

# ASPIRIN AND PRIMARY PREVENTION: BENEFITS & HARMS

Aspirin is useful – and sometimes critical – to treat and prevent disease. Aspirin can save lives, preventing heart attacks and strokes, and even reduce the incidence of cancer.

For some patients, however, aspirin may do more harm than good. Talk to your patients about whether or not they should take aspirin.

**The U.S. Preventive Services Task Force (USPSTF) recommends prescribing aspirin for prevention if benefits outweigh harms.<sup>1</sup>**

Do not prescribe aspirin for patients at low risk for cardiovascular disease events or high risk for side effects.

## Aspirin's pros & cons

*Only prescribe aspirin when the benefits outweigh the harms*

### Benefits<sup>1-5</sup>

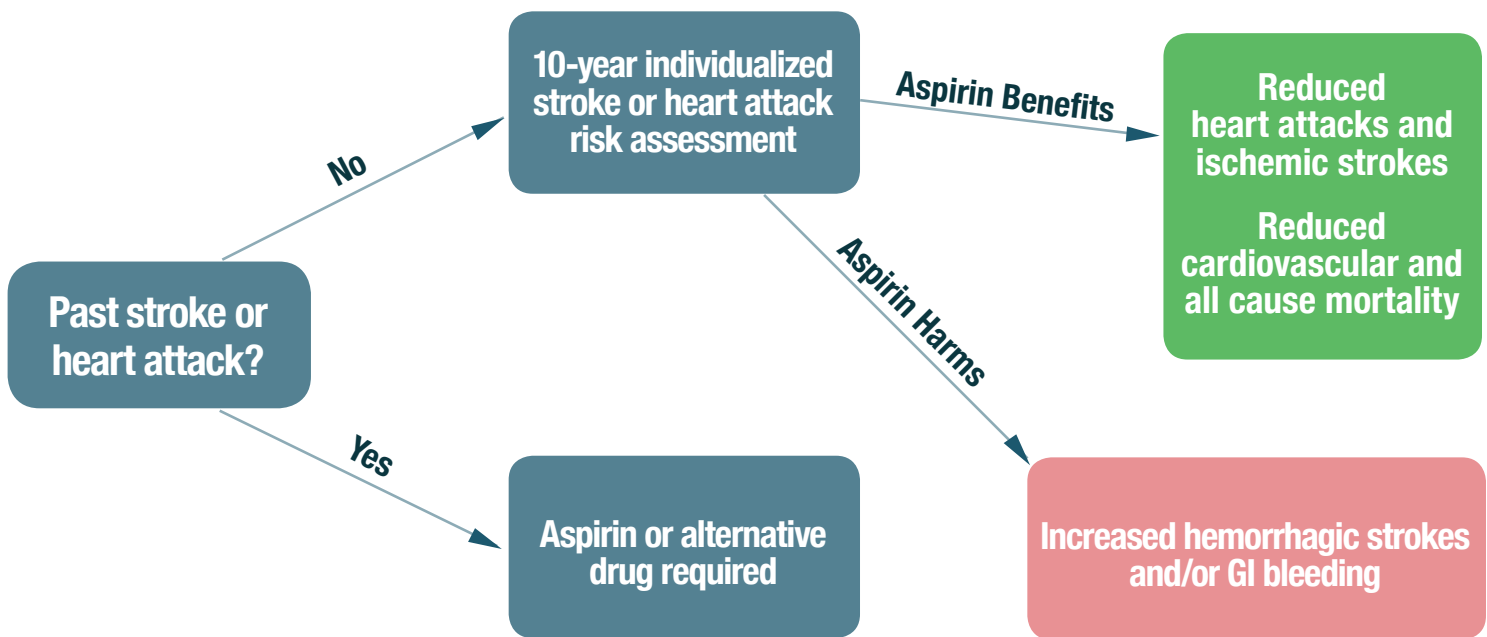
- Aspirin prevents first heart attacks in men 45 years and older in those at the highest risk.
- Aspirin prevents first strokes in women 55 years and older in those at the highest risk.
- Aspirin reduces the risk of colon, rectal and other cancers.

### Harms<sup>1,6-9</sup>

- Aspirin increases risk of GI bleeding in men and women.
- Aspirin increases hemorrhagic strokes in men.

## Aspirin for prevention: decision-making steps

Assess heart attack and stroke risk and then determine balance of aspirin benefits and harms.



# ASPIRIN AND PRIMARY PREVENTION: BENEFITS & HARMS

## Aspirin prevents cardiovascular disease<sup>2</sup>

Results of study analyzing 95,456 individuals followed over 6.4 years<sup>1,2\*</sup>

- Significant efficacy differences by gender
  - Aspirin prevented first heart attacks in men 45 years and older.
  - Aspirin prevented first strokes in women 55 years and older.
- Some gender differences in aspirin harms
  - 69% increase in risk of hemorrhagic stroke in men
- Likelihood of GI bleeding increased with age in both men and women.

\*A review published in the Journal of the American Medical Association analyzed all aspirin trials in patients who never had a heart attack or stroke. Endpoints included: heart attacks, ischemic strokes, death, GI bleeding and hemorrhagic strokes. Aspirin dose ranged from 100 mg every other day to 500 mg daily

Outcome	Daily low-dose aspirin in men (n=44,114)		Daily low-dose aspirin in women (n=51,342)	
	Net Effect	Events/10,000	Net Effect	Events/10,000
All CVD Events	14% decrease	-67	12% decrease	-31
Myocardial Infarction	32% decrease	-87	No Effect	
All Strokes	No Effect		17% decrease	-33
Ischemic Stroke	No Effect		24% decrease	-26
Hemorrhagic Stroke	69% increase	11	No Effect	
Major Bleeding	72% increase	34	68% increase	30

A negative number indicates a reduction in expected events; a positive number indicates an increase in expected events.

■ = significant benefit ■ = significant harm

## Aspirin increases risk of GI bleeding<sup>1,6-9</sup>

- Likelihood of GI bleeding increases with age in both men and women.
- Likelihood of GI bleeding increases in patients on anticoagulants, NSAIDs or those with history of GI ulcers.
- Age and gender-related increases in bleeding (in table to the right) are incorporated into current USPSTF guidelines.

Risk of serious upper GI complications over 10 years		
Age	Men	Women
<60 years	8/1,000	4/1,000
60-69 years	24/1,000	12/1,000
70-79 years	36/1,000	18/1,000

# ASPIRIN AND PRIMARY PREVENTION: BENEFITS & HARMS

## What's new: aspirin benefits beyond cardiovascular disease prevention

Aspirin recommendations should not be based solely on cardiovascular disease prevention. Although guidelines do not yet factor in cancer benefits, your discussions with patients about aspirin should include benefits in cancer prevention.

### Aspirin prevents cancer<sup>3-5</sup>

- Evidence strongly suggests aspirin prevents colorectal cancer, lymphoma and other cancer-related deaths, especially when aspirin is taken for 5 or more years.
- Benefits are independent of age, sex and smoking status.
  - Pooled analysis of 20,000 patients showed 24% reduction in the 20-year risk of colorectal cancer.
- Studies show a trend toward a reduced risk of female cancers (e.g., ovarian, cervical and breast cancers).
- Researchers speculate that aspirin inhibits cancer growth by inhibiting COX-2, an enzyme involved in inflammation.

### Aspirin may prevent cognitive decline in women<sup>10</sup>

- Older women at higher risk of cardiovascular disease may experience reduced/slower declines in cognitive function by taking daily aspirin.
  - Majority of women had a high risk of cardiovascular disease, based on their risk factors and age.
  - Of the 489 women available at the end of the monitoring period, declines in cognition were lowest in those who took aspirin for 5 years.

## REFERENCES

1. Wolff T, et al. Aspirin for the primary prevention of cardiovascular events. *Ann Intern Med.* 2009; 150:405.
2. Berger JS, et al. Aspirin for the primary prevention of cardiovascular events in women and men. *JAMA.* 2006; 295:306.
3. Rothwell PM, et al. Short-term effects of daily aspirin on cancer incidence, mortality, and non-vascular death. *Lancet.* 2012; 379:1602.
4. Veitonmaki T, et al. Use of aspirin, but not other non-steroidal anti-inflammatory drugs is associated with decreased prostate cancer risk at the population level. *Eur J Cancer.* 2013; 49:938.
5. Chan AT, et al. Aspirin in the chemoprevention of colorectal neoplasia. *Cancer Prev Res (Phila).* 2012; 5:164.
6. De Berardis G, et al. Association of aspirin use with major bleeding in patients with and without diabetes. *JAMA.* 2012; 307:2286.
7. Antithrombotic Trialists' (ATT) Collaboration, Baigent C, et al. Aspirin in the primary and secondary prevention of vascular disease. *Lancet.* 2009; 373:1849.
8. Partnership for Health Clinician Fact Sheets: Using Aspirin for the Primary Prevention of Cardiovascular Disease. September 2012. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.ahrq.gov/research/findings/factsheets/coronary/cardio/index.html>. Accessed November 3, 2013.
9. Hernandez-Diaz S, et al. Cardioprotective aspirin users and their excess risk of upper gastrointestinal complications. *BMC Med.* 2006; 4:22.
10. Kern S, et al. Does low-dose acetylsalicylic acid prevent cognitive decline in women with high cardiovascular risk? *BMJ Open.* 2012;10.1136/bmjopen-2012-001288.