







### Estimated New Cases

			Males	Females			
Prostate	238,590	28%			Breast	232,340	29%
Lung and bronchus	118,080	14%			Lung and bronchus	110,110	14%
Colorectum	73,680	9%			Colorectum	69,140	9%
Urinary bladder	54,610	6%			Uterine corpus	49,560	6%
Melanoma of the skin	45,060	5%			Thyroid	45,310	6%
Kidney and renal pelvis	40,430	5%			Non-Hodgkin lymphoma	32,140	4%
Non-Hodgkin lymphoma	37,600	4%			Melanoma of the skin	31,630	4%
Oral cavity and pharynx	29,620	3%			Kidney and renal pelvis	24,720	3%
Leukemia	27,880	3%			Pancreas	22,480	3%
Pancreas	22,740	3%			Ovary	22,240	3%
<b>All Sites</b>	<b>854,790</b>	<b>100%</b>			<b>All Sites</b>	<b>805,500</b>	<b>100%</b>

### Estimated Deaths

			Males	Females			
Lung and bronchus	87,260	28%			Lung and bronchus	72,220	26%
Prostate	29,720	10%			Breast	39,620	14%
Colorectum	26,300	9%			Colorectum	24,530	9%
Pancreas	19,480	6%			Pancreas	18,980	7%
Liver and intrahepatic bile duct	14,890	5%			Ovary	14,030	5%
Leukemia	13,660	4%			Leukemia	10,060	4%
Esophagus	12,220	4%			Non-Hodgkin lymphoma	8,430	3%
Urinary bladder	10,820	4%			Uterine corpus	8,190	3%
Non-Hodgkin lymphoma	10,590	3%			Liver and intrahepatic bile duct	6,780	2%
Kidney and renal pelvis	8,780	3%			Brain and other nervous system	6,150	2%
<b>All Sites</b>	<b>306,920</b>	<b>100%</b>			<b>All Sites</b>	<b>273,430</b>	<b>100%</b>

**FIGURE 54-1** U.S. cancer statistics, 2013: estimated new cases and deaths. Estimates are rounded to the nearest 10 and exclude basal cell and squamous cell skin cancers and in situ carcinoma except urinary bladder. (Modified from Siegel R, Naishadham D, Jemal A: Cancer statistics, 2013. CA Cancer J Clin 63:11–30, 2013 [Figure 1]. Available at <http://onlinelibrary.wiley.com/doi/10.3322/caac.21166/full#fig1>. Accessed June 27, 2014.)

(Table 54-1). Although genetic testing is available for several identified cancer susceptibility genes, care must be taken in selecting individuals for such testing. Genetic testing requires a reasonable understanding of cancer genetics as well as the target population along with relevant ethical, economic, and societal issues.

Acquired somatic mutations are universally identified in malignant cells, and some clearly drive the development and progression of cancer. Although random genetic mutations occur frequently, proto-oncogenes involved in cell growth and proliferation, tumor suppressor genes involved in regulation of cellular proliferation, and mismatch repair genes associated with chromosomal instability play critical roles in carcinogenesis, tumor growth, progression, invasion, and metastasis. Because the spontaneous mutation rate is relatively low, more than one mutational event is usually necessary for complete carcinogenic transformation resulting in a malignancy.

### Lifestyle

Acquired risk factors for cancer include lifestyle factors as well as occupational and other environmental exposures to carcinogenic substances. Major lifestyle risk factors include tobacco, alcohol and other dietary factors, and lack of physical activity (Table 54-2).

### Tobacco

Tobacco products are, by far, the single greatest contributor to cancer incidence and mortality worldwide. Cigarette smokers have a 20-fold or greater risk for developing cancer compared with nonsmokers, and smoking is the single largest cause of lung cancer. Tobacco accounts for one third of all cancers in the United States. Worldwide, more than 1 million people are estimated to die from tobacco-induced cancers every year. The vast majority of lung cancers are attributable to cigarette smoking, and exposure to secondhand smoke increases the risk for lung cancer