



June 2022

## SUMMARY OF SCREENING RECOMMENDATIONS

### United States Preventive Services Task Force (USPSTF) Screening Recommendations Grading with Corresponding Suggested Quest Code to Order

Colon Cancer	50 - 75 years CCHCS uses annual FIT testing	<b>(USPSTF Grade A)</b>	FIT 11290
	45 - 49 years CCHCS uses annual FIT testing	<b>(USPSTF Grade B)</b>	FIT 11290
Cervical Cancer	21 - 29 years every 3 years with cytology alone*	<b>(USPSTF Grade A)</b>	*Not preferred in CCHCS, use 91386
	30 - 65 years Every 3 years with cytology alone or, Every 5 years with hrHPV testing alone or, Every 5 years with co-testing both above.	<b>(USPSTF Grade A)</b>	Use Quest Smart code: ≤44 years: 91386 >45 years: 91384
Breast Cancer	50 - 74 years with biennial screening mammography	<b>(USPSTF Grade B)</b>	Mammogram
Lung Cancer	50 - 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years	<b>(USPSTF Grade B)</b>	Low Dose CT

### American Association for the Study of Liver Disease (AASLD)/Up to Date

Liver Cancer/ Hepatocellular Carcinoma (HCC)	ALL patients with cirrhosis, including patients with cirrhosis who have been successfully treated for hepatitis C virus (HCV).	Abdominal ultrasound focused on the liver  (with or without Alpha-fetoprotein at 6 mos intervals)
	High Risk Patients with:	
	<ul style="list-style-type: none"> <li>Active hepatitis (e.g., ↑ALT), and/or ↑HBV DNA/ML (i.e., &gt;100,000 copies/mL)</li> <li>Family history (i.e., first degree relative) of HCC</li> <li>Asian men &gt; 40 years of age/ Asian women &gt; 50 years</li> <li>Africans and African Americans (tend to develop HCC at a younger age)</li> </ul>	
	Patients successfully treated for hepatitis B virus (HBV), continue to perform HCC surveillance	
	Patients on liver transplant list should be screened for HCC	

**Tools & Resources**

[Home | USPSTF](#)  
[Home | AASLD](#)

**CCHCS Quality Management Registries**

[Colon Cancer Screening](#)  
[Cervical Cancer Screening](#)  
[Breast Cancer Screening](#)

**Table of Contents**

Colon Cancer ..... 2  
Cervical Cancer ..... 3  
Breast Cancer ..... 4  
Lung Cancer ..... 5  
Liver Cancer/Hepatocellular Carcinoma ..... 5-6  
References ..... 7  
USPSTF Grading ..... 8



June 2022

## Colorectal Cancer Screening

### Overview

The typical pathogenesis of colorectal cancer (CRC) is an adenomatous polyp that slowly increases in size and leads to dysplasia and cancer. However, 20% to 30% of CRC cases arise through pathways other than the adenoma–carcinoma sequence. Progression from adenoma to invasive cancer varies from 5 years or less to more than 20 years. Most guidelines have recommended customary age for starting screening at 50 years old.

**CRC Screening in patients age 45-49:** Many of the national guidelines are recommending beginning of CRC screening at age 45 years. Epidemiologic data suggest an increasing incidence of CRC in younger middle-aged adults. Since the 1990s, the rate of colorectal cancer has more than doubled among adults younger than 50 years old (National Cancer Institute). Black patients are more likely to get colorectal cancer at a young age than Whites, but the rate of colon cancer development has been sharper in patients with Alaskan Native, American Indian and White background.

### Which patients need screening?

USPSTF Recommendations by age group:

- **45 - 49:** Moderate certainty that screening has **moderate net benefit**.
- **50 - 75:** High certainty that screening has **substantial net benefit**.
- **76 - 85:** Moderate certainty that screening for adults who have been previously screened has **small net benefit**. Adults who have never been screened for colorectal cancer are more likely to benefit.

NB: For high-risk patients, the recommendations differ regarding the age at which to begin screening, as well as the frequency and method of screening

### How should patients be screened?

Several screening strategies are available. When choosing a specific strategy a variety of factors should be considered including the frequency of the specific screening strategy, need for pre-procedure bowel preparation and burden of the preparation, anesthesia or sedation during the test, and follow-up procedures for abnormal findings.

**Recommended screening strategy in CCHCS:** Fecal immunochemical test (FIT) every year (followed by colonoscopy if FIT positive)

Age	USPSTF Recommendation	Grade of Evidence
50 to 75 years	Screening for colorectal cancer starting at age 50 years and continuing until age 75 years	Grade A
45 to 49 years	Screening for colorectal cancer in adults aged 45 to 49 years	Grade B
76 to 85 years	<p>The decision to screen should be an individual one, taking into account the patient’s overall health and prior screening history.</p> <p>Clinicians selectively offer screening.</p> <p>Moderate certainty that screening for colorectal cancer in adults aged 76 to 85 years who have been previously screened has <b>small net benefit</b>.</p> <p>Adults who have never been screened for colorectal cancer are more likely to benefit.</p> <p>In determining whether this service is appropriate in individual cases, patients and clinicians should consider the patient’s overall health, prior screening history, and preferences.</p>	Grade C

June 2022

## Cervical Cancer Screening

### Overview

The number of deaths from cervical cancer in the U.S. have decreased substantially since the implementation of widespread cervical cancer screening and continue to decline, from 2.8 per 100,000 women in 2000 to 2.3 deaths per 100,000 women in 2015. Most cases of cervical cancer occur among women who have not been adequately screened.

The below recommendations apply to all asymptomatic individuals with a cervix, regardless of their sexual history. These recommendations do not apply to women who have been diagnosed with a high-grade precancerous cervical lesion or cervical cancer, women with in utero exposure to diethylstilbestrol, or women who have a compromised immune system (e.g., women living with human immunodeficiency virus [HIV]).

### Which patients need screening?

All women aged 21 to 65 years are at risk for cervical cancer because of potential exposure to high-risk human papillomavirus types (hrHPV) through sexual intercourse and should be screened.

Certain risk factors further increase risk for cervical cancer, including:

- HIV infection
- Compromised immune system
- In utero exposure to diethylstilbestrol
- Previous treatment of a high-grade precancerous lesion or cervical cancer. Women with these risk factors should receive individualized follow-up

### How should patients be screened?

Screening with cervical cytology alone, primary testing for hrHPV alone, or both at the same time (co-testing) can detect high-grade precancerous cervical lesions and cervical cancer. Primary Care Physicians (PCPs) should focus on ensuring that women receive adequate screening, appropriate evaluation of abnormal results, and indicated treatment, regardless of which screening strategy is used.

Population	Recommendation	Grade of Evidence
<b>21 to 29 years</b>	Screen for cervical cancer every 3 years with cytology alone.	<i>Grade A</i>
<b>30 to 65 years</b>	Screen: Every 3 years with cytology alone or, Every 5 years with hrHPV testing alone or, Every 5 years with co-testing.	<i>Grade A</i>
<b>&lt; 21 years</b>	The USPSTF recommends <i>against</i> screening for cervical cancer in women younger than 21 years.	<i>Grade D</i>
<b>&gt; 65 years with adequate prior screening</b>	The USPSTF recommends <i>against</i> screening for cervical cancer in women older than 65 years who have had adequate prior screening and are not otherwise at high risk for cervical cancer.	<i>Grade D</i>
<b>Women who have had a hysterectomy</b>	The USPSTF recommends <i>against</i> screening for cervical cancer in women who have had a hysterectomy with removal of the cervix and do not have a history of a high-grade precancerous lesion (i.e., cervical intraepithelial neoplasia [CIN] grade 2 or 3) or cervical cancer.	<i>Grade D</i>



June 2022

## Breast Cancer Screening

### Overview

Breast cancer is the second-leading cause of cancer death among women in the U.S. It is most frequently diagnosed among women aged 55 to 64 years, and the median age of death from breast cancer is 68 years.

### Which patients need screening?

- Average risk women age 50 to 74 years should be screened.
  - ◊ Of all of the age groups, women aged 60 to 69 years are most likely to avoid breast cancer death through mammography screening.
- Higher risk women 40-49 years:
  - ◊ Women with a parent, sibling, or child with breast cancer are at higher risk for breast cancer and thus may benefit more than average-risk women from beginning screening in their 40s.

### How should patients be screened?

- USPSTF recommends **biennial screening mammography** and CCHCS uses **biennial screening mammography**

Patient Groups	Recommendation	Grade of Evidence
<b>50 to 74 years</b>	The USPSTF recommends biennial screening mammography for women aged 50 to 74 years.	<i>Grade B</i>
<b>40 to 49 years</b>	<p>The decision to start screening mammography in women prior to age 50 years should be an individual one.</p> <ul style="list-style-type: none"> <li>• Women who place a higher value on the potential benefit than the potential harms may choose to begin biennial screening between the ages of 40 and 49 years.</li> <li>• Women with a parent, sibling, or child with breast cancer are at higher risk for breast cancer and thus may benefit more than average-risk women from beginning screening in their 40s.</li> </ul> <p>NOTE: In addition to false-positive results and unnecessary biopsies, all women undergoing regular screening mammography are at risk for the diagnosis and treatment of noninvasive and invasive breast cancer that would otherwise not have become a threat to their health, or even apparent, during their lifetime (known as "overdiagnosis"). Beginning mammography screening at a younger age and screening more frequently may increase the risk for overdiagnosis and subsequent overtreatment.</p>	<i>Grade C</i>
<b>≥ 75 years</b>	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening mammography in women aged 75 years or older.	<i>Grade I</i>
<b>All women</b>	The USPSTF concludes that the current evidence is insufficient to assess the benefits and harms of digital breast tomography (DBT) as a primary screening method for breast cancer.	<i>Grade I</i>
<b>Women with dense breasts</b>	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of adjunctive screening for breast cancer using breast ultrasonography, magnetic resonance imaging, DBT, or other methods in women identified to have dense breasts on an otherwise negative screening mammogram.	<i>Grade I</i>

June 2022

## Lung Cancer Screening

### Overview

Lung cancer is the second most common cancer and the leading cause of cancer death in the US. In 2020, an estimated 228,820 persons were diagnosed with lung cancer, and 135,720 persons died of the disease.

The most important risk factor for lung cancer is smoking. Smoking is estimated to account for about 90% of all lung cancer cases, with a relative risk of lung cancer approximately 20-fold higher in smokers than in nonsmokers. Increasing age is also a risk factor for lung cancer. The median age of diagnosis of lung cancer is 70 years.

Lung cancer has a generally poor prognosis, with an overall 5-year survival rate of 20.5%. However, early-stage lung cancer has a better prognosis and is more amenable to treatment.

### Which patients need screening?

Adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years.

### How should patients be screened?

The USPSTF recommends:

- Annual screening for lung cancer with low-dose computed tomography (LDCT) in adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years.
- Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.

Patient Groups	Recommendation	Grade of Evidence
50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years.	The USPSTF recommends annual screening for lung cancer with LDCT.	Grade B

## Liver Cancer/Hepatocellular Carcinoma Screening

### Overview

HCC is the sixth most common malignant tumor worldwide. The incidence of HCC is increasing in the U.S., with a rate in men that is three times higher than the rate in women. The risk for HCC in developed countries is increasing, owing to its associations with HCV, alcoholic liver disease, and nonalcoholic fatty liver disease. Underlying cirrhosis of any cause also increases the risk for HCC.

The goal of screening is to detect subclinical disease, and when screening is performed at regular intervals, it is called surveillance. Finding HCC early is crucial; the prognosis correlates with delays in diagnosis, and small, localized, early-stage tumors are amenable to better treatment options.

USPSTF does not have recommendations on HCC screening; the following recommendations are from AASLD/Up to Date.



June 2022

## Liver Cancer/Hepatocellular Carcinoma Screening

### Overview

The goal of screening is to detect subclinical disease, and when screening is performed at regular intervals, it is called surveillance. Finding HCC early is crucial; the prognosis correlates with delays in diagnosis, and small, localized, early-stage tumors are amenable to better treatment options.

USPSTF does not have recommendations on HCC screening; the following recommendations are from AASLD/Up to Date.

### Which patients need screening?

Patients at high risk for developing HCC should be entered in the surveillance programs. Almost **all adult patients with cirrhosis** and **some patients with chronic HBV** are at sufficiently high risk for developing HCC, so they should be enrolled in a screening and surveillance program.

- Cirrhosis of any cause carries a risk for development of HCC:
  - ◊ Additional risk factors for HCC in patients with cirrhosis include:
    - Male sex, age >40 years, obesity, diabetes, nonalcoholic fatty liver disease, cigarette smoking, a family history of HCC, exposure to aflatoxin, and hepatic venous outflow obstruction.
- Non-cirrhotic patients with HBV infection with any of the following characteristics:
  - ◊ Active hepatitis (elevated serum alanine aminotransferase [ALT] and/or high HBV DNA/viral load)
  - ◊ Family history of HCC
  - ◊ Africans and African Americans
  - ◊ Asian males over 40 years of age
  - ◊ Asian females over 50 years of age
- In patients who have been treated for chronic HCV and have achieved sustained viral response, the risk of HCC persists and surveillance should be continued.
- Continue to perform surveillance for patients successfully treated for chronic HBV infection who are HBsAg seropositive, although the risk of HCC appears to be decreased among these patients.

NOTE: Patients with HCV and advanced fibrosis - Some guidelines suggest surveillance for patients with chronic HCV and advanced liver fibrosis (stage F3) in the absence of cirrhosis, although the cost effectiveness of surveillance in such patients has not been verified. **CCHCS is guided by the AASLD which does NOT advocate surveillance in these patients.**

### How should patients be screened?

- Surveillance for HCC should be performed using **ultrasonography (US) every 6 months**.
  - ◊ In patients in whom US of the liver is technically suboptimal (e.g., body habitus, hepatic steatosis, advanced cirrhosis), other modalities such as CT or MRI with contrast may be appropriate.
- Alpha-fetoprotein is a marker of advanced HCC. As a screening tool by itself, however, alpha-fetoprotein *does not have sufficient sensitivity or specificity* to be effective in routine surveillance.
  - ◊ The sensitivity of alpha-fetoprotein is approximately 45% when a level > 20 ng/mL is used. Smaller cancers may not secrete diagnostic levels of alpha-fetoprotein, and elevations are also seen in chronic liver disease in the absence of detectable cancer. Larger elevations can indicate the presence of large, often poorly differentiated tumors that may include portal venous invasion
- The AASLD 2018 recommendation states: Surveillance using US, *with or without AFP*, every 6 months.
  - ◊ Most of the studies showed a benefit of the combination of US and AFP in improving overall survival.
  - ◊ AFP added to US for surveillance increases false-positive rates.
  - ◊ AFP is considered positive if its value is > 20 ng/mL and negative if lower.
  - ◊ AFP is expected to increase the sensitivity of surveillance US. Recent data suggest that longitudinal changes in AFP may increase sensitivity and specificity than AFP interpreted at a single threshold of 20 ng/mL.



June 2022

## References

1. Ladabaum, U., Mannalithara, A., Meester, R. G., Gupta, S., & Schoen, R. E. (2019, March 28). Cost-Effectiveness and National Effects of Initiating Colorectal Cancer Screening for Average-Risk Persons at Age 45 Years Instead of 50 Years. Retrieved from [Cost-Effectiveness and National Effects of Initiating Colorectal Cancer Screening for Average-Risk Persons at Age 45 Years Instead of 50 Years - Gastroenterology \(gastrojournal.org\)](https://www.gastrojournal.org)
2. Colorectal Cancer: Screening. (2021, May 18). Retrieved from [Recommendation: Colorectal Cancer: Screening | United States Preventive Services Taskforce \(uspreventiveservicestaskforce.org\)](https://www.uspreventiveservicestaskforce.org)
3. Cervical Cancer: Screening. (2018, August 21). Retrieved from [Recommendation: Cervical Cancer: Screening | United States Preventive Services Taskforce \(uspreventiveservicestaskforce.org\)](https://www.uspreventiveservicestaskforce.org)
4. Breast Cancer: Screening. (2016, January 11). Retrieved from [Recommendation: Breast Cancer: Screening | United States Preventive Services Taskforce \(uspreventiveservicestaskforce.org\)](https://www.uspreventiveservicestaskforce.org)
5. Lung Cancer: Screening. (2021, March 09). Retrieved from [Recommendation: Lung Cancer: Screening | United States Preventive Services Taskforce \(uspreventiveservicestaskforce.org\)](https://www.uspreventiveservicestaskforce.org)
6. Marrero JA, Kulik LM, Sirlin CB, Zhu AX, Finn RS, Abecassis MM, Roberts LR, Heimbach JK. Diagnosis, Staging, and Management of Hepatocellular Carcinoma: 2018 Practice Guidance by the American Association for the Study of Liver Diseases. *Hepatology*. 2018;68:723–750.



June 2022

## U.S. Preventive Services Task Force

Created in 1984, the USPSTF is an independent, volunteer panel of national experts in prevention and evidence-based medicine. The Task Force works to improve the health of people nationwide by making evidence-based [recommendations](#) about clinical preventive services such as screenings, counseling services, and preventive medications.

The USPSTF assigns each recommendation a [letter grade](#) (an A, B, C, or D grade or an I statement) based on the strength of the evidence and the balance of benefits and harms of a preventive service. The USPSTF does not [consider the costs](#) of a preventive service when determining a recommendation grade. The recommendations apply only to people who have no signs or symptoms of the specific disease or condition under evaluation, and the recommendations address only services offered in the primary care setting or services referred by a PCP.

USPSTF - What the Grades Mean and Suggestions for Practice		
Grade	Definition	Suggestions for Practice
<b>A</b>	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer or provide this service.
<b>B</b>	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer or provide this service.
<b>C</b>	<i>Note: The following statement is undergoing revision.</i> Clinicians may provide this service to selected patients depending on individual circumstances. However, for most individuals without signs or symptoms there is likely to be only a small benefit from this service.	Offer or provide this service only if other considerations support the offering or providing the service in an individual patient.
<b>D</b>	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
<b>I Statement</b>	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read the clinical considerations section of USPSTF Recommendation Statement. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.