Cervical Cancer Fact Sheet

Cervical Cancer in the US[1]

Cervical cancer incidence rates have declined by more than half in recent decades, largely due to the widespread use of regular screening. Because cervical precancers have no signs or symptoms – and early cervical cancer rarely has any – it's important for people with a cervix to have regular cervical cancer screening.

Risk Factors[1, 2]

HPV. Almost all cervical cancers are caused by persistent infection with HPV. HPV-16 and HPV-18 are the subtypes most associated with invasive cervical cancer.

Other Risk Factors

- Becoming sexually active at a young age and having many sexual partners

- Smoking

- Immunosuppression, including HIV infection

- Chlamydia infection (past or current)

- Long-term use of oral contraceptives

- Having 3 or more full-term pregnancies

- Young age at first full-term pregnancy

- Intrauterine diethylstilbestrol (DES) exposure

- A family history of cervical cancer

- Lack of access to adequate health care services, including cervical cancer screening

Screening and Detection[1, 3, 4, 5]

Screening is a process used to test for cancer in people who have no symptoms. The American Cancer Society recommends the following for early detection in people who have a cervix and are at average risk for cervical cancer:

- **Cervical cancer screening should start at age 25.** Cervical cancer is rare in this age group.

- **People ages 25 to 65** should get screened with a primary HPV test* every 5 years. If a primary HPV test is not available, screening should be done with a co-test (an HPV and Pap test) every 5 years or a Pap test every 3 years.

  (*A primary HPV test is an HPV test that is done by itself for screening. The US Food and Drug Administration has approved certain tests to be primary HPV tests.)

- **People over age 65** who have had regular cervical cancer screening in the past 10 years with negative results, with the most recent test occurring in the past 3 to 5 years, should stop getting screened. People who have a history of serious cervical precancer should continue to be screened for 25 years after that diagnosis, even if screening goes past age 65.

- **People who have had a total hysterectomy** should stop screening, unless it was done as a treatment for cervical precancer or cancer.

- **People who have been vaccinated against HPV** should still follow these guidelines.

Signs and Symptoms[1, 2]

Precancers and early cervical cancers often have no symptoms. Once abnormal cells become cancerous and invade nearby tissue, the most common symptom is abnormal vaginal bleeding, which may start and stop between regular menstrual periods or cause menstrual bleeding to last longer or be heavier than usual. Bleeding may also occur after sexual intercourse, douching, a pelvic exam, or menopause. Increased vaginal discharge, pain during intercourse, and pain in the pelvic region may also be symptoms.

Prevention[2, 3, 4, 6]

The two most important preventive strategies for cervical cancer are HPV vaccination and regular screening.

- Vaccines that protect against high-risk HPV subtypes, as well as anal and genital warts, are routinely recommended for boys and girls ages 9 to 12. Children and young adults age 13 through 26 who have not been vaccinated, or who haven't gotten all their doses, should do so as soon as possible. Vaccination at the recommended ages will help prevent more cancers than vaccination at older ages.

- Regular screening in people who have no symptoms can help prevent cervical cancer through detection and treatment of precancerous lesions.

- Using condoms during sex may provide some protection from HPV infection.

- Not smoking is another way to help reduce the risk of cervical precancer and cancer.

Treatment[2, 4]

- **Precancers:** Precancerous cervical lesions may be treated with a loop electrosurgical excision procedure (LEEP); cryotherapy; laser ablation; or conization.

- **Cancers:** Invasive cervical cancers are generally treated with surgery or radiation combined with chemotherapy. Chemotherapy alone is often used to treat advanced disease. Immunotherapy or targeted therapy may be options for metastatic or recurrent cancer.

Cervical cancer in the US:

2021 estimates[1]

- New cases: 14,480

- Deaths: 4,290

- 5-year relative survival rate for localized stages: 92%

- 5-year relative survival rate for all stages combined: 66%

Quality of Life[4, 7]

Common issues affecting quality of life for people with cervical cancer include fertility and sexual changes; guilt if they have delayed screening or treatment, or for doing things that may have caused the cancer; fear of recurrence; chronic and/or acute pain; fatigue; depression; sleep difficulties; changes in what they are able to do after treatment; and the burden their cancer may have on finances and loved ones.

A cancer diagnosis can profoundly impact quality of life. **Clinicians should assess for any physical, social, psychological, spiritual, and financial issues.** Integrating palliative care can help manage symptoms, address issues, and improve quality of life. It can be offered at any time from the point of diagnosis through treatment, and until the end of life. Throughout a patient's cancer journey, it's very important for clinicians to share information and coordinate care to ensure surveillance is ongoing.

References

1. American Cancer Society. *Cancer Facts & Figures 2021*. Atlanta. American Cancer Society; 2021. Accessed at https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2021.html on January 16, 2021.

2. American Cancer Society. Cervical Cancer. 2020. Accessed at https://www.cancer.org/cancer/cervical-cancer.html on January 16, 2021.

3. Smith RA, Andrews KS, Brooks D, et. al. Cancer screening in the United States, 2019: A review of current American Cancer Society guidelines and current issues in cancer screening. *CA Cancer J Clin.* 2019; 69:184-210.

4. National Comprehensive Cancer Network, Clinical Practice Guidelines in Oncology (NCCN Guidelines®), Cervical Cancer, Version 1.2021. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/cervical.pdf on January 16, 2021.

5. Fontham, ETH, Wolf, AMD, Church, TR, et al. Cervical Cancer Screening for Individuals at Average Risk: 2020 Guideline Update from the American Cancer Society. *CA Cancer J Clin.* 2020. https://doi.org/10.3322/caac.21628

6. Saslow D, Andrews KS, Manassaram-Baptiste D, et al. Human papillomavirus vaccination 2020 guideline update: American Cancer Society guideline adaptation. *CA Cancer J Clin.* 2020; DOI: 10.3322/caac.21616.

7. Brown CG, ed. *A Guide to Oncology Symptom Management.* 2nd ed. Pittsburgh, PA: Oncology Nursing Society; 2015.

Colorectal Cancer Fact Sheet

Colorectal Cancer in the US[1]

Excluding skin cancers, colorectal cancer is the third most common cancer in men and in women. From 2013 to 2017, the incidence rate decreased by about 1% per year. However, this trend is driven by older adults, who have the highest rates, and masks increasing incidence among younger adults since at least the mid-1990s. A recent study based on national data from 2012 through 2016 showed an annual increase of 2% in individuals younger than 50 years and 1% in those 50-64 years.

Types of Colorectal Cancer[2]

Most colorectal cancers start as polyps, which might or might not develop into cancer. However, the risk for colorectal cancer increases if a polyp is larger than 1 cm, if more than 3 polyps are found, or if a polyp shows *dysplasia*.

Most colorectal cancers are adenocarcinomas. Some subtypes of adenocarcinomas, such as signet ring cell or mucinous, may have a worse prognosis.

Risk Factors[1, 2]

About 55% of colorectal cancers in the US are attributable to potentially modifiable risk factors.

Modifiable risk factors include: being overweight or obese, physical inactivity, smoking, high consumption of red or processed meat, low intake of calcium, fruits, vegetables, and whole grains, and heavy alcohol consumption.

Personal, hereditary, and medical risk factors include:

- Older age: Rates in younger adults have increased in recent years, but colorectal cancer is more common after age 50.

- Personal or family history of colorectal cancer or adenomatous polyps

- Race and ethnicity: For colorectal cancer, African Americans have the highest incidence and mortality rates in the US. Ashkenazi Jews have one of the highest risks in the world.

- Hereditary syndromes: About 5% of people who develop colorectal cancer have inherited gene mutations. These may include: Lynch syndrome (hereditary non-polyposis colorectal cancer, or HNPCC), familial adenomatous polyposis (FAP), Peutz-Jeghers syndrome (PJS), or MUTYH-associated polyposis (MAP).

- Personal history of inflammatory bowel disease

- Type 2 diabetes

Screening and Detection[1, 2, 3]

Screening is a process used to look for cancer in people who have no symptoms. The American Cancer Society recommends the following for people at **average risk** for colorectal cancer.

Regular screening should start at **age 45**. People who are in good health and with a life expectancy of at least 10 years should continue regular colorectal cancer screening through the **age of 75**. For people **ages 76 through 85**, the decision to be screened should be based on patient preference, life expectancy, overall health, and prior screening history. People **over 85** should no longer get colorectal cancer screening.

People at **high risk** based on family and/or personal history or other factors may need to start screening **before age 45**, get more frequent screening, or get specific tests. Screening can be done either with a stool-based test or a visual (structural) exam, like a colonoscopy.

Stool-based tests

- Highly sensitive fecal immunochemical test (FIT)* every year, or

- Highly sensitive guaiac-based fecal occult blood test (gFOBT)* every year, or

- Multi-targeted stool DNA test (MT-sDNA) every 3 years*

Visual exams of the colon and rectum

- Colonoscopy every 10 years, or
- CT colonography (virtual colonoscopy)* every 5 years, or
- Flexible sigmoidoscopy* every 5 years

If a person chooses to be screened with a test other than colonoscopy, any abnormal test result should be followed up with a timely colonoscopy.

Signs and Symptoms[1, 2]

Early-stage colorectal cancer patients are typically asymptomatic. Some signs and symptoms may include: rectal bleeding, blood in the stool, change in bowel habits, abdominal cramping or pain, decreased appetite, unintended weight loss, or anemia.

Prevention[1, 2]

Regular screening for colorectal cancer can help prevent it by identifying pre-cancerous polyps before they become invasive tumors.

Also, improving diet and physical activity, maintaining a healthy weight, and avoiding alcohol may help decrease the risk of colorectal cancer.

Some patients with hereditary risk factors might benefit from meeting with a certified genetic counselor to better understand their risk and make an informed decision about having genetic testing. If found to have a cancer syndrome, recommendations for earlier screening or surgery might be considered.

Treatment[2, 4, 5]

Surgery is the primary treatment for localized colorectal cancer. Radiation therapy and chemotherapy are sometimes used for initial treatment. For metastasized colorectal cancer, chemotherapy, targeted therapy, or immunotherapy may be used.

Colorectal cancer in the US:

2021 estimates[1]

New cases:

- 104,270 cases of colon cancer
- 45,230 cases of rectal cancer

Deaths:

- 52,980 from colon and rectal cancers combined

5-year relative survival rate for localized stage (Colon cancer): 91%

5-year relative survival rate for all stages combined (Colon cancer): 65%

5-year relative survival rate for localized stage (Rectal cancer): 89%

5-year relative survival rate for all stages combined (Rectal cancer): 67%

Quality of Life[2, 6]

The most common concerns patients and survivors have include chronic diarrhea or stool incontinence; pain; neuropathy; change in body image; managing daily activities if they have an ostomy; problems with intimacy or sexual dysfunction; or distress. Younger men and women might be concerned about fertility.

A cancer diagnosis can profoundly impact quality of life. **Clinicians should assess for any physical, social, psychological, spiritual, and financial issues.** Integrating palliative care can help manage symptoms, address issues, and improve quality of life. It can be offered at any time, from diagnosis until the end of life. Throughout a patient's cancer journey, it's very important for clinicians to share information and coordinate care to ensure ongoing surveillance.

References

1. American Cancer Society. *Cancer Facts & Figures 2021*. Atlanta. American Cancer Society; 2021. Accessed at https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2021.html on January 19, 2021.

2. American Cancer Society. *Colorectal Cancer*. Cancer.org. Updated June 29, 2020. Accessed at https://www.cancer.org/cancer/colon-rectal-cancer.html on January 20, 2021.

3. Wolf AMD, Fontham ETH, Church TR, et al. Colorectal cancer screening for average-risk adults: 2018 guideline update from the American Cancer Society. *CA Cancer J Clin*. 2018;68:250–281.

4. National Comprehensive Cancer Network, Clinical Practice Guidelines in Oncology (NCCN Guidelines®), Colon Cancer, Version 1.2021. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/colon.pdf on January 20, 2021.

5. National Comprehensive Cancer Network, Clinical Practice Guidelines in Oncology (NCCN Guidelines®), Rectal Cancer, Version 1.2021. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/rectal.pdf on January 20, 2021.

6. Brown, CG, ed. *A Guide to Oncology Symptom Management*. 2nd ed. Pittsburgh, PA: Oncology Nursing Society; 2015.

Lung Cancer Fact Sheet

Lung Cancer in the US[1]

Lung cancer is the second most common cancer and the leading cause of cancer death for both men and women. Lung cancer is most often caused by exposure to cigarette smoke and other airborne chemicals.

Types of Lung Cancer[2]

The 2 main types of lung cancer are non-small cell lung cancer (NSCLC) and small cell lung (SCLC) cancer.

- NSCLC accounts for about 80%-85% of lung cancers and includes adenocarcinoma, squamous cell carcinoma, and large cell carcinoma. These subtypes have similar treatments and prognoses.

- SCLC accounts for about 10%-15% of all lung cancers and tends to metastasize faster than NSCLC. About 70% of people with SCLC already have metastases when they are first diagnosed.

Risk Factors[1,2]

Tobacco use – Smoking is the leading risk factor of lung cancer, but often interacts with other factors. About 80% of lung cancer deaths are caused by smoking. For people who do smoke, a higher pack-year history can lead to an increased risk of developing lung cancer. SCLC rarely develops in people who have never smoked.

Secondhand smoke – Even if people have never smoked, exposure to secondhand smoke (SHS) can increase their risk for lung cancer.

Radon – Exposure to radon is the second-leading cause of lung cancer. Radon is found at high levels in some homes.

Asbestos – Exposure to asbestos is another risk factor for lung cancer. Exposure may occur in mines, mills, textile plants, places where insulation is used, and shipyards. People exposed to large amounts of asbestos have a greater risk of developing mesothelioma.

Other carcinogens – Exposure to air pollutants and other chemicals and substances, such as arsenic, vinyl chloride, coal products, diesel exhaust, and radioactive ores like uranium, has been shown to increase lung cancer risk.

Personal or family history – People with a personal history of lung cancer have a higher risk of developing another lung cancer. First-degree relatives of people who have had lung cancer may have a slightly higher risk of lung cancer.

Screening[2,3]

Lung cancer screening may be beneficial for certain patients at higher risk who are not exhibiting signs and symptoms. The American Cancer Society recommends yearly lung cancer screening with a low-dose CT (LDCT) scan for certain people at higher risk for lung cancer who meet all of the following criteria:

- 55 to 74 years old and in reasonably good health

- Currently smoke or have quit smoking in the past 15 years

- Have at least a 30 pack-year smoking history

- Are receiving counseling for cessation, if they currently smoke

- Have been told about the possible benefits, limits, and risks of screening with LDCT scans

- Have a facility available with experience in lung cancer screening and treatment

Signs and Symptoms[2]

Signs and symptoms of lung cancer, which usually do not appear until the cancer is advanced, include persistent cough, blood-streaked sputum, chest pain, voice change, shortness of breath, and recurrent pneumonia or bronchitis. Some people may present with Horner syndrome, superior vena cava syndrome (SVC), or a paraneoplastic syndrome.

Prevention[1, 2, 3]

Not all lung cancers can be prevented. Patient education and guidance related to risk factors can help some people reduce their risk.

- Avoiding or quitting tobacco can significantly reduce a person's risk of developing lung cancer. Exposure to SHS should also be avoided.

- Identifying people at risk for exposure to carcinogens, such as radon, asbestos, and other harmful chemicals at home or work, can lead to interventions that help prevent or minimize exposure. Monitoring indoor radon levels at home and getting homes treated, if needed, are additional strategies.

- Completing a periodic assessment for risk factors, following recommended screening guidelines, and providing health education to patients who may be at higher risk for lung cancer should be a regular part of care.

Treatment[2, 4]

NSCLC and SCLC have different treatment recommendations. Treatment options are based on the tumor subtype, stage, and molecular characteristics, along with patient comorbidities. Surgery, radiation therapy, chemotherapy, targeted therapy, and immunotherapy drugs, either in combination or alone, are common treatments that might be used. You can learn more about treatment options for the different types of lung cancer at cancer.org/cancer/lung-cancer.

Quality of Life[2, 6, 7]

Common issues affecting quality of life for people with lung cancer include the effects of cancer and its treatment, fear of recurrence, activity intolerance, chronic and/or acute pain, weakness, anorexia, cachexia, dyspnea, anemia, and fatigue.

Lung cancer in the US:

2021 estimates[1, 2]

New cases: 235,760

- 119,100 in men
- 116,660 in women

Deaths: 131,880

- 69,410 in men
- 62,470 in women

5-year relative survival rate for localized stage (NSCLC): 61%

5-year relative survival rate for all stages combined (NSCLC): 25%

5-year relative survival rate for localized stage (SCLC): 27%

5-year relative survival rate for all stages combined (SCLC): 7%

Social stigma and guilt associated with a lung cancer diagnosis and its low survival rate can cause stress, worry, or guilt that affects quality of life. Patients may feel (or be made to feel) they somehow did things to cause the cancer or make it worse, such as delaying screening or treatment or ignoring symptoms.

A cancer diagnosis can profoundly impact quality of life. **Clinicians should assess for any physical, social, psychological, spiritual, and financial issues.** Integrating palliative care can help manage symptoms, address issues, and improve quality of life. It can be offered at any time, from diagnosis until the end of life. Throughout a patient's cancer journey, it's very important for clinicians to share information and coordinate care to ensure ongoing surveillance.

References

1. American Cancer Society. *Cancer Facts & Figures 2021*. Atlanta. American Cancer Society; 2020. Accessed at https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2021.html on January 13, 2021.

2. American Cancer Society. *Lung Cancer*. Cancer.org. Last updated October 1, 2019. Accessed at https://www.cancer.org/cancer/lung-cancer.html on January 13, 2021.

3. Smith RA, Andrews KS, Brooks D, et. al. Cancer screening in the United States, 2019: A review of current American Cancer Society guidelines and current issues in cancer screening. *CA: A Cancer Journal for Clinicians*. 2019;69:184-210.

4. National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: Non-Small Cell Lung Cancer. V.2.2021. Accessed at https://www.nccn.org/professionals/physician_gls/default.aspx#nscl on January 13, 2021.

5. National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: Small Cell Lung Cancer. V.2.2021. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/sclc.pdf on January 13, 2021.

6. Web LA, McDonnell KK, Adams SA, et al. Exploring Stigma among lung cancer survivors: a scoping literature review. *Oncology Nurse Forum*. 2019; 46(4): 402-418.

7. Haylock PJ, Curtiss CP. *Cancer Survivorship: Interprofessional, Patient-Centered Approaches to the Seasons of Survival*. Pittsburgh, PA: Oncology Nursing Society; 2019.

American Cancer Society®

cancer.org | 1.800.227.2345

BBB ACCREDITED CHARITY
bbb.org/charity

Diet and Physical Activity Cancer Fact Sheet

Aside from tobacco use, the most important modifiable determinants of cancer risk are weight, eating patterns, alcohol consumption, and physical activity.

Cancers affected[1]

An estimated 18% of cancer cases and 16% of cancer deaths are attributable to the combined effects of excess body weight, alcohol consumption, physical inactivity, and an unhealthy diet. According to American Cancer Society researchers, at least 42% of newly diagnosed cancers in the US are potentially preventable.

Excess body weight

An estimated 5% of cancers in men and 11% in women can be attributed to excess body weight. Excess body weight (i.e., being overweight or obese) is associated with an increased risk of developing several types of cancer: adenocarcinoma of the esophagus, female breast (postmenopausal), colon and rectum, uterine corpus (endometrium), kidney (renal cell), liver, pancreas, stomach, meningioma, gallbladder, ovary, thyroid cancer, and multiple myeloma. Excess body weight may also increase the risk of non-Hodgkin lymphoma (diffuse large B-cell lymphoma); mouth, pharynx, and larynx cancers; male breast cancer; and fatal prostate cancer.

Alchohol consumption

An estimated 6% of cancer cases can be attributed to alcohol consumption. Alcohol consumption increases risk for cancers of the mouth, pharynx, larynx, esophagus, liver, colon and rectum, female breast, and stomach.

Cancer risk increases with alcohol volume, and even a few drinks per week may increase risk of some cancers. Alcohol consumption combined with tobacco use synergistically increases the risk of cancers of the mouth, pharynx, larynx, and esophagus far more than either drinking or smoking alone.

Physical inactivity

An estimated 3% of cancer cases can be attributed to physical inactivity. Regular physical activity decreases the risk of colon (but not rectal), female breast, and endometrial cancers, as well as kidney, bladder, esophageal (adenocarcinoma), and stomach (cardia) cancers. Greater time spent in sedentary behavior may also increase risk of other cancer types.

Dietary factors

Approximately 4% to 5% of all cancer cases and deaths can be attributed to dietary factors. Eating patterns high in red and processed meat, starchy foods, refined carbohydrates, and sugary drinks are associated with a higher risk of developing cancer (predominantly colon). Alternatively, diets with an emphasis on a variety of fruits and vegetables, whole grains, legumes, and fish or poultry and fewer red and processed meats are associated with lower risk.

ACS Guidelines on Diet and Physical Activity for Cancer Prevention[1,2]

Achieve and maintain a healthy weight throughout life

- Keep body weight within the healthy range and avoid weight gain in adult life.

Adopt a physically active lifestyle

- Adults should engage in 150-300 minutes of moderate-intensity physical activity per week, or 75-150 minutes of vigorous-intensity physical activity, or an equivalent combination; achieving or exceeding the upper limit of 300 minutes is optimal.

- Children and adolescents should engage in at least 1 hour of moderate- or vigorous-intensity activity each day.

- Limit sedentary behavior such as sitting, lying down, and watching television and other forms of screen-based entertainment.

Follow a healthy eating pattern at all ages

A healthy eating pattern includes:

- Foods that are high in nutrients in amounts that help achieve and maintain a healthy body weight

- A variety of vegetables – dark green, red, and orange, fiber-rich legumes (beans and peas), and others

- Fruits, especially whole fruits in a variety of colors

- Whole grains

A healthy eating pattern limits or does not include:

- Red and processed meats

- Sugar-sweetened beverages

- Highly processed foods and refined grain products

It's best not to drink alcohol

People who do choose to drink alcohol should limit their consumption to no more than 1 drink per day for women and 2 drinks per day for men.

References:

1. American Cancer Society. *Cancer Facts & Figures 2021*. Atlanta. American Cancer Society; 2021. Accessed at https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2021.html on January 26, 2021.

2. Rock CL, Thomson C, Gansler T, et al. American Cancer Society guidelines for diet and physical activity for cancer prevention. *CA Cancer J Clin*. 2020; 70 (4).

Ovarian Cancer Fact Sheet

Ovarian Cancer in the US[1, 2]

Ovarian cancer ranks fifth in cancer deaths among women, accounting for more deaths than any other cancer of the female reproductive system. It is more common in white women than African American women. The incidence of ovarian cancer has been slowly falling over the past 20 years.

Types of Ovarian Cancer[2, 3]

About 90% of ovarian cancers are epithelial, the majority of which are high-grade serous tumors, and have the fewest established risk factors and the worst prognosis. Other less common epithelial ovarian tumor types include mucinous, endometrioid, and clear cell.

Risk Factors[1, 2]

Age The risk of developing ovarian cancer increases with age. Ovarian cancer is rare in women younger than age 40 and most commonly develops after menopause. About half of women diagnosed with ovarian cancer are age 63 or older.

Obesity Studies suggest heavier body weight (BMI of at least 30) may increase risk and negatively affect survival.

Reproductive history Having children later, or never having a full-term pregnancy can increase risk. Use of some fertility treatments may increase risk. Conversely, using contraceptives for several years or having a hysterectomy or tubal ligation may help reduce risk.

Estrogen replacement therapy and hormone replacement therapy after menopause Women using estrogen alone or with progesterone after menopause have an increased risk of developing ovarian cancer compared to women who have never used hormones.

Personal history of breast cancer Women who have had breast cancer may have an increased risk for ovarian cancer.

Family history of ovarian, breast, or colorectal cancer About 5% to 10% of women with ovarian cancer have an inherited gene mutation.

Hereditary breast and ovarian cancer syndrome (HBOC) is caused by *BRCA1* and *BRCA2* mutations and is about 10 times more common in women of Ashkenazi Jewish descent. Lynch syndrome or hereditary nonpolyposis colon cancer (HPNCC) can involve various gene mutations and increases the risk for ovarian and multiple other cancers. Other syndromes associated with ovarian cancer include PTEN tumor hamartoma syndrome, Peutz-Jeghers syndrome, and MUTYH-associated polyposis.

Smoking is linked to an increased risk for mucinous ovarian tumors, but hasn't been shown to increase the risk of ovarian cancer overall.

Screening and Detection[1, 3]

Screening is a process used to test for cancer in people who have no symptoms. The American Cancer Society does not have recommended screening guidelines for ovarian cancer. Studies to identify effective screening tests are underway. In addition to a complete pelvic exam, clinicians may consider offering a transvaginal ultrasound (TVUS) and the CA-125 blood test for high-risk patients.

cancer.org | 1.800.227.2345

Signs and Symptoms[1, 2, 3]

Ovarian cancer presents unique concerns because early disease often has no symptoms. Therefore, it's difficult to detect at an early stage when treatment is likely to be most effective. Clinicians should regularly assess for persistent signs and symptoms, including:

- Bloating
- Pelvic or abdominal pain
- Lack of appetite
- Urinary symptoms such as urgency
- Dyspareunia
- Constipation
- Abdominal distension with ascites

Prevention[2]

More research is needed to understand known and additional risk factors and their link to ovarian cancer. Patient education should include a discussion of personal and family medical history. Some patients with hereditary risk factors might benefit from meeting with a certified genetic counselor to better understand their risk and help make an informed decision about having genetic testing.

Treatment[2, 3, 4]

Treatment is based on the tumor type, stage, and characteristics, and additional patient factors , such as age, health, and preferences. Surgery, targeted therapy, and chemotherapy – either in combination or alone – are common treatments used for ovarian cancer. Chemotherapy given directly into the abdomen (intraperitoneal chemotherapy) might also be helpful.

Ovarian Cancer in the US:

2020 estimates[1]

- New cases: 21,750
- Deaths: 13,940
- 5 -year relative survival rate for localized stage (Epithelial Ovarian Cancer): 92%
- 5-year relative survival rate for all stages combined (Epithelial Ovarian Cancer): 47%

Quality of Life[3, 5]

Concerns that ovarian cancer patients and survivors most often express are fear of recurrence; chronic and/or acute pain; ascites; early menopause; loss of fertility; changes in appetite; body image; intimacy issues; depression; sleep difficulties; changes in what they are able to do after treatment; and the burden on finances and loved ones.

A cancer diagnosis can profoundly impact quality of life. **Clinicians should assess for any physical, social, psychological, spiritual, and financial issues.** Integrating palliative care can help manage symptoms, address issues, and improve quality of life. It can be offered at any time from the point of diagnosis and until the end of life. Hospice care is appropriate for women with limited life expectancy. Studies show women with ovarian cancer are generally very concerned about end-of-life issues due to the low survival rate for ovarian cancer.

References

1. American Cancer Society. *Cancer Facts & Figures 2020*. Atlanta. American Cancer Society; 2020. Accessed at https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2020.html on January 31, 2020.

2. American Cancer Society. *Cancer Facts & Figures 2018, Special Section: Ovarian Cancer*. Atlanta. American Cancer Society;2018. Accessed at https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2018/cancer-facts-and-figures-special-section-ovarian-cancer-2018.pdf on January 31, 2020.

3. American Cancer Society. *Ovarian Cancer*. 2019. Accessed at https://www.cancer.org/cancer/ovarian-cancer.html on January 31, 2020.

4. National Comprehensive Cancer Network, Clinical Practice Guidelines in Oncology (NCCN Guidelines®), Ovarian Cancer, Version 3.2019. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/ovarian.pdf on January 31, 2020.

5. Brown, CG, ed. *A Guide to Oncology Symptom Management*. 2nd ed. Pittsburgh, PA: Oncology Nursing Society; 2015.

American Cancer Society®

cancer.org | 1.800.227.2345

BBB ACCREDITED CHARITY
bbb.org/charity

©2020, American Cancer Society, Inc.
No.300209 Rev. 2/20 Models used for illustrative purposes only.

Prostate Cancer Fact Sheet

Prostate Cancer in the US[1, 2]

In men, prostate cancer is the most common type of cancer (other than skin cancer) and the second-leading cause of cancer death among men after lung cancer. Most prostate cancers grow slowly, but when they spread, they can do so quickly.

Types of Prostate Cancer[2]

Almost all prostate cancers are adenocarcinomas. Other less common types of prostate cancer include: small cell carcinomas, neuroendocrine tumors, transitional cell carcinomas, and sarcomas.

Risk Factors[1, 2]

Age: Although men of any age can get prostate cancer, the chance of having it increases rapidly after age 50. About 60% of all prostate cancers are diagnosed in men older than 65.

Racial/Ethnic background: The risk for prostate cancer is higher in African American men and in Caribbean men of African ancestry than in men of other races.

Family history: Having a first-degree relative with prostate cancer more than doubles a man's risk of developing it. The risk is much higher for men with several affected relatives, especially if their relatives were young when the cancer was found.

Genetic mutations: Having certain inherited gene mutations might raise the risk for prostate cancer.

Screening and Detection[2, 3, 4]

Screening is a process used to test for cancer in people who have no symptoms. The American Cancer Society recommends that **all men** be given the chance to make an informed decision with their health care provider about whether to be screened after discussing the potential risks, benefits, and limitations of prostate cancer screening. **Men should not be screened unless they have received this information.** This discussion should take place at:

- **Age 50** for men at average risk who are expected to live at least 10 more years

- **Age 45** for men at high risk. This includes African Americans and men who have a first-degree relative diagnosed with prostate cancer at an early age (younger than age 65).

- **Age 40** for men at even higher risk (those with more than one first-degree relative who had prostate cancer at an early age)

If a man chooses to be tested, the prostate-specific antigen (PSA) test is recommended. Some clinicians may perform a digital rectal exam as part of screening.

Signs and Symptoms[1, 2]

Early-stage prostate cancer usually has no symptoms. More advanced prostate cancer may have symptoms, including weak or interrupted urine flow; urinary hesitancy or frequency, especially at night; blood in the urine or semen; pain with urination; or erectile dysfunction. Late-stage prostate cancer commonly spreads to the bones, which can cause pain in the hips, spine, ribs, or other areas.

Prevention[1,2]

There is no sure way to prevent prostate cancer. Risk factors, such as age, race, and family history can't be controlled. Some studies suggest that regular physical activity; getting to and staying at a healthy weight; and following a healthy eating pattern with plenty of fruits and vegetables and limitation or avoidance of red and processed meats, sugar-sweetened beverages, and highly processed foods might help lower the risk of prostate cancer.

Studies using 5α-reductase inhibitors (finasteride or dutasteride) have shown decreased risk for prostate cancer risk in some men, but the drugs' effect on prostate cancer death rates is not known.

Treatment[2,3]

- If prostate cancer is found early, treatment with curative intent is often given. Treatment options include surgery, external beam radiation, or brachytherapy.

- If the cancer is localized and slow-growing, observation or active surveillance may be recommended instead of immediate treatment, especially for older men diagnosed with early-stage, less aggressive tumors. Active treatment might be started later if the cancer progresses or symptoms appear.

- For cancer that has metastasized, treatments such as hormone therapy, chemotherapy, radiation therapy, and/or immunotherapy may be recommended.

Prostate cancer in the US:

2021 estimates[1,5]

- New cases: 248,530

- Deaths: 34,130

- 5-year relative survival rate for localized stages: Nearly 100%

- 5-year relative survival rate for all stages combined: 98%

Quality of Life[4,5,6]

Many prostate cancer survivors who were treated with surgery or radiation experience incontinence, bowel complications, and/or erectile dysfunction, which may be permanent. Patients receiving hormonal treatment may experience loss of libido, hot flashes, night sweats, irritability, and mild breast development. Hormonal therapy also increases the risk of anemia, osteoporosis, and metabolic syndrome, and may increase the risk of cardiovascular disease and depression.

A cancer diagnosis can profoundly impact quality of life. **Clinicians should assess for any physical, social, psychological, spiritual, and financial issues.** Integrating palliative care can help manage symptoms, address issues, and improve quality of life. It can be offered at any time from the point of diagnosis through treatment, and until the end of life. Throughout a patient's cancer journey, it's very important for clinicians to share information and coordinate care to ensure surveillance is ongoing.

References

1. American Cancer Society. *Cancer Facts & Figures 2021*. Atlanta. American Cancer Society; 2021. Accessed at https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2021.html on January 21, 2021.

2. American Cancer Society. Prostate Cancer. 2019. Accessed at https://www.cancer.org/cancer/prostate-cancer.html on January 21, 2021.

3. Smith RA, Andrews KS, Brooks D, et. al. Cancer screening in the United States, 2019: A review of current American Cancer Society guidelines and current issues in cancer screening. *CA: A Cancer Journal for Clinicians*. 2019; 69:184-210.

4. National Comprehensive Cancer Network, Clinical Practice Guidelines in Oncology (NCCN Guidelines®), Prostate Cancer, Version 4.2019. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/prostate.pdf on January 14, 2020.

5. American Cancer Society. *Cancer Treatment & Survivorship Facts & Figures 2019-2021*. Atlanta. American Cancer Society; 2019. Accessed at http://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/cancer-treatment-and-survivorship-facts-and-figures/cancer-treatment-and-survivorship-facts-and-figures-2019-2021.pdf on January 14, 2020.

6. Brown CG, ed. *A Guide to Oncology Symptom Management*. 2nd ed. Pittsburgh, PA: Oncology Nursing Society; 2015.

Skin Cancer Fact Sheet

Skin Cancer in the US[1]

Skin cancer is by far the most commonly diagnosed cancer in the US.

Types of Skin Cancer[2]

The majority of skin cancers are either basal cell or squamous cell carcinomas (BCC/SCC) or melanoma.

Most BCC/SCC skin cancers develop on sun-exposed areas of the body and rarely metastasize. Melanoma accounts for about 1% of all skin cancer cases, but causes the vast majority of skin cancer deaths. It is also related to sun exposure and is more likely to have accelerated growth and metastasis.

Other less common cancers affecting the skin, include Merkel cell carcinoma, lymphoma of the skin, and Kaposi sarcoma.

Risk Factors[2]

The following risk factors primarily address BCC/SCC and melanoma skin cancers:

Chronic exposure to ultraviolet (UV) radiation and sunburns People should avoid excessive exposure to sunlight and indoor tanning.

Race The risk of skin cancer is higher for whites than African Americans. People with fair skin that freckles or burns easily are at especially high risk.

Gender Men are more likely than women to have skin cancer.

Age While anyone can get skin cancer, the risk increases with age.

Immune system suppression People with weakened immunity have an increased risk of skin cancer.

Moles People with many moles and those with large or irregular moles have an increased risk for melanoma.

Personal and family history Risk of melanoma is greater in people who have already had skin cancer and if one or more first-degree relatives have had melanoma.

Radiation exposure People who have had radiation treatment have a higher risk of developing BCC/SCC skin cancer in the area that was treated.

Chemical exposure Exposure to arsenic increases the risk of squamous cell skin cancer, and exposure to coal tar, paraffin, and certain types of oil may also increase the risk of BCC/SCC skin cancer.

Early Detection[1,2]

Although the American Cancer Society does not have guidelines for the early detection of skin cancer, clinicians should teach patients the importance of knowing their own skin and reporting changes. Skin examinations can be part of routine check-ups. Some clinicians recommend periodic self-exams.

The best way to detect skin cancer early is to be aware of new or changing skin growths. Any new lesions, or a progressive change in a lesion's appearance (size, shape, or color, etc.), should be evaluated promptly.

Signs and Symptoms[1,2]

Warning signs of all skin cancers include changes in the size, shape, or color of a mole or other skin lesion, the appearance of a new growth on the skin, or a sore that doesn't heal. Changes that progress over a month or more should be evaluated.

BCC/SCC: Basal cell carcinoma may appear as a growth that is flat, or a small, raised pink or red translucent, shiny area that may bleed following minor injury. Squamous cell carcinoma may appear as a growing lump, often with a rough surface, or as a flat, reddish patch that grows slowly.

Melanoma: The most important warning signs of melanoma are a change in the size, shape, or color of a mole. The ABCDE (**A**symmetry, **B**order, **C**olor, **D**iameter and **E**volving) rule is a good guide to follow. Other symptoms include bleeding, change in the appearance of a nodule; the spread of pigmentation beyond its border; or itchiness. These skin changes can also occur under the nails, in the oral mucosa, and even the iris.

Prevention[1, 2]

The best way to lower the risk of skin cancer is to limit exposure to UV radiation. Exposure can be minimized by seeking shade; wearing protective clothing (e.g., long sleeves, a wide-brimmed hat, etc.); wearing sunglasses that block ultraviolet rays; applying broad-spectrum sunscreen with SPF of at least 30; and avoiding sunbathing and indoor tanning.

Children should be especially protected because severe sunburns in childhood may particularly increase the risk of melanoma.

Smoking cessation and regular skin checks can also help lower the risk of skin cancer.

Treatment[2, 3, 4, 5]

Treatment options are based on the type and stage of skin cancer. Most early skin cancers are diagnosed and treated by removal and microscopic examination of the cells.

- Depending on the tumor location and size, most BCC/SCC skin cancers may be cured by minor surgical excision, cryotherapy, laser surgery, radiation, or topical chemotherapy. Systemic chemo, targeted therapy, or immunotherapy might be used for cancers that cannot be treated with local therapy.

- If detected early, melanoma may be treated successfully with surgery that achieves adequate margins. Melanomas with deep invasion or that have spread to lymph nodes may be treated with surgery, immunotherapy, chemotherapy, and/or radiation therapy. Advanced melanomas are often

Skin Cancer in the US:

2020 estimates[1, 2, 6]

- New cases

  BCC/SCC: 5.4 million cases among 3.3 million people

  Melanoma: 100,350

- Deaths

  Melanoma: 6,850

- 5-year relative survival rate for localized stages:

  Melanoma: 99%

- 5-year relative survival rate for all stages combined:

  Melanoma: 92%

treated effectively with immunotherapy and targeted therapy. Chemotherapy may be used but is typically less effective than newer treatments.

Quality of Life[6, 7]

Skin cancer survivors often express fear of recurrence; guilt about delaying care or treatment, or for doing things that may have caused the cancer; concerns about changes in physical appearance; fatigue; and the burden on finances and loved ones.

A cancer diagnosis can profoundly impact quality of life. **Clinicians should assess for any physical, social, psychological, spiritual, and financial issues.** Integrating palliative care can help manage symptoms, address issues, and improve quality of life. It can be offered at any time from the point of diagnosis, during treatment, and until the end of life. Throughout a patient's cancer journey, it's very important for clinicians to share information and coordinate care to ensure surveillance is ongoing.

References

1. American Cancer Society. *Cancer Facts & Figures 2020*. Atlanta. American Cancer Society; 2020. Accessed at http://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2020.html on January 14, 2020.

2. American Cancer Society. Skin Cancer. 2019. Accessed at https://www.cancer.org/cancer/skin-cancer.html on January 14, 2020.

3. National Comprehensive Cancer Network, Clinical Practice Guidelines in Oncology (NCCN Guidelines®), Basal Cell Skin Cancer, Version 1.2020. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/nmsc.pdf on January 14, 2020.

4. National Comprehensive Cancer Network, Clinical Practice Guidelines in Oncology (NCCN Guidelines®), Squamous Cell Skin Cancer, Version 1.2020. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/squamous.pdf on January 14, 2020.

5. National Comprehensive Cancer Network, Clinical Practice Guidelines in Oncology (NCCN Guidelines®), Cutaneous Melanoma, Version 1.2020. Accessed at

6. American Cancer Society. *Cancer Treatment & Survivorship Facts & Figures 2019-2021*. Atlanta. American Cancer Society; 2019. Accessed at http://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/cancer-treatment-and-survivorship-facts-and-figures/cancer-treatment-and-survivorship-facts-and-figures-2019-2021.pdf on January 14, 2020.

7. Brown CG, ed. *A Guide to Oncology Symptom Management*. 2nd ed. Pittsburgh, PA: Oncology Nursing Society; 2015.

Testicular Cancer Fact Sheet

Testicular Cancer in the US[1, 2]

Testicular cancer is not common, but its incidence has been increasing for several decades. Testicular germ cell tumor (GCT) is the most commonly diagnosed cancer among young adult men, with rates peaking in the 30-39 age group. Because it can usually be treated successfully, a man's lifetime risk of dying from testicular cancer is low.

Types of Testicular Cancer[2]

Most testicular cancers are GCTs. The 2 main types of GCTs are seminomas and non-seminomas. They are treated differently because they grow and spread differently. The 4 main types of non-seminomas are embryonal, yolk sac, choriocarcinoma, and teratoma.

Many testicular cancers have both seminoma and non-seminoma cells. These mixed GCTs are treated like non-seminomas because they act like non-seminomas.

Risk Factors[2]

- Having cryptorchidism
- Having a personal or family history of testicular cancer
- Having Klinefelter syndrome
- Being a White male

Screening and Detection[2]

Most testicular cancers can be found at an early stage. For this reason, most clinicians agree that testicular examination for men should be part of a physical exam during a routine visit. Patient education should include a discussion of possible risk factors.

The American Cancer Society does not have specific guidelines for regular testicular self-exams, but advises men to be aware of testicular cancer and to promptly report any testicular or scrotal changes, particularly a lump, to their doctor. Some clinicians advise all their male patients to perform monthly testicular self-exams after puberty.

Signs and Symptoms[2]

Some men with testicular cancer are asymptomatic. In men with symptomatic disease, the most common sign is a testicular swelling or lump. Some men may describe aching in the lower abdomen and groin, or scrotal heaviness. Non-cancerous conditions, such as testicle injury or inflammation (orchitis and epididymitis), can cause similar symptoms.

Hormone production from certain types of testicular cancer can cause breast development or soreness, or loss of libido in men.

Advanced testicular cancer can present with lower back or abdominal pain due to lymph node or liver metastasis; cough, chest pain, or shortness of breath due to lung metastasis; or headaches or confusion due to brain metastasis.

Prevention[2]

Many men with testicular cancer have no known risk factors. And most known risk factors are not modifiable. For these reasons, it's not possible to prevent most cases of testicular cancer.

Treatment[2, 3, 5]

Prior to surgery or treatment for testicular cancer, patient education should include discussion about fertility concerns, including sperm banking options and infertility counseling as appropriate.

A needle biopsy or transcrotal orchiectomy of the testes are contraindicated for diagnosis because they increase the risk of local recurrence and cancer spread. Testicular ultrasound should be done first and, if a concerning mass is found, it should be followed by a radical inguinal orchiectomy for diagnosis and treatment. Other treatment may be needed depending on the type and stage of cancer, tumor characteristics, tumor markers, and the patient's overall health.

- Carcinoma in situ is sometimes watched closely with repeat exams, imaging, and tumor markers. Other times, orchiectomy might be done.

- Seminomas are treated with a radical inguinal orchiectomy first. Surveillance, radiation, or chemotherapy are options after surgery depending on cancer stage.

- Non-seminomas are also treated with a radical inguinal orchiectomy first. Surveillance, retroperitoneal lymph node removal, and chemotherapy are options after surgery depending on cancer stage and level of tumor markers after surgery.

- Radiation and different chemotherapy might be recommended for more advanced cancers.

- A stem cell transplant might be recommended for recurrent testicular cancers.

Quality of Life[3, 4]

Some patients living with testicular cancer have concerns about maintaining sexual function and body image after orchiectomy. Insertion of a testicular prosthesis might be an option. It is important to emphasize to patients that orchiectomy should not affect the ability to get an erection, but that a retroperitoneal lymph node dissection (RPLND) might cause trouble with ejaculation. Other concerns that patients and survivors most often have include possible long-lasting side effects like fertility problems, pain, fatigue, depression, sleep difficulties, changes in what they can do after treatment, and the burden on finances and loved ones.

A cancer diagnosis can profoundly impact quality of life. Clinicians should assess for any physical, social, psychological, spiritual, and financial issues. Integrating palliative care can help manage symptoms, address issues, and improve quality of life. It can be offered at any time, from diagnosis until the end of life. Throughout a patient's cancer journey, it's very important for clinicians to share information and coordinate care to ensure ongoing surveillance.

References

1. American Cancer Society. *Cancer Facts & Figures 2021.* Atlanta. American Cancer Society; 2020. Accessed at https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2021.html on January 18, 2021.

2. American Cancer Society. *Testicular Cancer.* 2019. Accessed at https://www.cancer.org/cancer/testicular-cancer.html on January 18, 2021.

3. National Comprehensive Cancer Network, Clinical Practice Guidelines in Oncology (NCCN Guidelines®), Testicular Cancer, Version 1.2021. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/testicular.pdf on January 18, 2021.

4. Brown, CG, ed. *A Guide to Oncology Symptom Management.* 2nd ed. Pittsburgh, PA: Oncology Nursing Society; 2015.

5. Oktay et al. Fertility preservation in patients with cancer: American Society of Clinical Oncology clinical practice guideline update. *Journal of Clinical Oncology.* 2018;36(19):1994-2003.

Tobacco and Cancer Fact Sheet

Tobacco and Cancer in the US

- Tobacco use is the leading preventable cause of death in the US.[1]

- Despite decades of declining smoking prevalence, smoking rates remain high in certain segments of the population, including those in lower education or socioeconomic groups; certain racial or ethnic groups; the lesbian, gay, bisexual, and transgender (LGBT) community; in the military; and people with mental illness.[2]

- The burden of smoking-related cancers remains high. About 30% of all cancer deaths are caused by smoking.[1]

- About 3% of lung cancer cases are attributable to secondhand smoke (SHS) exposure.

Cancer Risk

Cigarettes

Besides being the leading cause of lung cancer deaths in men and women, cigarette smoking increases the risk of at least 12 cancers: oral cavity and pharynx, larynx, lung, esophagus, pancreas, uterine cervix, kidney, bladder, stomach, colon and rectum, and liver, as well as acute myeloid leukemia. In addition, there is evidence that smoking may increase the risk of advanced-stage prostate cancer.[1]

Cigars

Cigars and little cigars are often taxed at a lower rate than cigarettes, leading some people who smoke to switch from cigarettes to cigars.[3] Regular cigar smoking is associated with an increased risk of cancers of the lung, oral cavity, larynx, and esophagus.[4]

Secondhand smoke

Exposure to secondhand smoke (SHS) increases the risk of lung cancer. There is also research suggesting a possible link between SHS and cancers of the breast, nasal sinuses, larynx, and nasopharynx in adults. SHS may also increase the risk of certain childhood cancers such as lymphoma, leukemia, and brain tumors.[5]

Smokeless tobacco

Oral or smokeless tobacco products can cause oral, esophageal, and pancreatic cancer, as well as precancerous lesions of the mouth. The use of smokeless tobacco products as a method of quitting smoking has not been shown to be effective.[6,7]

E-cigarettes

While e-cigarettes (vaping devices) have not been directly linked to cancer, long-term health effects are not yet known. It is important to note that e-cigarettes contain nicotine, which can be highly addictive, and the aerosol from e-liquids used in these products can contain other harmful chemicals. Even though cigarette smoking rates have decreased in youth, studies have shown that using e-cigarettes may lead some people to try other more harmful types of tobacco that have known cancer risks.[1, 8-12]

Who Still Smokes in the US

Recent studies show smoking prevalence:

- Is lowest among Asians and highest among American Indians/Alaska Natives[2]

- Is lowest among adults with a graduate degree and highest among people with lower levels of education[1]

- Is higher among people who self-identify as gay, lesbian, or bisexual than among people who identify as straight[2]

- Varies greatly depending on geographic location[1]

Risk Reduction

Avoiding or quitting tobacco can help to greatly lower a person's risk of certain cancers, along with several other chronic diseases. People who quit at any age are more likely to live longer than people who keep smoking.

Avoiding tobacco use

Prevention efforts aimed at children and young adults can lead to a decrease in many tobacco-related health problems. Most people who smoke start using tobacco during their youth or in young adulthood. People who start smoking at younger ages are more likely to develop long-term nicotine addiction than people who start later in life. According to the US Surgeon General, nearly 9 out of 10 adults who smoke started before age 18, and 99% started by age 26. And, 3 out of 4 high schoolers who smoke will become adults who smoke.[13]

Avoiding secondhand exposure

Comprehensive smoke-free laws that prohibit smoking in public places and create smoke-free environments are effective in reducing SHS exposure, modifying smoking behavior, and reducing the risk of smoking-related disease. Data also shows that the home is the main location for exposure to secondhand smoke for children and adults. Adults should prohibit the use of tobacco products in their homes.[14, 15]

Tobacco cessation

Evidence-based cessation methods include nicotine replacement therapy (NRT), prescription medications (e.g., varenicline and buproprion), and counseling. All have been shown to improve the chances of success and long-term cessation. Combinations are likely to be more effective than the use of one treatment alone.[16]

All US states have telephone quitlines. Additionally, the Affordable Care Act (ACA) requires coverage for cessation treatments for people in most private and some public health insurance plans. And, some state Medicaid programs have expanded coverage to include no-cost tobacco cessation services.[17]

References

1. American Cancer Society. *Cancer Facts & Figures 2021.* Cancer.org. Accessed at https://www.cancer.org/research/cancer-facts-statistics.html

2. Drope J, Liber AC, Cahn Z, Stoklosa M, Kennedy R, Douglas CE, Henson R, Drope J. Who's still smoking? Disparities in adult cigarette smoking prevalence in the United States. *CA Cancer J Clin.* 2018; 68: 106-115.

3. Campaign for Tobacco-Free Kids. The rise of cigars and cigar-smoking harms. Tobaccofreekids.org; 2020. Accessed at https://www.tobaccofreekids.org/assets/factsheets/0333.pdf

4. Centers for Disease Control and Prevention. Cigars. Cdc.gov. 2020. Accessed at https://www.cdc.gov/tobacco/data_statistics/fact_sheets/tobacco_industry/cigars/

5. National Cancer Institute. Secondhand Smoke and Cancer. 2018. Accessed at https://www.cancer.gov/about-cancer/causes-prevention/risk/tobacco/second-hand-smoke-fact-sheet on October 14, 2020.

6. International Agency for Research on Cancer. Smokeless Tobacco and Some Tobacco-Specific N-Nitrosamines. Lyon, France: World Health Organization International Agency for Research on Cancer; 2007. *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 89.*

7. Popova L, Ling PM. Alternative tobacco product use and smoking cessation: A national study. *Am J Public Health.* 2013;103(5):923-930.

8. Drope J, Cahn Z, Kennedy R, Liber AC, Stoklosa M, Henson R, Douglas CE, Drope J. Key Issues Surrounding the Health Impacts of Electronic Nicotine Delivery Systems (ENDS) and Other Sources of Nicotine. *CA: A Cancer Journal for Clinicians.* 2017;87(6):449-471. Accessed at https://acsjournals.onlinelibrary.wiley.com/doi/full/10.3322/caac.21413 on December 4, 2020.

9. Food and Drug Administration (FDA). Statement from FDA Commissioner Scott Gottlieb, M.D., on proposed new steps to protect youth by preventing access to flavored tobacco products and banning menthol in cigarettes. November 2018. Accessed at https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm625884.htm on December 4, 2020.

10. National Academies of Sciences, Engineering, and Medicine (NASEM). *Public Health Consequences of E-Cigarettes.* Eaton DL, Kwan LY, Stratton K, eds. 2018. Washington, DC: National Academies Press. Accessed at https://www.nap.edu/catalog/24952/public-health-consequences-of-e-cigarettes on December 4, 2020.

11. U.S. Department of Health and Human Services, Office of the Surgeon General. *E-Cigarette Use Among Youth and Young Adults: A Report of the Surgeon General.* 2016. Accessed at https://e-cigarettes.surgeongeneral.gov/documents/2016_SGR_Full_Report_non-508.pdf on December 4, 2020.

12. Wang TW, Neff LJ, Park-Lee E, Ren C, Cullen KA, King BA. E-cigarette Use Among Middle and High School Students – United States, 2020. *MMWR Morb Mortal Wkly Rep.* ePub: 9 September 2020. Accessed at https://www.cdc.gov/mmwr/volumes/69/wr/mm6937e1.htm on December 4, 2020.

13. US Department of Health & Human Services. *The Health Consequences of Smoking – 50 Years of Progress: A Report of the Surgeon General.* 2014. Accessed at https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf on October 12, 2020.

14. Institute of Medicine. *Secondhand Smoke Exposure and Cardiovascular Effects: Making Sense of the Evidence.* Washington, DC: Institute of Medicine; 2009.

15. US Environmental Protection Agency. *Secondhand Tobacco Smoke and Smoke-free Homes.* 2020. Accessed at www2.epa.gov/indoor-air-quality-iaq/secondhand-tobacco-smoke-and-smoke-free-homes on December 2, 2020.

16. National Comprehensive Cancer Network (NCCN). *Practice Guidelines in Oncology: Smoking Cessation.* Version 2.2020. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/smoking.pdf on December 4, 2020.

17. DiGiulio A, Jump Z, Babb S, Schecter A, Williams KS, Yembra D, Armour BS. State Medicaid Coverage for Tobacco Cessation Treatments and Barriers to Accessing Treatments - United States, 2008-2018. *MMWR Morb Mortal Wkly Rep.* 2020 Feb 14;69(6):155-160.

Breast Cancer Fact Sheet

Breast Cancer in the US[1, 2]

In women, breast cancer is the most common cancer diagnosed (after skin cancer) and the second leading cause of cancer death (after lung cancer).

Types of Breast Cancer[1, 3]

There are several types of breast cancer, including: ductal carcinoma in situ (DCIS), invasive ductal carcinoma (IDC), invasive lobular carcinoma (ILC), triple-negative breast cancer (TNBC), inflammatory breast cancer (IBC), angiosarcoma of the breast, and Paget disease of the breast.

Risk Factors[1, 2, 3]

Gender – Both men and women can develop this disease, but being born female is the main risk factor for breast cancer.

Being older – The risk of developing breast cancer increases with age, and most breast cancers are found in women age 55 or older.

Personal or family history – Breast cancer risk is higher among women with a personal or family history of the disease.

- About 5% to 10% of breast cancers are likely caused by genetic mutations in the *BRCA1* and *BRCA2* genes. Other gene mutations are also linked to inherited breast cancer.

- Overall, about 15% of women with breast cancer have a family member with the disease. Having a first-degree relative with breast cancer increases risk, while having more than one first-degree relative who has or had breast cancer increases the risk even more. Risk is further increased when the affected female relative was diagnosed at a young age or was diagnosed with cancer in both breasts, or if the affected relative is male.

- Previous history of breast cancer or certain benign breast conditions, such as atypical hyperplasia, can increase risk.

Other Risk Factors[1, 2, 3]

- Having dense breast tissue

- Using post-menopausal hormone therapy with estrogen and progesterone therapy

- Being overweight or obese, especially after menopause

- Drinking alcohol

- Physical inactivity

- A long menstrual history – starting menstruation early or having late menopause

- Not having children, not breastfeeding, or having first live birth after age 30

- Using certain birth control methods

Screening and Detection[1, 4, 5]

Screening is a process used to look for cancer in people who have no symptoms. The American Cancer Society recommends the following guidelines for the early detection of breast cancer in average-risk women:

- **Women ages 40 to 44** should have the choice to start annual breast cancer screening with mammograms.

- **Women ages 45 to 54** should get mammograms every year.

- **Women 55 and older** should switch to mammograms every 2 years, or can continue yearly screening.

- Screening should continue as long as a woman is in good health and is expected to live at least 10 more years.

- **All women** should be familiar with the known benefits, limitations, and potential harms linked to breast cancer screening.

- Screening MRI is recommended for women at high risk of breast cancer, including women with a strong family history of breast or ovarian cancer, those with a lifetime risk of breast cancer of about 20% to 25% or greater according to risk assessment tools that are based mainly on family history, those with a known breast cancer gene mutation, and women who were treated with radiation therapy to the chest when they were between the ages of 10 and 30.

Signs and Symptoms[1, 3]

The most common physical sign of breast cancer is a new painless lump or mass. Sometimes breast cancer spreads to axillary lymph nodes and causes a lump or swelling, even before the original breast tumor is large enough to be felt. Less common signs and symptoms include breast pain or heaviness; persistent changes, such as swelling, thickening, redness, irritation or dimpling of the skin; and nipple changes, such as spontaneous discharge (especially if bloody), pain, retraction, redness, or scaliness. Any persistent change in the breast should be evaluated by a physician.

Prevention[1, 4]

There is no sure way to prevent breast cancer, and some risk factors can't be changed, such as age, race, family history of disease, genetic mutations, and reproductive history. But it's possible for a woman at average risk to take steps that may help reduce her risk. Lifestyle factors, such as avoiding or limiting alcohol, breastfeeding, engaging in regular physical activity, and staying at a healthy weight, are associated with lower risk. Selective estrogen receptor modulators (SERMs), such as tamoxifen and raloxifene and prophylactic mastectomy can help reduce the risk in some high-risk women.

Treatment[1, 3, 5]

Treatment is most successful when breast cancer is detected early. Treatment is dependent on the type and stage of breast cancer, tumor characteristics, hormone receptor status, the patient's age, menopausal status, and the patient's preferences. Treatment may involve breast conservation surgery (lumpectomy) or mastectomy with or without axillary lymph node dissection and breast reconstruction.

Some non-invasive breast cancers are treated with hormone therapy after surgery. Treatment for invasive breast cancer may include surgery and/or radiation therapy with or without hormone therapy, chemotherapy, or other drug therapies. In the case of breast cancer, combination therapy is often not given. Exceptions would be targeted therapy (such as HER2

drugs) with chemo or targeted drugs with hormone therapy. But chemo is not given with radiation therapy or hormone therapy.

Quality of Life[2, 3, 6, 7]

Breast cancer survivors most often express uncertainty about treatment options and concerns about hair loss; changes in physical appearance; lymphedema; sexual and fertility changes; guilt for delaying screening or treatment, or for doing things that may have caused the cancer; fear of recurrence; chronic and/or acute pain; fatigue; depression; sleep difficulties; changes in what they are able to do after treatment; and the burden on finances and loved ones.

A cancer diagnosis can profoundly impact quality of life. Clinicians should assess for any physical, social, psychological, spiritual, and financial issues. Integrating palliative care can help manage symptoms, address issues, and improve quality of life. It can be offered at any time, from the point of diagnosis through treatment, and until the end of life. Throughout a patient's cancer journey, it's very important for clinicians to share information and coordinate care to ensure surveillance is ongoing.

Breast Cancer in the US:

2021 estimates[1,2]

New cases

- Invasive breast cancer in women: 281,550
- Carcinoma in situ (CIS) in women: 49,290
- Invasive breast cancer in men: 2,650

Deaths

- Women: 43,600
- Men: 530

5-year relative survival rate for localized stages: 99%

5-year relative survival rate for all stages combined: 90%

References

1. American Cancer Society. *Breast Cancer Facts & Figures 2019-2020*. Atlanta. American Cancer Society; 2019. Accessed at http://www.cancer.org/research/cancer-facts-statistics/breast-cancer-facts-figures.html on January 15, 2021.

2. American Cancer Society. *Cancer Facts & Figures 2021*. Atlanta. American Cancer Society; 2021 Accessed at https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2021.html on January 15, 2021.

3. American Cancer Society. *Breast Cancer*. 2019. Accessed at https://www.cancer.org/cancer/breast-cancer.html on January 15, 2021.

4. Smith RA, Andrews KS, Brooks D, et. al. Cancer screening in the United States, 2019: A review of current American Cancer Society guidelines and current issues in cancer screening. *CA: A Cancer Journal for Clinicians*. 2019; 69:184-210.

5. National Comprehensive Cancer Network, Clinical Practice Guidelines in Oncology (NCCN Guidelines®), Breast Cancer, Version 6.2020. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf on January 15, 2021.

6. American Cancer Society. *Cancer Treatment & Survivorship Facts & Figures 2019-2021*. Atlanta. American Cancer Society; 2019. Accessed at http://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/cancer-treatment-and-survivorship-facts-and-figures/cancer-treatment-and-survivorship-facts-and-figures-2019-2021.pdf on January 15, 2021.

7. Brown CG, ed. *A Guide to Oncology Symptom Management*. 2nd ed. Pittsburgh, PA: Oncology Nursing Society; 2015.