

# Should Aspirin Be Used for Primary Prevention?

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Aspirin has been the cornerstone of the treatment in secondary prophylaxis of cardiovascular events (myocardial infarction, stroke, TIA). Whether to use aspirin for primary prophylaxis of CVD has

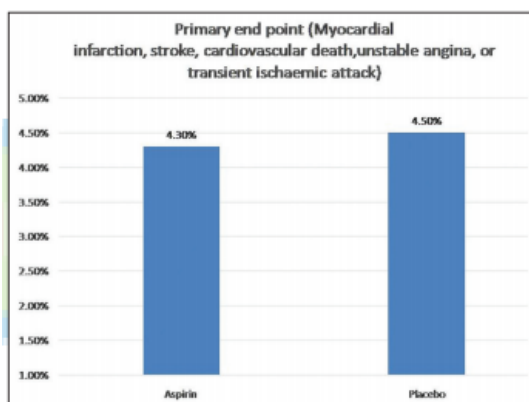
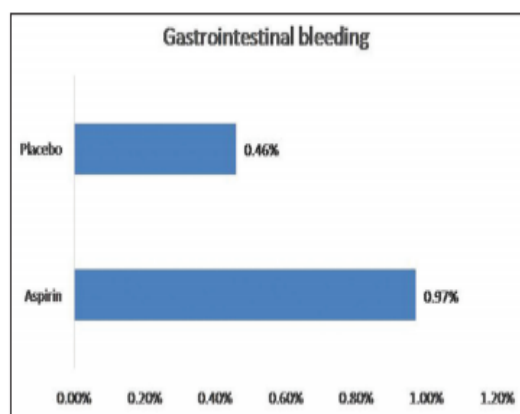
always been a debatable issue.

Three landmark primary prevention trials on aspirin were published in 2018

## 1-Use of Aspirin to Reduce Risk of Initial Vascular Events in Patients at Moderate Risk of Cardiovascular Disease (ARRIVE) (Lancet 2018;392:1036-46.)

This clinical trial randomized over 12,000 patients at moderate

risk of coronary heart disease to either 100 mg of coated aspirin daily or to a placebo



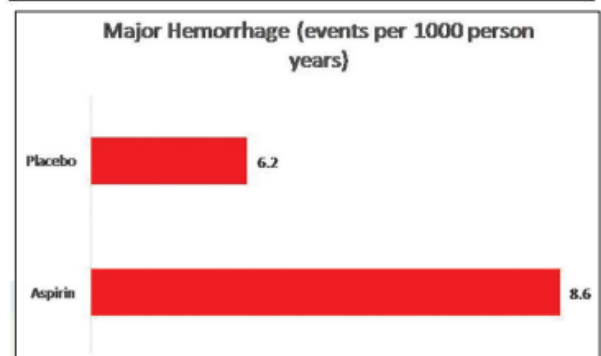
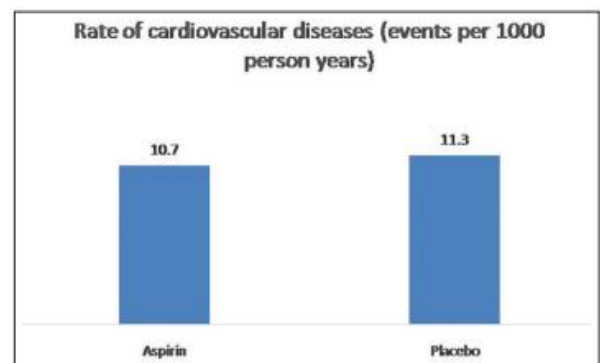
Incidence of primary end point in the ARRIVE trial

## CONCLUSIONS:

Among patients at moderate risk of coronary heart disease, the use of aspirin was not beneficial as a primary prevention strategy. Aspirin was not associated with a reduction in adverse cardiovascular events. Bleeding events were low and were similar between the groups. however, GI bleeding was more in the aspirin group.

## 2-Effect of Aspirin on Cardiovascular Events and Bleeding in the Healthy Elderly (ASPREE) (N Engl J Med 2018;379:1509-18.)

The study included 19,114 community-dwelling people in Australia and the United States who were 70 years of age or older and free at baseline of cardiovascular disease



Cardiovascular events in ASPREE trial  
Major hemorrhage in ASPREE trial.

gastrointestinal bleeding in the ARRIVE trial

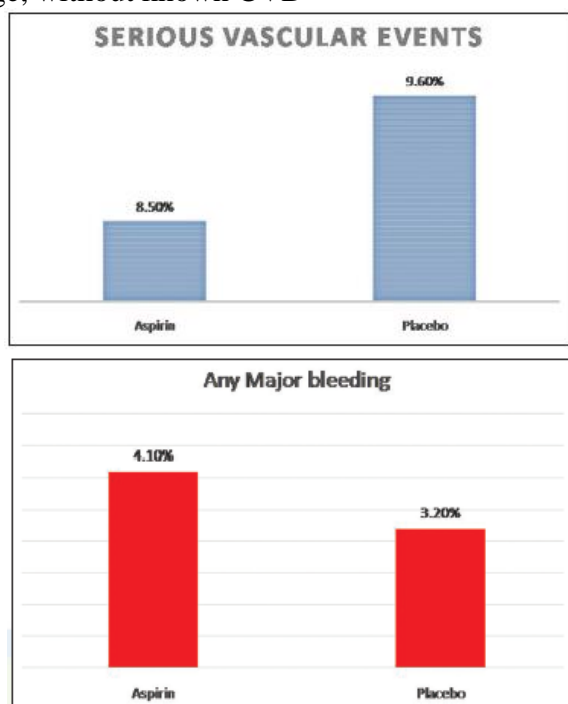
## CONCLUSIONS:

Among healthy elderly patients, low-dose aspirin therapy was not beneficial. Compared with placebo, aspirin did not improve disability-free survival or reduce major adverse cardiovascular events at a median of 4.7 years. However, it was associated with a statistically significant increase in major bleeding, which was attributed to excess intracranial and upper GI bleeding.

### 3-Effects of Aspirin for Primary Prevention in Persons with Diabetes Mellitus (ASCEND)

(N Engl J Med 2018;379:1529-39.)

1500 Diabetic patients (any type),  $\geq 40$  years of age, without known CVD



Serious vascular events in ASCEND trial  
Major hemorrhage in ASCEND trial

## CONCLUSIONS:

Among diabetic patients with no known CVD, aspirin was associated with a 12% relative reduction in major adverse cardiovascular events compared with placebo. However, aspirin was associated with a 29% relative increase in major bleeding events compared with placebo. The increase in bleeding was mainly due to GI hemorrhage. Therefore, the evidence from this trial suggests that beneficial use of aspirin in primary prophylaxis for diabetic patients should be weighed against the significantly increased risk of bleeding.

Based on the ASPREE, ARRIVE, and ASCEND trials, In March 2019, the American College of Cardiology (ACC) and the American Heart Association (AHA) released new guidelines that suggest that most adults without a history of heart disease should not take low-dose daily aspirin to prevent a first heart attack or stroke.

### ACC/AHA Primary Prevention of ASCVD (GUIDELINES 2019)

Low-dose aspirin (75-100 mg po /day) for primary prevention of ASCVD:

Consider use if 40-70 years old with elevated ASCVD risk and no increased risk of bleeding (LOE A, COR IIb)

Avoid use if age  $\geq 70$  years (LOE B-R, COR III/harm)

Avoid use at any age if increased risk of bleeding (LOE C-LD; COR III/harm).