

Aspirin Use to Prevent Cardiovascular Disease

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Importance

- Leading cause of mortality in US
- Each year 605000 first MI
- 610000 first stroke

USPSTF Assessment of Magnitude of Net Benefit

- in adults aged 40 to 59 years who have a 10% or greater 10-year CVD risk has a **small net benefit**
- primary prevention of CVD events in adults 60 years or older has **no net benefit**.

<p>What does the USPSTF recommend?</p>	<p>For adults aged 40 to 59 years with an estimated 10% or greater 10-year cardiovascular disease (CVD) risk: The decision to initiate low-dose aspirin use for the primary prevention of CVD in this group should be an individual one. Grade: C</p> <p>For adults 60 years or older: Do not initiate aspirin for the primary prevention of CVD. Grade: D</p>
<p>To whom does this recommendation apply?</p>	<p>This recommendation applies to adults 40 years or older without signs or symptoms of CVD or known CVD and who are not at increased risk for bleeding (eg, no history of gastrointestinal ulcers, recent bleeding, or other medical conditions, or taking medications that increase bleeding risk).</p>
<p>What's new?</p>	<ul style="list-style-type: none"> • The USPSTF has changed the age ranges and grades of its recommendation on aspirin use. • The USPSTF currently recommends considering initiating aspirin in persons with an estimated 10% or greater CVD risk at a younger age: 40 years instead of 50 years. • Aspirin should be initiated selectively based on individual decision-making rather than routinely for all persons in the recommended age and CVD risk group. • There is a new recommendation not to initiate aspirin in adults 60 years or older for primary prevention. • The evidence is unclear whether aspirin use reduces the risk of colorectal cancer incidence or mortality.
<p>How to implement this recommendation?</p>	<ul style="list-style-type: none"> • Consider the patient's age. • For adults aged 40 to 59 years: Estimate CVD risk using a CVD risk estimator. • In patients whose estimated CVD risk is 10% or greater, use shared decision-making, taking into account potential benefits and harms of aspirin use, as well as patients' values and preferences, to inform the decision about initiating aspirin. • For patients initiating aspirin use, it would be reasonable to use a dose of 81 mg/d. • For adults 60 years or older: Do not initiate aspirin for primary prevention of CVD.
<p>What additional information should clinicians know about this recommendation?</p>	<ul style="list-style-type: none"> • Age is one of the strongest risk factors for CVD. • Males have a higher prevalence of CVD than females. Among both sexes, Black persons have the highest prevalence of CVD. • Aspirin reduces the risk of cardiovascular events, but it increases the risk for gastrointestinal bleeding, intracranial bleeding, and hemorrhagic stroke. • Both CVD risk and risk for gastrointestinal bleeding, intracranial hemorrhage, and hemorrhagic stroke (with or without aspirin use) increase with age. • For patients who are eligible and choose to start taking aspirin, the benefits become smaller with advancing age, and data suggest that clinicians and patients should consider stopping aspirin use around age 75 years.
<p>Why is this recommendation and topic important?</p>	<p>CVD is the leading cause of mortality in the US, accounting for more than 1 in 4 deaths. Each year, an estimated 605 000 Americans have a first heart attack and about 610 000 experience a first stroke.</p>
<p>What are additional tools and resources?</p>	<ul style="list-style-type: none"> • The Million Hearts initiative provides information on improving cardiovascular health and preventing heart attack and stroke at https://millionhearts.hhs.gov/ • The Centers for Disease Control and Prevention have resources related to risk of heart disease and the prevention of heart disease for patients and health professionals at https://www.cdc.gov/heartdisease/index.htm • The National Heart, Lung, and Blood Institute has patient resources related to coronary heart disease at https://www.nhlbi.nih.gov/health-topics/coronary-heart-disease
<p>Where to read the full recommendation statement?</p>	<p>Visit the USPSTF website (https://www.uspreventiveservicestaskforce.org/uspstf/) or the JAMA website (https://jamanetwork.com/collections/44068/united-states-preventive-services-task-force) to read the full recommendation statement. This includes more details on the rationale of the recommendation, including benefits and harms; supporting evidence; and recommendations of others.</p>

The USPSTF recognizes that clinical decisions involve more considerations than evidence alone. Clinicians should understand the evidence but individualize decision-making to the specific patient or situation.

Practice Considerations

- adults 40 years or older without signs or symptoms of CVD or known CVD (including history of myocardial infarction or stroke) who are not at increased risk for bleeding (eg, no history of gastrointestinal ulcers, recent bleeding, other medical conditions, or use of medications that increase bleeding risk)

Assessment of Risk

- CVD Risk
- Older age is one of the strongest risk factors for CVD
- Men have a higher overall CVD disease burden
- women experience higher mortality from certain cardiovascular events, such as stroke
- Men tend to experience CVD events earlier

ACC/AHA risk estimator

- age, cholesterol levels, systolic blood pressure level, antihypertension treatment, presence of diabetes, and smoking status, and focuses on hard clinical outcomes (myocardial infarction and death from coronary heart disease; ischemic stroke and stroke-related death)
- show higher risk for Black persons than White persons
- overprediction in broad populations (men and women across racial and ethnic groups)
- underprediction in disadvantaged communities

Bleeding Risk

- risk for gastrointestinal bleeding, intracranial hemorrhage, and hemorrhagic stroke, with or without aspirin use, increases with older age
- Other risk factors include male sex, diabetes, history of gastrointestinal issues (such as peptic ulcer disease), liver disease, smoking, and elevated blood pressure
- nonsteroidal anti-inflammatory drugs, steroids, and anticoagulants, increase the risk of bleeding
- risk factors should be considered in the overall decision about whether to start or continue aspirin therapy

Treatment or Intervention

- benefits of aspirin for CVD prevention similar for a low dose (≤ 100 mg/d) and for all doses that have been studied in CVD prevention trials (50 to 500 mg/d)
- pragmatic approach would be to use 81 mg/d

Implementation

- CVD risk estimation is imprecise and imperfect at the individual level
- risk estimates as a starting point
- Greater benefit for individuals at higher risk for CVD events (eg, those with >15% or >20% 10-year CVD risk)
- shared decision-making

Stopping Age

- Annual bleeding events in individuals without risk factors for increased bleeding (eg, history of gastrointestinal bleeding risk, history of peptic ulcer disease, or use of nonsteroidal anti-inflammatory drugs or corticosteroids) are rare
- risk for bleeding increases modestly with advancing age
- initiated aspirin use, the net benefits continue to accrue over time in the absence of a bleeding event

Stopping Age- continue

- net benefits generally become progressively smaller with advancing age because of an increased risk for bleeding
- reasonable to consider stopping aspirin use around age 75 years

Table. Summary of USPSTF Rationale

Rationale	Assessment
Benefits of aspirin use	Adequate evidence that low-dose aspirin has a small benefit to reduce risk for cardiovascular events (nonfatal myocardial infarction and stroke) in adults 40 years or older who have no history of CVD but are at increased CVD risk. Evidence shows that the absolute magnitude of benefit increases with increasing 10-year CVD risk and that the magnitude of the lifetime benefits is greater when aspirin is initiated at a younger age.
Harms of aspirin use	Adequate evidence that aspirin use in adults increases the risk for gastrointestinal bleeding, intracranial bleeding, and hemorrhagic stroke. The USPSTF determined that the magnitude of the harms is small overall but increases in older age groups, particularly in adults older than 60 years.
USPSTF assessment	The USPSTF concludes with moderate certainty that aspirin use for the primary prevention of CVD events in adults aged 40 to 59 years who have a 10% or greater 10-year CVD risk has a small net benefit. The USPSTF concludes with moderate certainty that initiating aspirin use for the primary prevention of CVD events in adults 60 years or older has no net benefit.

Abbreviations: CVD, cardiovascular disease; USPSTF, US Preventive Services Task Force.