A heavily debated topic

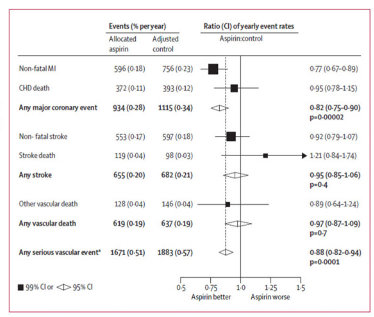
: aspirin for primary prevention of cardiovascular events in patients without prior history of atherosclerotic cardiovascular disease

- The European Association for Cardiovascular Prevention & Rehabilitation (EACPR)[1]: **against its use**
- U.S. Preventive Services Task Force. Aspirin use for the primary prevention of cardiovascular disease and colorectal cancer: U.S. Preventive Services Task Force recommendation statement[2]: **high-risk patients (with high cardiovascular risk)**
- American Heart Association Diabetes Committee of the Council on Lifestyle and Cardiometabolic Health; Council on Clinical Cardiology, Council on Cardiovascular and Stroke Nursing, Council on Cardiovascular Surgery and Anesthesia, Council on Quality of Care and Outcomes Research; American Diabetes Association. Update on prevention of cardiovascular disease in adults with type 2 diabetes mellitus in light of recent evidence: a scientific statement from the American Heart Association and the American Diabetes Association[3]: **high-risk patients (with diabetes)**

1. Eur Heart J 2016;37:2315–2381.
2. Ann Intern Med 2016;164:836–845.
3. Circulation 2015;132:691–718.

Current Practice

- With these conflicting recommendations, aspirin is still widely used among healthy individuals without established atherosclerosis in the hope of preventing myocardial infarction (MI) and death.
- The recommendation for aspirin use in primary prevention was largely based on a pooled analysis of six randomized trials that showed a reduction in ischemic events with aspirin.[1]



1. Lancet 2009;373:1849–1860.

Uncertainty remains

regarding whether there is a favorable balance of benefit to harm for aspirin in the setting of primary prevention

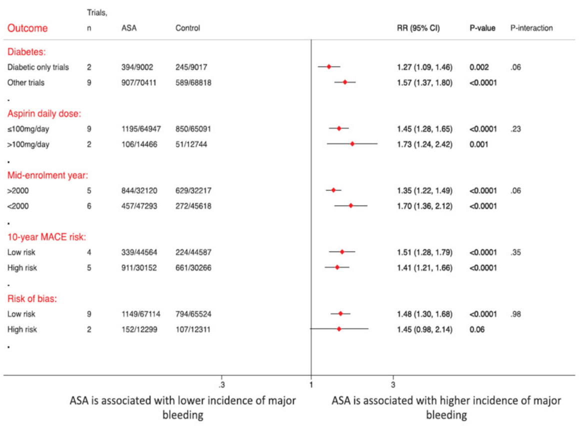
- The benefit of aspirin for patients with history of an acute ischemic event (i.e. MI or ischemic stroke) is better established: secondary prevention.
- In primary prevention, for example, 21.8% reported taking aspirin for primary prevention, with only a slight decline from previous years in the United States.

1. Prev Med Rep 2017;5:183–186.

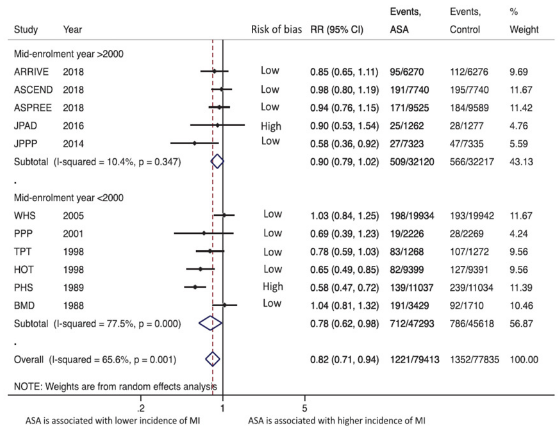
Recent Meta-Analysis Studies

- The first study: aspirin reduced all-cause mortality, MI, and ischemic stroke, with an increased risk of major bleeding.[1]
- The second study: aspirin reduced non-fatal MI, with little or no effect on cardiovascular or all-cause mortality, compared with control in primary prevention.[2]

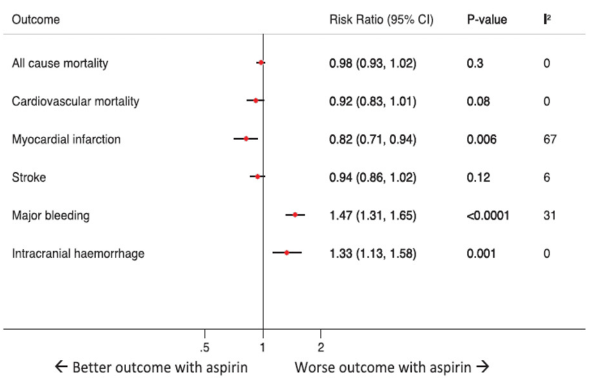
Primary safety (major bleeding) according to various subgroups of interest



MI outcome according to the mid-enrollment year of the included trials



TAKE HOME FIGURE (RR with 95% CI)



Conclusions

- Aspirin use among healthy individuals without known atherosclerosis appears to be associated with increased harm and lack of mortality benefit.
- In this setting, aspirin is possibly associated with a modest reduction in MI risk; however, this comes at a cost of increased major bleeding and including intracranial hemorrhage.
- The routine use of aspirin for primary prevention needs to be reconsidered.

Aspirin Use to Prevent Cardiovascular Disease and Colorectal Cancer: Preventive Medication (April 2016)

Population	Recommendation	Grade (What's This?)
Adults aged 50 to 59 years with a ≥10% 10-year CVD risk	The USPSTF recommends initiating low-dose aspirin use for the primary prevention of cardiovascular disease (CVD) and colorectal cancer (CRC) in adults aged 50 to 59 years who have a 10%	B