**Overview of preventive care in adults**

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**INTRODUCTION**

Quality health care for individuals includes two fundamental elements: appropriate treatment for current illness and appropriate preventive care to attempt to lessen future health decline. Preventive health care is an important aspect of medical practice, leading to significant improvements in overall health [[1](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/1)].

Several issues are involved in providing effective preventive care. Clinicians need to prioritize and decide which of the many available preventive services to recommend and which to discourage to prevent harm from inappropriate tests or interventions. Clinicians also must find a way to deliver preventive services efficiently within the context of a busy clinical practice.

This topic will discuss the approach to prevention and how to prioritize preventive services. It will also summarize primary prevention and screening recommendations primarily targeting United States adults <65 years old. The recommendations are a compilation of those from individual UpToDate topics, in which the rationale and evidence base for the recommendations are provided.

Preventive care in certain populations and disease-specific screening recommendations are discussed in more detail in specific topic reviews. As examples:

●Pregnant women (see ["Prenatal care: Initial assessment"](https://www.uptodate.com/contents/prenatal-care-initial-assessment?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Prenatal care: Second and third trimesters"](https://www.uptodate.com/contents/prenatal-care-second-and-third-trimesters?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

●Gay men (see ["Primary care of gay men and men who have sex with men"](https://www.uptodate.com/contents/primary-care-of-gay-men-and-men-who-have-sex-with-men?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

●Patients with HIV (see ["Primary care of adults with HIV"](https://www.uptodate.com/contents/primary-care-of-adults-with-hiv?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

●Cancer survivors (see ["Overview of cancer survivorship care for primary care and oncology providers"](https://www.uptodate.com/contents/overview-of-cancer-survivorship-care-for-primary-care-and-oncology-providers?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

●Patients with diabetes mellitus (see ["Overview of general medical care in nonpregnant adults with diabetes mellitus"](https://www.uptodate.com/contents/overview-of-general-medical-care-in-nonpregnant-adults-with-diabetes-mellitus?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

●Older adults (See ["Geriatric health maintenance"](https://www.uptodate.com/contents/geriatric-health-maintenance?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Evidence-based approach to prevention"](https://www.uptodate.com/contents/evidence-based-approach-to-prevention?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●Transgender men and women (See ["Transgender women: Evaluation and management"](https://www.uptodate.com/contents/transgender-women-evaluation-and-management?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Transgender men: Evaluation and management"](https://www.uptodate.com/contents/transgender-men-evaluation-and-management?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Primary care of transgender individuals"](https://www.uptodate.com/contents/primary-care-of-transgender-individuals?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

Basic epidemiologic principles of screening in adults are presented elsewhere. (See ["Evidence-based approach to prevention"](https://www.uptodate.com/contents/evidence-based-approach-to-prevention?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**PRIORITIZING PREVENTIVE SERVICES**Preventive services should focus on priority health problems and effective interventions. Rather than performing a standardized comprehensive examination ("full physical") on all patients, clinicians should individualize screening and prevention interventions to maximize value, which encompasses the tradeoffs between benefits, harms, and costs [[2,3](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/2,3)].

We recommend referring to the US Preventive Services Task Force (USPSTF) [website](https://www.uptodate.com/external-redirect.do?target_url=https%3A%2F%2Fwww.uspreventiveservicestaskforce.org%2F&token=MqJ3rtxolH1MkLRU%2B%2BG5DbT4zbrbIgwz5KdZEUPtMqy2Hp1ywe%2FsPYXSTDLk0gQJ4wGDxRB3I3XGJ4M9UhnhRg%3D%3D&TOPIC_ID=97819) for the most up-to-date screening [recommendations](https://www.uptodate.com/external-redirect.do?target_url=https%3A%2F%2Fwww.uspreventiveservicestaskforce.org%2FPage%2FName%2Frecommendations&token=c3eYJaI7rhYlvoz%2ByNegNJqsHHMW2K5dbaRrTdEoQD2PyTr9M%2Fa1LaraMvMxIeY5F0dD15Z5qoiwMvKia7kxBO7zcrgYiFR7EmRn4iG8rVM%3D&TOPIC_ID=97819) based on systematic reviews of available evidence. We provide a review of screening, prevention, and counseling recommendations for older adults elsewhere. (See ["Geriatric health maintenance"](https://www.uptodate.com/contents/geriatric-health-maintenance?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**Factors to consider** — Priority services may differ from patient to patient depending upon age, sex, and other risk factors. The effects of recommended preventive interventions on longevity or quality of life vary widely, and the potential beneficial effect of any one intervention on an individual patient varies with his or her lifestyle, medical and family history, and other risk factors [[4](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/4)]. Available tools to help clinicians prioritize preventive services include:

●The Partnership for Prevention, which ranks preventive services based on the clinically preventable burden of disease and the cost-effectiveness of interventions [[5](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/5)]. The list includes [aspirin](https://www.uptodate.com/contents/aspirin-drug-information?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) chemoprophylaxis to reduce cardiovascular events, childhood immunizations, and smoking cessation advice.

●The [Electronic Preventive Services Selector](https://www.uptodate.com/external-redirect.do?target_url=http%3A%2F%2Fepss.ahrq.gov%2FePSS%2Fsearch.jsp&token=gXaBP0cCSMCZZDQU6%2F52D1Eol%2BY8uF9Qbp%2FOcrB0F4%2B26Oi0yDTfokH7TqE%2FfbUS&TOPIC_ID=97819) (ePSS), a convenient tool to identify patient-specific preventive services recommended by the USPSTF, based upon a patient's sex, age, pregnancy status, tobacco use, and whether they are sexually active.

As with all clinical decisions, patient preferences are also of prime importance [[6](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/6)]. Risks and benefits should be communicated to patients in a way that they can understand, which can be challenging because many patients have a limited understanding of probabilities. A 2014 systematic review found that patients are better able to understand absolute than relative risks, and that visual aids can be helpful [[7](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/7)]. Studies also suggest that patients tend to overestimate the benefits and underestimate the harms of interventions (including screening tests) [[8](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/8)].

Further, scheduled preventive interventions (eg, cancer screenings) may need to be deferred due to intercurrent individual illness or a larger public health crises (eg, epidemic or pandemic infectious disease) [[9](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/9)]. In such circumstances, patients should be reassured that preventative interventions will be resumed when appropriate.

**Overview of USPSTF recommendations** — The USPSTF publishes evidence-based recommendations for multiple clinical preventive services based upon systematic reviews, each of which is graded based on a set of definitions [[10,11](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/10,11)].

●[USPSTF A and B level recommendations](https://www.uptodate.com/external-redirect.do?target_url=http%3A%2F%2Fwww.uspreventiveservicestaskforce.org%2FPage%2FName%2Fuspstf-a-and-b-recommendations%2F&token=%2F7CsxXCguJd7Gr%2Bo45nQ%2FBCUSDP67QrI5voKFr8scbBFhnpPx%2FlKL%2FCfOp8Yr6BEjkxvFdTi3pk8Pz08r7xKmZNp7U8s1L5yKMj4VFveowpqKarzj1JGVyXxsC69o2Xk&TOPIC_ID=97819) – The USPSTF recommends certain screening and counseling interventions either with high certainty that the net benefit is substantial ("Grade A"), with high certainty that the net benefit is moderate, or with moderate certainty that the net benefit is moderate to substantial ("Grade B"). These Grade A and B level recommendations should be offered to patients.

●USPSTF C level recommendations – Preventive services for which there is at least moderate certainty that the net benefit is small are rated as "Grade C." The USPSTF recommends selectively offering or providing these services to individual patients based on professional judgment, patient preferences, and individual circumstances.

●USPSTF D level recommendations – Preventive services for which there is moderate or high certainty that the service has **no** net benefit or that the harms outweigh the benefits are rated as "Grade D." The USPSTF recommendsagainst these services.

●USPSTF level I recommendations – Preventive services for which the balance of benefits and harms cannot be determined due to lack of sufficient evidence, or poor quality or conflicting evidence, are rated as "Grade I."If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

**Harms of screening** — There are harms associated with screening, including anxiety produced by false-positive screening tests, harms associated with diagnostic testing after a positive screening test, overdiagnosis of conditions that may be treated but would never have become clinically apparent, and cost [[12-14](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/12-14)]. Comorbid conditions may decrease the benefits and increase the harms associated with screening [[15](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/15)]. The benefits of screening may decrease as patients get older, particularly for cancer screening [[16](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/16)]. Cancer screening in older adults is discussed in detail elsewhere. (See ["Geriatric health maintenance", section on 'Cancer screening'](https://www.uptodate.com/contents/geriatric-health-maintenance?sectionName=Cancer+screening&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H15&source=see_link#H15).)

Clinicians should make sure that patients understand the potential harms prior to screening and consider comorbidities when discussing screening. Patients may weigh potential benefits and harms of screening and, in some cases, decide against screening. This is a reasonable decision that should be accepted by clinicians. The optimal screening rate is less than 100 percent when patients are adequately counseled regarding the potential benefits and harms of screening.

Screening of patients who are unlikely to benefit from screening is common. As an example, in an observational study including 27,000 patients ≥65 years, 31 to 55 percent of those with ≥75 percent risk of nine-year mortality had received prostate, breast, cervical, or colorectal cancer screening within the previous two to five years [[17](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/17)].

**HOW TO EFFICIENTLY DELIVER PREVENTION**

**Periodic "check-up"** — There are no strict guidelines for the optimal frequency of periodic visits, and there is no evidence on which to base optimal frequency recommendations [[18](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/18)]. Annual examinations are not indicated for most younger patients, although people with chronic health issues (such as diabetes) warrant regular visits, with or without a periodic health maintenance visit, independent of age [[19](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/19)]. In the absence of such indications, we suggest periodic health maintenance visits every three years for adult patients ≤49 years without chronic conditions, and annually for adults ≥50 years. For people who have no chronic conditions and rarely see a clinician, a periodic health evaluation visit may be the only opportunity to discuss preventive care.

Preventive counseling and services are an important component of the periodic health check-up [[20-22](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/20-22)]. Preventive services are more likely to be discussed when patients have an established relationship with an identified clinician. Studies have shown that patients who were connected to a specific clinician have higher rates of preventive services received [[22-25](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/22-25)]. Patients with more visits to their primary care providers were more likely to undergo screening for colorectal and breast cancer, have lower incidence and mortality of colorectal and breast cancer, and have lower overall mortality. Periodic visits may have other benefits, such as developing the patient-clinician relationship, relieving patient "worry," and educating patients about how to access the health care system [[21,26](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/21,26)].

In a 2014 meta-analysis including six randomized trials, general practice-based health checks did not decrease mortality but improved surrogate outcomes (blood pressure control, decreases in total cholesterol and body mass index [BMI]), especially in high-risk patients [[27](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/27)]. In another meta-analysis including 14 randomized trials and over 180,000 participants, there was no beneficial effect of general health checks on total, cardiovascular or cancer mortality despite increased detection of hypertension and hypercholesterolemia as well as increased use of antihypertensives [[28](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/28)]. However, some methodologic problems of the included trials (including the age of some trials which predated the routine use of statins) may limit interpretation of the results.

**Discussing stopping or reducing screening** — Changes to recommendations that result in a decrease in the intensity of screening or discontinuing screening for those patients with reduced likelihood of benefit may be problematic for patients. In particular, patients may be confused by these changes, especially if they view screening as something they can do to protect themselves from a feared condition [[3](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/3)]. How best to explain the rationale for less-intensive or discontinued screening can be challenging. Although we know of no easy formula for conducting these discussions, some general suggestions may be useful:

●The idea that screening programs can result in harm is often new to patients. Patients should be educated that the primary issue underlying any screening recommendation is the balance between the likelihood of benefit and the risk of harm. A discussion of hypothetical examples that illustrate how screening may lead to unnecessary, difficult, and possibly risky diagnostic procedures (such as lung biopsy) or treatment (such as chemotherapy for cancer that would not have become clinically apparent over the patient's lifetime) may be helpful.

●One may acknowledge the patient's interest in preserving health and longevity and refocus the patient away from more intensive or longer screening toward other prevention activities that bring a higher likelihood of benefit.

●For older patients with limited life expectancy, it may also be useful to start the discussion of stopping screening some years before actual stopping. Older patients, advised over years that screening is an important part of medical care, may view stopping screening as an indication that they are no longer "worth" the expense or effort [[29](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/29)]. Again, hypothetical stories may be used to illustrate the reality that the probability of benefit from screening decreases and the probability of harm from overdiagnosis increases in advanced age. In addition, harm occurs soon after screening while any benefit occurs only years after screening. For example, for colorectal cancer and breast cancer screening, a patient must live 10 years to have a 1 in 1000 probability of having their life extended, and 16 years to have a 2 in 1000 probability [[30](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/30)]. If a patient is overdiagnosed, however, they receive unnecessary treatment (often including surgery) soon after diagnosis.

**Supportive office systems** — Creative approaches using office systems can assist in delivering needed preventive care [[31](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/31)]. As an example, practices have successfully used databases of eligible patients (eg, for flu shots, mammograms, diabetic eye exams, etc) and automatic reminders to outreach to patients and assist in delivering routine preventive care [[32](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/32)]. In one study of interventions to promote screening for colorectal cancer, mailings to patients were somewhat more effective than electronic reminders to clinicians [[33](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/33)]. Finally, using decision aids and/or training medical assistants to discuss important preventive services before a visit with a clinician can be more efficient and effective in helping patients make informed decisions [[34](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/34)].

**CARDIOVASCULAR DISEASE PREVENTION**

**Cardiovascular risk assessment** — Patients aged ≥20 years should undergo cardiovascular risk assessment every three to five years.

Cardiovascular disease (CVD) risk can be estimated using one of several widely available tools, each with advantages and disadvantages. While all of the risk assessment tools have advantages and disadvantages, no single tool will be appropriate for all patients. We encourage clinicians to become familiar with and use a CVD risk calculator that has been locally endorsed and that has been validated for their locale and for patient-specific race and ethnic groups. (See ["Cardiovascular disease risk assessment for primary prevention: Risk calculators"](https://www.uptodate.com/contents/cardiovascular-disease-risk-assessment-for-primary-prevention-risk-calculators?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

The major risk factors for CVD that are modifiable include (see ["Overview of primary prevention of cardiovascular disease"](https://www.uptodate.com/contents/overview-of-primary-prevention-of-cardiovascular-disease?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link)):

●Diet (see ["Healthy diet in adults"](https://www.uptodate.com/contents/healthy-diet-in-adults?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

●Smoking (see ["Cardiovascular risk of smoking and benefits of smoking cessation"](https://www.uptodate.com/contents/cardiovascular-risk-of-smoking-and-benefits-of-smoking-cessation?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

●Hypertension (see ["Cardiovascular risks of hypertension"](https://www.uptodate.com/contents/cardiovascular-risks-of-hypertension?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

●Dyslipidemia (see ["Management of elevated low density lipoprotein-cholesterol (LDL-C) in primary prevention of cardiovascular disease"](https://www.uptodate.com/contents/management-of-elevated-low-density-lipoprotein-cholesterol-ldl-c-in-primary-prevention-of-cardiovascular-disease?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

●Obesity

●Physical activity (see ["The benefits and risks of aerobic exercise", section on 'Cardiovascular disease'](https://www.uptodate.com/contents/the-benefits-and-risks-of-aerobic-exercise?sectionName=Cardiovascular+disease&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H12&source=see_link#H12))

●Diabetes mellitus (see ["Prevalence of and risk factors for coronary heart disease in patients with diabetes mellitus", section on 'Diabetes as a CHD equivalent'](https://www.uptodate.com/contents/prevalence-of-and-risk-factors-for-coronary-heart-disease-in-patients-with-diabetes-mellitus?sectionName=Diabetes+as+a+CHD+equivalent&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H3&source=see_link#H3))

Screening for coronary heart disease in patients with risk factors is discussed in detail elsewhere. (See ["Screening for coronary heart disease"](https://www.uptodate.com/contents/screening-for-coronary-heart-disease?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**Hypertension** — Hypertension screening is recommended for adults ≥18 years of age [[35,36](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/35,36)]. The optimal interval for screening for hypertension is not known. Most patients have their blood pressure checked at each primary care visit.

The 2015 US Preventive Services Task Force (USPSTF) guidelines recommend hypertension screening every year for adults ≥40 years and for those who are at high risk for high blood pressure (patients with high-normal blood pressure [130 to 139/85 to 89 mmHg] who are overweight or obese, and African Americans) [[35](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/35)]. Adults aged 18 to 39 years with normal blood pressure (<130/85 mmHg) without risk factors should be rescreened every three to five years.

Recommendations for target blood pressure and treatment differ based on several factors including comorbidities, method of blood pressure measurement and age. (See ["Blood pressure measurement in the diagnosis and management of hypertension in adults"](https://www.uptodate.com/contents/blood-pressure-measurement-in-the-diagnosis-and-management-of-hypertension-in-adults?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Overview of hypertension in adults", section on 'Definitions'](https://www.uptodate.com/contents/overview-of-hypertension-in-adults?sectionName=DEFINITIONS&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H2&source=see_link#H2) and ["Goal blood pressure in adults with hypertension"](https://www.uptodate.com/contents/goal-blood-pressure-in-adults-with-hypertension?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**Hyperlipidemia**

●We suggest that patients aged 17 to 21 years undergo one-time screening for hyperlipidemia with a non-fasting non-high-density lipoprotein (non-HDL) cholesterol; non-HDL cholesterol is the difference between total cholesterol and HDL cholesterol [[37](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/37)]. (See ["Dyslipidemia in children: Definition, screening, and diagnosis"](https://www.uptodate.com/contents/dyslipidemia-in-children-definition-screening-and-diagnosis?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●For patients with a normal screen before age 21 who are also at high risk, we suggest screening for lipid abnormalities starting at age 25 for men and 35 for women. We consider patients at high risk if they have more than one risk factor (eg, diabetes, hypertension, smoking, family history) or a single risk factor that is severe (eg, several siblings with coronary heart disease in their 40s or a very heavy smoker).

●For patients with a normal screen before age 21 who are not at high risk, we suggest screening for lipid abnormalities starting at age 35 for men and 45 for women.

In patients whose lipid measurements place them well below the threshold for treatment (including lifestyle modification or lifestyle modification plus pharmacologic therapy), we suggest repeating measurements every five years. In patients who have had multiple lipid screenings with acceptable measurements, we suggest stopping screening at age 65. Ongoing assessment of cardiovascular risk can be based upon other risk factors and earlier lipid levels. (See ["Screening for lipid disorders in adults"](https://www.uptodate.com/contents/screening-for-lipid-disorders-in-adults?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

When a decision is made to screen lipids to assess cardiovascular risk, we suggest measuring the total cholesterol and HDL cholesterol rather than a complete lipid profile or other lipid marker or fractions. Testing for total cholesterol and HDL cholesterol does not require a fasting test. (See ["Screening for lipid disorders in adults", section on 'Choice of tests'](https://www.uptodate.com/contents/screening-for-lipid-disorders-in-adults?sectionName=CHOICE+OF+TESTS&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H7832879&source=see_link#H7832879).)

**Obesity** — We suggest screening all patients for obesity with a body mass index (BMI) and counseling all patients to maintain a healthy body weight ([calculator 1](https://www.uptodate.com/contents/calculator-body-mass-index-bmi-quetelets-index-in-adults?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link)). Selection of patients for treatment should be based upon BMI and risk factor assessment. (See ["Obesity in adults: Prevalence, screening, and evaluation"](https://www.uptodate.com/contents/obesity-in-adults-prevalence-screening-and-evaluation?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Obesity in adults: Overview of management"](https://www.uptodate.com/contents/obesity-in-adults-overview-of-management?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**Physical activity** — We suggest counseling patients about exercise to promote maintenance of healthy weight and physical activity for all patients. (See ["The benefits and risks of aerobic exercise"](https://www.uptodate.com/contents/the-benefits-and-risks-of-aerobic-exercise?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Exercise and fitness in the prevention of atherosclerotic cardiovascular disease"](https://www.uptodate.com/contents/exercise-and-fitness-in-the-prevention-of-atherosclerotic-cardiovascular-disease?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**Diabetes mellitus** — For adults with hypertension or hyperlipidemia, as well as for all adults aged 40 to 70 years with a BMI ≥25 kg/m2, we suggest screening for type 2 diabetes as part of cardiovascular risk assessment. (See ["Screening for type 2 diabetes mellitus", section on 'A suggested approach'](https://www.uptodate.com/contents/screening-for-type-2-diabetes-mellitus?sectionName=A+SUGGESTED+APPROACH&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H13&source=see_link#H13).)

When convenient, we recommend screening using fasting plasma glucose measured in a laboratory using a venous sample rather than a capillary fingerstick. Simultaneously checking a hemoglobin A1C is a reasonable option, especially in patients with the highest risk of diabetes (eg, those with multiple risk factors or a known abnormal glucose metabolism). When obtaining a fasting specimen is inconvenient, we recommend screening using a hemoglobin A1C.

**Aspirin for primary prevention** — Decisions regarding [aspirin](https://www.uptodate.com/contents/aspirin-drug-information?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) for primary prevention of CVD should be made on an individual basis. Factors to be considered are discussed in detail elsewhere. (See ["Aspirin in the primary prevention of cardiovascular disease and cancer"](https://www.uptodate.com/contents/aspirin-in-the-primary-prevention-of-cardiovascular-disease-and-cancer?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**Routine electrocardiogram** — A routine electrocardiogram (ECG), even for a "baseline," is not indicated in asymptomatic adults at low risk for CVD. (See ["Screening for coronary heart disease", section on 'Resting ECG and ambulatory ECG monitoring'](https://www.uptodate.com/contents/screening-for-coronary-heart-disease?sectionName=Resting+ECG+and+ambulatory+ECG+monitoring&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H349915881&source=see_link#H349915881).)

**Nontraditional measures** — Coronary artery calcium testing may be useful as a complement to CVD risk assessment in select patients (see ["Coronary artery calcium scoring: Image acquisition and clinical utilization"](https://www.uptodate.com/contents/coronary-artery-calcium-scoring-image-acquisition-and-clinical-utilization?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link)). We do not recommend screening low-risk patients with other nontraditional measures (eg, C-reactive protein, carotid artery intima-media thickness, homocysteine, or lipoprotein[a]).

However, as discussed separately, these measures may be warranted for patients without known CVD who are at intermediate risk for CVD and for whom a more definite estimate of CVD risk would change management:

●C-reactive protein (see ["C-reactive protein in cardiovascular disease"](https://www.uptodate.com/contents/c-reactive-protein-in-cardiovascular-disease?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

●Carotid artery intima-media thickness (see ["Carotid intima-media thickness"](https://www.uptodate.com/contents/carotid-intima-media-thickness?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

●Homocysteine (see ["Overview of homocysteine"](https://www.uptodate.com/contents/overview-of-homocysteine?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

●Lipoprotein(a) (see ["Lipoprotein(a)"](https://www.uptodate.com/contents/lipoprotein-a?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

**CANCER PREVENTION**A number of measures can be taken to prevent cancer, including:

●Avoidance of tobacco

●Being physically active

●Maintaining a healthy weight

●Eating a diet rich in fruits, vegetables, whole grains, and low in saturated/trans fat

●Limiting alcohol consumption

●Protecting against sexually transmitted infections (including receiving human papillomavirus [HPV] vaccination)

●Avoiding excess sun exposure

Smoking tobacco products (primarily cigarettes) is the most important risk factor for the development of lung cancer. All patients who smoke should be counselled to quit smoking as the most effective intervention to reduce the risk of lung cancer. (See ["Cigarette smoking and other possible risk factors for lung cancer"](https://www.uptodate.com/contents/cigarette-smoking-and-other-possible-risk-factors-for-lung-cancer?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Overview of smoking cessation management in adults"](https://www.uptodate.com/contents/overview-of-smoking-cessation-management-in-adults?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**CANCER SCREENING**

**Breast cancer** — Major risk factors for breast cancer in women are age, genetic predisposition, and estrogen exposure ([table 1](https://www.uptodate.com/contents/image?imageKey=PC%2F64508&topicKey=PC%2F97819&search=preventive+care+in+adults+recommendations&rank=1%7E150&source=see_link)). Evaluation for hereditary breast and ovarian cancer syndromes should be considered in men and women with a personal or family history that is concerning. (See ["Factors that modify breast cancer risk in women"](https://www.uptodate.com/contents/factors-that-modify-breast-cancer-risk-in-women?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Screening for breast cancer: Strategies and recommendations", section on 'Clinical use of risk prediction models'](https://www.uptodate.com/contents/screening-for-breast-cancer-strategies-and-recommendations?sectionName=Clinical+use+of+risk+prediction+models&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H1353925605&source=see_link#H1353925605).)

●Family history – Men and women at risk for hereditary breast and ovarian cancer syndromes should be identified by taking a thorough personal and family history, with a focus on both the maternal and paternal sides of the family ([table 2](https://www.uptodate.com/contents/image?imageKey=PC%2F65717&topicKey=PC%2F97819&search=preventive+care+in+adults+recommendations&rank=1%7E150&source=see_link)). Patients with concerning family history should be referred to a genetic counselor for a formal genetic assessment. Recommendations for screening in patients with a hereditary breast and ovarian cancer syndrome are discussed in detail elsewhere. (See ["Overview of hereditary breast and ovarian cancer syndromes associated with genes other than BRCA1/2"](https://www.uptodate.com/contents/overview-of-hereditary-breast-and-ovarian-cancer-syndromes-associated-with-genes-other-than-brca1-2?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Cancer risks and management of BRCA1/2 carriers without cancer"](https://www.uptodate.com/contents/cancer-risks-and-management-of-brca1-2-carriers-without-cancer?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●Screening for average-risk women – Clinicians should discuss breast cancer screening with all women starting at age 40. The decision to perform mammography should be determined by individual patient risk and values through shared decision-making. It should be emphasized that the relative benefits and harms of screening change as a woman gets older. The absolute benefits, in terms of numbers of lives saved, are lower for younger women than for older women because of both decreased incidence of breast cancer and sensitivity of mammography in younger women. (See ["Screening for breast cancer: Strategies and recommendations", section on 'Shared medical decision-making'](https://www.uptodate.com/contents/screening-for-breast-cancer-strategies-and-recommendations?sectionName=SHARED+MEDICAL+DECISION-MAKING&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H3331475080&source=see_link#H3331475080) and ["Screening for breast cancer: Strategies and recommendations", section on 'Benefits and harms of screening'](https://www.uptodate.com/contents/screening-for-breast-cancer-strategies-and-recommendations?sectionName=BENEFITS+AND+HARMS+OF+SCREENING&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H41187217&source=see_link#H41187217).)

All women should receive counseling about the benefits and harms of screening and understand that mammography is associated with a substantial risk for false-positive findings. Given declining mortality rates from breast cancer after advances in treatment protocols, some women may choose to forego screening.

For women who choose to undergo screening, the ideal interval for screening mammography is not known. We suggest screening every two years.

●Age to stop screening – We suggest that breast cancer screening with mammography be continued as long as a woman has a life expectancy of at least 10 years.

We suggest that women being screened for breast cancer not undergo clinical breast examination.

We suggest that breast self-examination (BSE) not be performed except by women who express a desire to do so and who have received careful instruction to differentiate normal tissue from suspicious lumps. (See ["Screening for breast cancer: Evidence for effectiveness and harms", section on 'Breast self-examination'](https://www.uptodate.com/contents/screening-for-breast-cancer-evidence-for-effectiveness-and-harms?sectionName=Breast+self-examination&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H3757879&source=see_link#H3757879).)

**Cervical cancer** — We recommend cervical cancer screening for immunocompetent women ages 21 to 65 years who have an intact cervix. (See ["Screening for cervical cancer"](https://www.uptodate.com/contents/screening-for-cervical-cancer?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●For average-risk women (without HIV or immunocompromise) aged 21 to 29, we suggest Pap smear screening every three years.

●For average-risk women (without HIV or immunocompromise) aged 30 to 64, we suggest either Pap smear screening every three years or co-testing (Pap smear and human papillomavirus [HPV] testing) every five years if both initial tests are negative. (See ["Screening for cervical cancer", section on 'Age 30 years or older'](https://www.uptodate.com/contents/screening-for-cervical-cancer?sectionName=Age+30+years+or+older&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H3570212629&source=see_link#H3570212629).)

●Women ≥65 years who have had adequate negative prior screening and are not at increased risk do not need to be screened.

However, even in older women who have been adequately screened, it may be reasonable to continue to screen those with good life expectancy who have risk factors for cervical cancer. Risk factors include a history of an abnormal Pap test, current smoker or history of smoking, previous HPV-related disease, or new sexual partners. We continue to offer screening to women with good life expectancy who have risk factors for cervical cancer until about age 80, but the upper age limit may vary with the risk factor (eg, women with good life expectancy and a history of cervical intraepithelial neoplasia (CIN) 2 or greater should be screened for at least 20 years following diagnosis).

●Older women who have not been adequately screened should be screened until age 70 to 75 years. (See ["Screening for cervical cancer"](https://www.uptodate.com/contents/screening-for-cervical-cancer?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●Women who have had a total hysterectomy for reasons other than cervical cancer or high-grade cervical cancer precursors need not be screened. (See ["Screening for cervical cancer", section on 'Prior benign hysterectomy'](https://www.uptodate.com/contents/screening-for-cervical-cancer?sectionName=Prior+benign+hysterectomy&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H2603667132&source=see_link#H2603667132).)

Recommendations for screening for cervical cancer in women with HIV, women immunocompromised for other reasons, and other special populations are discussed in detail elsewhere. (See ["Screening for cervical cancer in HIV-infected women and adolescents"](https://www.uptodate.com/contents/screening-for-cervical-cancer-in-hiv-infected-women-and-adolescents?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Screening for cervical cancer"](https://www.uptodate.com/contents/screening-for-cervical-cancer?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**Ovarian cancer** — A family history is essential to identifying women at high risk for ovarian cancer who might benefit from further evaluation. This is described in detail separately. (See ["Screening for ovarian cancer", section on 'Family history'](https://www.uptodate.com/contents/screening-for-ovarian-cancer?sectionName=Family+history&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H2530057230&source=see_link#H2530057230).)

Screening for ovarian cancer is not recommended for women at average risk. (See ["Screening for ovarian cancer", section on 'Average-risk patients'](https://www.uptodate.com/contents/screening-for-ovarian-cancer?sectionName=Average-risk+patients&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H1272747964&source=see_link#H1272747964).)

**Colorectal cancer** — The age of initiation and frequency of colorectal cancer screening varies with the risk:

●No risk factors – We recommend that average-risk patients aged 50 and older be screened for colorectal cancer. We suggest that screening be continued until the life expectancy for an individual patient is estimated as less than 10 years. For most patients, it is reasonable to stop screening at age 75 years or 85 years at the latest. One-time screening with colonoscopy (to age 83) or sigmoidoscopy (to age 84) is advised for adults who have never been screened for colorectal cancer. (See ["Screening for colorectal cancer: Strategies in patients at average risk", section on 'Choosing a screening test'](https://www.uptodate.com/contents/screening-for-colorectal-cancer-strategies-in-patients-at-average-risk?sectionName=CHOOSING+A+SCREENING+TEST&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H136775238&source=see_link#H136775238) and ["Screening for colorectal cancer: Strategies in patients at average risk"](https://www.uptodate.com/contents/screening-for-colorectal-cancer-strategies-in-patients-at-average-risk?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

The [recommended interval](https://www.uptodate.com/external-redirect.do?target_url=https%3A%2F%2Fwww.uspreventiveservicestaskforce.org%2FPage%2FDocument%2FRecommendationStatementFinal%2Fcolorectal-cancer-screening2%23tab&token=kwFTvO2ScjQp0WSPb51VvHz9nRrmikoWOdVFNEwkrk0Hn58tJMKwUmZoeArSKB8dTbZoRPEmzYqLT%2F9ha5XYjdKBvthNbCFL4aJrmsv11Z6bBbdZlyo4MdStWx9hqHWPzCtry3Wk4XDJW9OY3WVeiQ%3D%3D&TOPIC_ID=97819) varies depending upon the screening strategy. Patients should be advised of the risks and benefits of different screening options. The decision about which option to select should be made between the patient and clinician, weighing factors of effectiveness, safety, cost, and availability of the screening tests. (See ["Screening for colorectal cancer: Strategies in patients at average risk"](https://www.uptodate.com/contents/screening-for-colorectal-cancer-strategies-in-patients-at-average-risk?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●Family history of colorectal cancer. (See ["Screening for colorectal cancer in patients with a family history of colorectal cancer or advanced polyp"](https://www.uptodate.com/contents/screening-for-colorectal-cancer-in-patients-with-a-family-history-of-colorectal-cancer-or-advanced-polyp?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●Familial adenomatous polyposis. (See ["Familial adenomatous polyposis: Screening and management of patients and families"](https://www.uptodate.com/contents/familial-adenomatous-polyposis-screening-and-management-of-patients-and-families?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●Lynch syndrome. (See ["Lynch syndrome (hereditary nonpolyposis colorectal cancer): Cancer screening and management"](https://www.uptodate.com/contents/lynch-syndrome-hereditary-nonpolyposis-colorectal-cancer-cancer-screening-and-management?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●Peutz-Jeghers syndrome. (See ["Juvenile polyposis syndrome"](https://www.uptodate.com/contents/juvenile-polyposis-syndrome?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●Inflammatory bowel disease. (See ["Surveillance and management of dysplasia in patients with inflammatory bowel disease"](https://www.uptodate.com/contents/surveillance-and-management-of-dysplasia-in-patients-with-inflammatory-bowel-disease?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**Lung cancer** — For patients at increased risk for lung cancer, we suggest annual screening with low-dose helical computed tomography (CT). This includes patients who are age 55 to 74 years with a history of smoking at least 30 pack-years and, if a former smoker, have quit within the previous 15 years. Further discussion on the appropriateness of lung cancer screening in selected patients can be found elsewhere. (See ["Screening for lung cancer", section on 'Synthesizing the available evidence'](https://www.uptodate.com/contents/screening-for-lung-cancer?sectionName=SYNTHESIZING+THE+AVAILABLE+EVIDENCE&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H23&source=see_link#H23) and ["Screening for lung cancer", section on 'Counseling for screening'](https://www.uptodate.com/contents/screening-for-lung-cancer?sectionName=Counseling+for+screening&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H25&source=see_link#H25).)

**Prostate cancer** — Individual patient preferences for specific health outcomes are a deciding factor in determining whether to screen for prostate cancer. Men who are potential candidates for screening should be engaged in discussions or decision-making processes that inform them and evoke these preferences. (See ["Screening for prostate cancer", section on 'Approach to screening'](https://www.uptodate.com/contents/screening-for-prostate-cancer?sectionName=APPROACH+TO+SCREENING&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H33&source=see_link#H33).)

Health care providers should periodically discuss prostate cancer screening with men who are expected to live at least 10 years and are old enough to be at significant risk for prostate cancer. We suggest that discussions begin at age 50 in average-risk men. We suggest discussions begin at age 40 to 45 in men at high risk for prostate cancer (including black men; men with a family history of prostate cancer, particularly in relatives younger than age 65; and men who are known or likely to have the *BRCA1* or *BRCA2* mutations).

**Melanoma**

●We recommend that individuals at highest risk (history suggesting a familial melanoma syndrome or with multiple atypical nevi) have a regular full-body skin examination by a clinician with skin expertise. The optimal frequency for such examination is unknown. (See ["Screening and early detection of melanoma in adults and adolescents"](https://www.uptodate.com/contents/screening-and-early-detection-of-melanoma-in-adults-and-adolescents?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●We suggest that persons at higher risk for melanoma (white men over 50 years, individuals with a history of significant sunburn or multiple moles) have a periodic full body skin examination performed by a clinician who has had appropriate training in the identification of melanoma.

●We also suggest that individuals at high risk for skin cancer be counseled about self-skin examination and advised to examine their skin regularly and notify their clinicians if moles change.

●For patients without identified increased risk, we agree with the US Preventive Services Task Force (USPSTF) that clinicians remain vigilant for any suspicious lesions identified in the course of a routine or sick visit (opportunistic case finding) and make appropriate referrals for further evaluation of all such lesions.

**OTHER SCREENING**

●**Iron deficiency** – We do not routinely screen every adult for iron deficiency, but we do screen those at higher risk (eg, premenopausal women, particularly those with prior pregnancies or heavy menstrual periods, as well as individuals with conditions that might cause blood loss or iron malabsorption). The frequency of screening is also individualized; annual screening may be reasonable for those at the highest risk, such as a menstruating woman with heavy periods. Screening for iron deficiency is discussed in detail elsewhere. (See ["Causes and diagnosis of iron deficiency and iron deficiency anemia in adults", section on 'Screening (asymptomatic individuals)'](https://www.uptodate.com/contents/causes-and-diagnosis-of-iron-deficiency-and-iron-deficiency-anemia-in-adults?sectionName=SCREENING+%28ASYMPTOMATIC+INDIVIDUALS%29&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H4040374506&source=see_link#H4040374506).)

Screening for iron deficiency in pregnant individuals is discussed elsewhere. (See ["Anemia in pregnancy", section on 'Screening during pregnancy'](https://www.uptodate.com/contents/anemia-in-pregnancy?sectionName=SCREENING+DURING+PREGNANCY&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H7886297&source=see_link#H7886297).)

●**Hypothyroidism** – Although subclinical hypothyroidism is common in the adult population [[38](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/38)], we do not routinely screen most asymptomatic non-pregnant adults as there is no evidence that early detection and treatment with T4 improves clinically important outcomes in such individuals. However, we do screen individuals who are at increased risk for hypothyroidism, including those with goiter, history of autoimmune disease, previous radioactive iodine therapy, and/or head and neck irradiation, family history of thyroid disease, and use of medications that may impair thyroid function. This is discussed in detail elsewhere. (See ["Diagnosis of and screening for hypothyroidism in nonpregnant adults", section on 'Screening'](https://www.uptodate.com/contents/diagnosis-of-and-screening-for-hypothyroidism-in-nonpregnant-adults?sectionName=SCREENING&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H8&source=see_link#H8).)

Recommendations for screening pregnant women for hypothyroidism are discussed separately. (See ["Hypothyroidism during pregnancy: Clinical manifestations, diagnosis, and treatment", section on 'Screening'](https://www.uptodate.com/contents/hypothyroidism-during-pregnancy-clinical-manifestations-diagnosis-and-treatment?sectionName=SCREENING&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H57693652&source=see_link#H57693652).)

●**Vitamin D deficiency** – There are few data regarding screening for vitamin D deficiency in adults, but most experts agree that it is not necessary to perform broad-based screening of serum 25(OH)D levels in the general population. We do, however, screen those at high risk of vitamin D deficiency (eg, limited or no sunlight exposure, individuals with obesity, osteoporosis, malabsorption). Screening for vitamin D deficiency and vitamin D replacement therapy in older adults are reviewed in detail elsewhere. (See ["Vitamin D deficiency in adults: Definition, clinical manifestations, and treatment", section on 'Candidates for 25(OH)D measurements'](https://www.uptodate.com/contents/vitamin-d-deficiency-in-adults-definition-clinical-manifestations-and-treatment?sectionName=Candidates+for+25%28OH%29D+measurements&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H1006946638&source=see_link#H1006946638) and ["Geriatric health maintenance", section on 'Vitamin D'](https://www.uptodate.com/contents/geriatric-health-maintenance?sectionName=Vitamin+D&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H2634929&source=see_link#H2634929).)

**IMMUNIZATION**The Centers for Disease Control and Prevention (CDC) makes annual recommendations for immunizations in adults ([figure 1](https://www.uptodate.com/contents/image?imageKey=ID%2F82634&topicKey=PC%2F97819&search=preventive+care+in+adults+recommendations&rank=1%7E150&source=see_link) and [figure 2](https://www.uptodate.com/contents/image?imageKey=ID%2F62130&topicKey=PC%2F97819&search=preventive+care+in+adults+recommendations&rank=1%7E150&source=see_link)). (See ["Standard immunizations for nonpregnant adults"](https://www.uptodate.com/contents/standard-immunizations-for-nonpregnant-adults?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●**Influenza vaccine** – We recommend annual influenza vaccination for all adults. (See ["Seasonal influenza vaccination in adults"](https://www.uptodate.com/contents/seasonal-influenza-vaccination-in-adults?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●**Tetanus, diphtheria, and acellular pertussis vaccination (Td/Tdap)** – The CDC recommends a single dose of Tdap in place of Td for all adults aged 19 years and older who have not received Tdap previously [[39](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/39)]. Thereafter, all adults should receive a booster every 10 years with either TdaP or Td and should receive a TdaP with each pregnancy. (See ["Tetanus-diphtheria toxoid vaccination in adults"](https://www.uptodate.com/contents/tetanus-diphtheria-toxoid-vaccination-in-adults?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Immunizations during pregnancy"](https://www.uptodate.com/contents/immunizations-during-pregnancy?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●[Varicella vaccine](https://www.uptodate.com/contents/varicella-virus-vaccine-var-drug-information?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) – We recommend routine varicella vaccination for healthy persons >13 years of age without evidence of immunity. (See ["Vaccination for the prevention of chickenpox (primary varicella infection)", section on 'Adolescents and adults'](https://www.uptodate.com/contents/vaccination-for-the-prevention-of-chickenpox-primary-varicella-infection?sectionName=Adolescents+and+adults&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H21209874&source=see_link#H21209874).)

●**Human papillomavirus vaccines** – We recommend routine vaccination with the human papillomavirus vaccine (HPV) for all individuals through age 26 years. (See ["Human papillomavirus vaccination"](https://www.uptodate.com/contents/human-papillomavirus-vaccination?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●**Zoster vaccine** – We suggest zoster vaccination in most individuals who are 50 years of age or older. (See ["Vaccination for the prevention of shingles (herpes zoster)"](https://www.uptodate.com/contents/vaccination-for-the-prevention-of-shingles-herpes-zoster?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●**Pneumococcal vaccines** – We recommend pneumococcal vaccination for all adults 19 to 64 years who have a condition that increases the risk of pneumococcal disease ([table 3](https://www.uptodate.com/contents/image?imageKey=ID%2F86782&topicKey=PC%2F97819&search=preventive+care+in+adults+recommendations&rank=1%7E150&source=see_link)). It is also recommended for all adults ≥65 years. (See ["Pneumococcal vaccination in adults"](https://www.uptodate.com/contents/pneumococcal-vaccination-in-adults?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●**Meningococcal vaccines** – Meningococcal vaccination is recommended in the United States based on age and/or risk factor ([table 4](https://www.uptodate.com/contents/image?imageKey=ID%2F71265&topicKey=PC%2F97819&search=preventive+care+in+adults+recommendations&rank=1%7E150&source=see_link)). (See ["Meningococcal vaccines"](https://www.uptodate.com/contents/meningococcal-vaccines?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●**Hepatitis B vaccination** – Patients at high risk for hepatitis B virus (HBV) ([table 5](https://www.uptodate.com/contents/image?imageKey=PEDS%2F116656&topicKey=PC%2F97819&search=preventive+care+in+adults+recommendations&rank=1%7E150&source=see_link)) should be vaccinated, including diabetic adults <60 years. For diabetic patients ≥60 years, vaccination may be warranted based on likelihood of acquiring hepatitis B and immune response. (See ["Hepatitis B virus immunization in adults", section on 'Vaccine administration'](https://www.uptodate.com/contents/hepatitis-b-virus-immunization-in-adults?sectionName=VACCINE+ADMINISTRATION&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H2660719170&source=see_link#H2660719170).)

Additional immunizations may be necessary for patients in particular risk groups (eg, health care workers, asplenia, adults with cancer), and there are considerations for appropriate vaccinations during pregnancy. Please see appropriate topics for details. (See ["Immunizations for health care providers"](https://www.uptodate.com/contents/immunizations-for-health-care-providers?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Immunizations in adults with cancer"](https://www.uptodate.com/contents/immunizations-in-adults-with-cancer?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Prevention of infection in patients with impaired splenic function", section on 'Vaccinations'](https://www.uptodate.com/contents/prevention-of-infection-in-patients-with-impaired-splenic-function?sectionName=VACCINATIONS&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H3543384193&source=see_link#H3543384193) and ["Immunizations during pregnancy"](https://www.uptodate.com/contents/immunizations-during-pregnancy?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**SEXUALLY TRANSMITTED AND BLOODBORNE INFECTIONS**Prevention and screening for sexually transmitted infections in asymptomatic patients and pregnant women are discussed in detail elsewhere. (See ["Prevention of sexually transmitted infections"](https://www.uptodate.com/contents/prevention-of-sexually-transmitted-infections?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Screening for sexually transmitted infections"](https://www.uptodate.com/contents/screening-for-sexually-transmitted-infections?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Prenatal care: Initial assessment", section on 'Infection'](https://www.uptodate.com/contents/prenatal-care-initial-assessment?sectionName=Infection&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H13&source=see_link#H13).)

●**Chlamydia** – We suggest chlamydia screening for all sexually active women <25 years and sexually active women ≥25 years with risk factors (eg, a history of prior chlamydial or other sexually transmitted infection, new or multiple sex partners, sex partner with concurrent partners, sex partner with a sexually transmitted infection, or exchanging sex for drugs or money). (See ["Screening for sexually transmitted infections", section on 'Females'](https://www.uptodate.com/contents/screening-for-sexually-transmitted-infections?sectionName=Females&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H88324495&source=see_link#H88324495).)

We also suggest screening men in high-risk populations (men attending clinics for sexually transmitted infections, men who have sex with men or men in correctional facilities). (See ["Screening for sexually transmitted infections", section on 'Males'](https://www.uptodate.com/contents/screening-for-sexually-transmitted-infections?sectionName=Males&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H88324501&source=see_link#H88324501).)

●**Gonorrhea** – Routine screening should be offered to sexually active patients at high risk of infection including (see ["Clinical manifestations and diagnosis of Neisseria gonorrhoeae infection in adults and adolescents", section on 'Asymptomatic patients'](https://www.uptodate.com/contents/clinical-manifestations-and-diagnosis-of-neisseria-gonorrhoeae-infection-in-adults-and-adolescents?sectionName=Asymptomatic+patients&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H167171555&source=see_link#H167171555)):

•HIV-infected men and women

•Sexually active women <25 years old

•Individuals with new or many sexual partners

•Men who have sex with men

•Sexually active individuals living in areas of high *Neisseria gonorrhoeae*prevalence

•Individuals with a history of other sexually transmitted infection(s)

•Women ≤35 years old and men ≤30 years old entering correctional facilities, at intake

●**Hepatitis B** – We recommend screening high-risk persons for hepatitis B virus ([table 6](https://www.uptodate.com/contents/image?imageKey=GAST%2F55052&topicKey=PC%2F97819&search=preventive+care+in+adults+recommendations&rank=1%7E150&source=see_link)). (See ["Hepatitis B virus: Screening and diagnosis", section on 'Who should be tested'](https://www.uptodate.com/contents/hepatitis-b-virus-screening-and-diagnosis?sectionName=WHO+SHOULD+BE+TESTED&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H1136182310&source=see_link#H1136182310).)

●**Hepatitis C** – We recommend a one-time screening for all United States adults ages between 18 to 79 years. Rescreening is appropriate for those with risk factors that may result in continued exposure to hepatitis C; this is reviewed elsewhere. (See ["Screening and diagnosis of chronic hepatitis C virus infection"](https://www.uptodate.com/contents/screening-and-diagnosis-of-chronic-hepatitis-c-virus-infection?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Screening and diagnosis of chronic hepatitis C virus infection", section on 'Repeat screening for those with ongoing risk'](https://www.uptodate.com/contents/screening-and-diagnosis-of-chronic-hepatitis-c-virus-infection?sectionName=Repeat+screening+for+those+with+ongoing+risk&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H589430673&source=see_link#H589430673).)

●**HIV infection** – We recommend screening adults for HIV infection until age 75. (See ["Screening and diagnostic testing for HIV infection"](https://www.uptodate.com/contents/screening-and-diagnostic-testing-for-hiv-infection?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●**Syphilis** – We recommend screening for syphilis in patients considered high risk. These include men who have sex with men, inmates, persons with multiple sexual partners, patients with another sexually transmitted disease, and sexually active HIV-infected patients. (See ["Syphilis: Screening and diagnostic testing", section on 'Whom to test'](https://www.uptodate.com/contents/syphilis-screening-and-diagnostic-testing?sectionName=WHOM+TO+TEST&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H2&source=see_link#H2).)

Additional screening may be necessary for patients in particular risk groups (eg, commercial sex workers, persons in correctional facilities, persons diagnosed with another sexually transmitted infection). (See ["Screening for sexually transmitted infections"](https://www.uptodate.com/contents/screening-for-sexually-transmitted-infections?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**PSYCHOSOCIAL HEALTH CONCERNS**

**Depression** — We suggest screening adults for depression when personnel or systems are in place to ensure appropriate follow-up and management of patients who screen positive. There is limited evidence to guide the optimal frequency of screening for depression. To facilitate ease of implementation, we support screening at the time of a routine health visit. (See ["Screening for depression in adults", section on 'Screening implementation'](https://www.uptodate.com/contents/screening-for-depression-in-adults?sectionName=SCREENING+IMPLEMENTATION&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H22016492&source=see_link#H22016492).)

For practices choosing to screen, the two-item Patient Health Questionnaire (PHQ), either as a verbal or written screen, is easily administered with reasonable performance characteristics ([table 7](https://www.uptodate.com/contents/image?imageKey=PC%2F89663&topicKey=PC%2F97819&search=preventive+care+in+adults+recommendations&rank=1%7E150&source=see_link)). A positive screen should be followed by a clinical interview, facilitated with the PHQ-9 ([table 8](https://www.uptodate.com/contents/image?imageKey=PSYCH%2F59307&topicKey=PC%2F97819&search=preventive+care+in+adults+recommendations&rank=1%7E150&source=see_link)) or a similar instrument, to diagnose depression. (See ["Screening for depression in adults", section on 'Screening instruments'](https://www.uptodate.com/contents/screening-for-depression-in-adults?sectionName=Screening+instruments&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H22016485&source=see_link#H22016485).)

**Anxiety** — A 2020 guideline from the Women's Preventive Services Initiative (WPSI) recommends screening for anxiety in women and adolescent girls aged 13 years or older using any of a number of available instruments [[40](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/40)]. However, the evidence to support universal screening in this population is limited by the lack of studies directly evaluating the effectiveness, harms, and costs of such screening. (See ["Generalized anxiety disorder in adults: Epidemiology, pathogenesis, clinical manifestations, course, assessment, and diagnosis"](https://www.uptodate.com/contents/generalized-anxiety-disorder-in-adults-epidemiology-pathogenesis-clinical-manifestations-course-assessment-and-diagnosis?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**Substance-related problems**

●**Alcohol** – We recommend that all adult primary care patients be screened for unhealthy alcohol use. In general, annual screening is suggested. We suggest the single-item alcohol screening question for most primary care practices. Single-item screen starts with the question, "Do you sometimes drink beer, wine, or other alcoholic beverages?" If yes, then the clinician can follow up with, "How many times in the past year have you had five (four for women) or more drinks in a day?"

The AUDIT-C ([table 9](https://www.uptodate.com/contents/image?imageKey=PC%2F53246&topicKey=PC%2F97819&search=preventive+care+in+adults+recommendations&rank=1%7E150&source=see_link)) is an alternative for offices with more resources (eg, staff, time, and ability to automate administration and scoring). (See ["Screening for unhealthy use of alcohol and other drugs in primary care"](https://www.uptodate.com/contents/screening-for-unhealthy-use-of-alcohol-and-other-drugs-in-primary-care?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●**Other drug use** – We also suggest screening patients for unhealthy use of drugs, including illegal drugs and prescription medications that are not used for medical purposes [[41](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults/abstract/41)]. (See ["Screening for unhealthy use of alcohol and other drugs in primary care", section on 'Unhealthy use of other drugs'](https://www.uptodate.com/contents/screening-for-unhealthy-use-of-alcohol-and-other-drugs-in-primary-care?sectionName=Unhealthy+use+of+other+drugs&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H2788961&source=see_link#H2788961).)

●**Tobacco** – Clinicians should ask all patients whether they use tobacco and in what form. Smokers should be advised to quit. (See ["Overview of smoking cessation management in adults"](https://www.uptodate.com/contents/overview-of-smoking-cessation-management-in-adults?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**Intimate partner violence** — Given the high prevalence of intimate partner violence, and the lack of harm and potential benefits of screening, we suggest routine screening for all patients on all visits to primary care clinicians, to obstetrician-gynecologists, to the emergency department, and on hospital admission. (See ["Intimate partner violence: Diagnosis and screening"](https://www.uptodate.com/contents/intimate-partner-violence-diagnosis-and-screening?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**OSTEOPOROSIS**We suggest osteoporosis screening in the following groups (see ["Screening for osteoporosis"](https://www.uptodate.com/contents/screening-for-osteoporosis?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Osteoporotic fracture risk assessment"](https://www.uptodate.com/contents/osteoporotic-fracture-risk-assessment?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link)):

●Postmenopausal women <65 years with risk factors for osteoporosis ([table 10](https://www.uptodate.com/contents/image?imageKey=ENDO%2F76445&topicKey=PC%2F97819&search=preventive+care+in+adults+recommendations&rank=1%7E150&source=see_link)).

●Men with clinical manifestation of low bone mass, history of low trauma fracture, risk factors for fracture (such as androgen deprivation therapy for prostate cancer, hypogonadism, primary hyperparathyroidism, or intestinal disorders).

●All women ≥65 years. (See ["Geriatric health maintenance", section on 'Osteoporosis'](https://www.uptodate.com/contents/geriatric-health-maintenance?sectionName=Osteoporosis&search=preventive+care+in+adults+recommendations&topicRef=97819&anchor=H19&source=see_link#H19).)

There are several modalities to evaluate bone density. Dual-energy x-ray absorptiometry (DXA) is most commonly used. (See ["Overview of dual-energy x-ray absorptiometry"](https://www.uptodate.com/contents/overview-of-dual-energy-x-ray-absorptiometry?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**VASCULAR DISEASE**

●**Abdominal aortic aneurysm** – Screening for abdominal aortic aneurysm (AAA) is not recommended for adults <65 years. (See ["Screening for abdominal aortic aneurysm"](https://www.uptodate.com/contents/screening-for-abdominal-aortic-aneurysm?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

•We recommend one-time ultrasound screening for AAA in men ages 65 to 75 years who are current or former smokers.

•We also suggest one-time ultrasound screening for AAA in men ages 65 to 75 who have never smoked but who have a first-degree relative who required repair of an AAA or died from a ruptured AAA.

●**Carotid artery stenosis** – We do not recommend screening (either by auscultation for carotid bruit or by carotid ultrasound) asymptomatic patients for carotic artery stenosis. (See ["Screening for asymptomatic carotid artery stenosis"](https://www.uptodate.com/contents/screening-for-asymptomatic-carotid-artery-stenosis?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

●**Peripheral artery disease** – We do not suggest screening for peripheral artery disease. (See ["Screening for lower extremity peripheral artery disease"](https://www.uptodate.com/contents/screening-for-lower-extremity-peripheral-artery-disease?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link).)

**INFORMATION FOR PATIENTS**UpToDate offers two types of patient education materials, "The Basics" and "Beyond the Basics." The Basics patient education pieces are written in plain language, at the 5th to 6th grade reading level, and they answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials. Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are written at the 10th to 12th grade reading level and are best for patients who want in-depth information and are comfortable with some medical jargon.

Here are the patient education articles that are relevant to this topic. We encourage you to print or e-mail these topics to your patients. (You can also locate patient education articles on a variety of subjects by searching on "patient info" and the keyword(s) of interest.)

●Basics topics (see ["Patient education: Breast cancer screening (The Basics)"](https://www.uptodate.com/contents/breast-cancer-screening-the-basics?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link) and ["Patient education: Lung cancer screening (The Basics)"](https://www.uptodate.com/contents/lung-cancer-screening-the-basics?search=preventive+care+in+adults+recommendations&topicRef=97819&source=see_link))

**SUMMARY AND RECOMMENDATIONS**

●Appropriate screening and prevention interventions need to be prioritized both for effectiveness in modifying target outcomes and for risk of the condition in the individual patient. (See ['Prioritizing preventive services'](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults?search=preventive%20care%20in%20adults%20recommendations&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H186697164) above.)

●We suggest periodic health maintenance visits every three years for adult patients ≤49 years without chronic conditions, and annually for adults ≥50 years. Preventive counseling and services are an important component of the periodic health check-up. (See ['Periodic "check-up"'](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults?search=preventive%20care%20in%20adults%20recommendations&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H186697688) above.)

●Patients may not receive appropriate screening and prevention interventions if the time for addressing these needs is limited to a "routine physical examination." Creative solutions for delivering preventive care include involving use of patient databases and mechanisms for patient outreach, as well as incorporating preventive care into patient sick visits. (See ['Supportive office systems'](https://www.uptodate.com/contents/overview-of-preventive-care-in-adults?search=preventive%20care%20in%20adults%20recommendations&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H18348575) above.)

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