths per 100,000 population (mortality), during a specific time period.

Rates provide a useful way to compare cancer burden irrespective of the actual population size. Rates can be used to compare geographic areas such as your county to the state as a whole, or to the entire United States.

### **Age-Adjusted Rates**

Older age groups generally have higher cancer rates than younger age groups. Age-adjustment eliminates the effect of age when making comparisons. Beginning with data year 1999, agencies have adopted the 2000 projected U.S. population as a new standard for adjusting incidence and mortality rates. All the incidence and mortality rates presented in this booklet have been adjusted to the 2000 population standard.

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