

Medication Best Practices – Aspirin for ASCVD Primary Prevention?

Aspirin has been widely used for decades for a variety of indications. Its benefit for secondary prevention of cardiovascular disease is well established, but its role in primary prevention is less clear. Older trials suggest that the benefit of using aspirin for primary prevention of cardiovascular disease (CVD) outweighs the risk of bleeding when the estimated 10-year ASCVD risk is >10%.¹ The most recent USPSTF recommendations from 2016² are being updated to include the latest evidence from three high quality studies published in 2018 – ARRIVE, ASPREE, and ASCEND.

- **ARRIVE** trial studied patients with moderate CV risk³
- **ASPREE** trial studied elderly patients (mean age 74) without CVD, dementia or disability⁴
- **ASCEND** trial studied patients with diabetes mellitus. The majority of the study population had a 5-year serious vascular event risk of <10%⁵

Overall conclusion: Aspirin for primary prevention has a lower, overall benefit in patients with low to moderate risk of CVD than what was once thought, and the benefit may be outweighed by the increased risk of bleeding.

Why? We are likely doing a better job at reducing ASCVD risk with statin therapy and by controlling blood pressure.^{1,3-7}

In 2019, ACC/AHA published updated ACSVD primary prevention guidelines with the following recommendations:

- Low-dose aspirin might be considered for primary prevention of ASCVD in select higher ASCVD adults aged 40-70 years who are not at increased bleeding risk.
- Low-dose aspirin should not be administered on a routine basis for primary prevention of ASCVD among adults >70 years.
- Low-dose aspirin should not be administered for primary prevention among adults at any age who are at increased bleeding risk.¹

In patients who are at high risk for ASCVD and unable to achieve optimal control of the modifiable risk factors, the use of low-dose aspirin may be justified.¹ Meta-analyses suggest that there is no additional ASCVD risk reduction with high-dose aspirin (>100mg/day) compared to low-dose (≤100mg/day) aspirin, but there is a higher risk of bleeding with high-dose aspirin.⁸

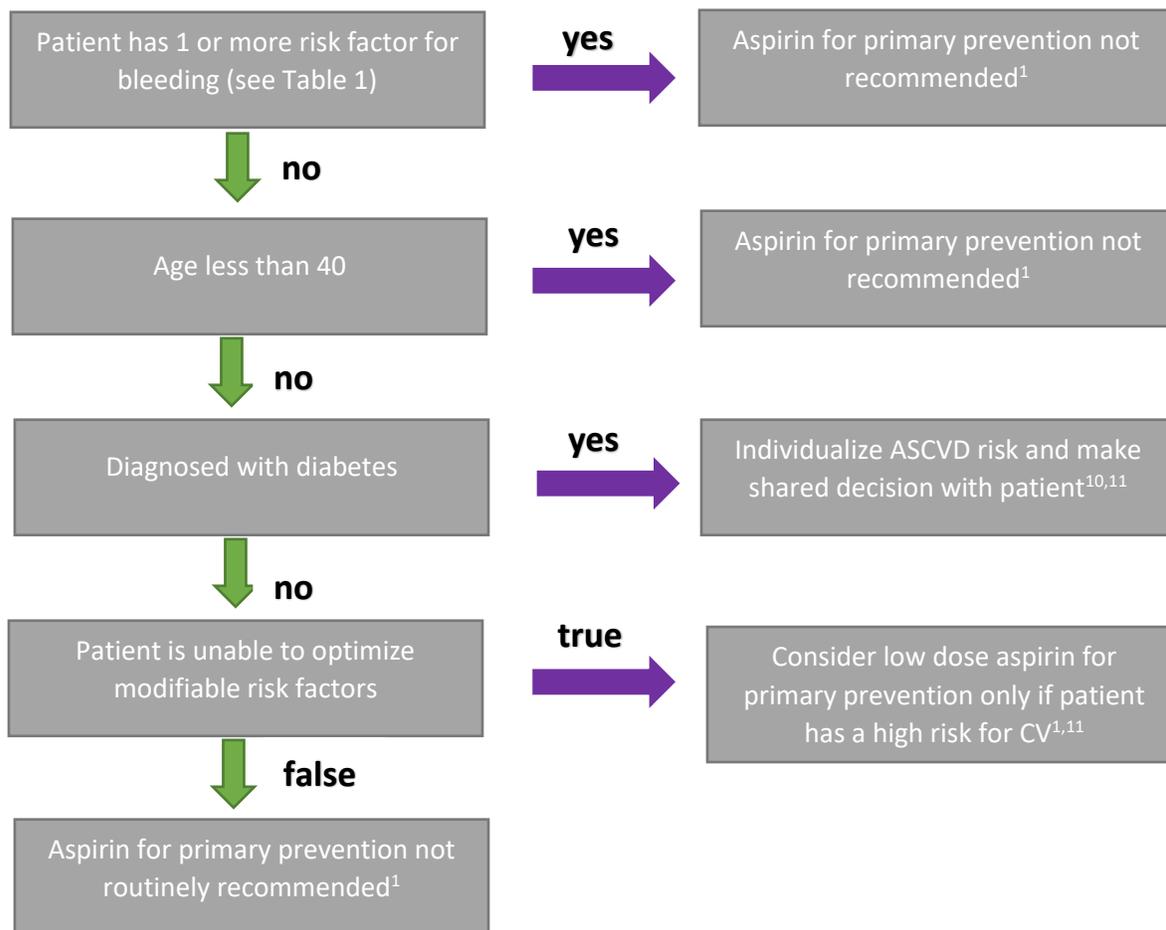
Table 1. Risk factors for bleeding¹

<ul style="list-style-type: none"> • Age >70 • History of GI ulcers • History of PUD • History of bleeding from any site 	<ul style="list-style-type: none"> • Elevated blood pressure • Thrombocytopenia • Coagulopathy • CKD 	Concurrent use of other medications that increase bleeding risk, such as <ul style="list-style-type: none"> • NSAIDs • steroids • direct oral anticoagulants (i.e. apixaban, dabigatran, rivaroxaban) • warfarin • SSRIs and SNRIs
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This is not a comprehensive list.

ALL patients should be encouraged to do the following, as indicated/appropriate:¹

- Adhere to a heart-healthy diet high in fruits, vegetables, whole grains, fish, poultry, legumes and low in trans fats, red meats, sodium and saturated fats
- Smoking cessation
- Engage in 150 min/week of moderate intensity aerobic exercise and moderate to high-intensity muscle-strengthening activity (such as resistance or weights) on at least 2 days per week⁹
- Adhere to statin therapy
- Adhere to antihypertensive therapy



The Bottom Line

- Aspirin should not be used for routine primary prevention of ASCVD because of the lack of net benefit.¹
- Avoid aspirin for primary prevention in patients with an increased risk of bleeding.¹
- Take family history of premature ASCVD, CAC score when available, and inability to achieve lipid, blood pressure or glucose targets *in addition* to 10-year ASCVD risk to determine if a patient is an appropriate candidate for aspirin in the setting of primary prevention.^{1,11}
- If aspirin for primary prevention is deemed appropriate, a low dose ($\leq 100\text{mg/day}$) should be recommended.¹

Questions? Please contact the SoNE HEALTH Pharmacy Team:

www.sonehealthcare.imageworksllc.com/population-health-management/pharmacy-program/



References:

1. Arnett DK, Blumenthal RS, Albert MA, et al. 2019 ACC/AHA Guidelines on the Primary Prevention of Cardiovascular Disease. *J Am Coll Cardiol*. 2019 Mar;74(10):177–232. Available from: <https://www.jacc.org/doi/pdf/10.1016/j.jacc.2019.03.010>
2. USPTF 2016 Recommendations Summary available at: <https://uspreventiveservicestaskforce.org/uspstf/recommendation/aspirin-to-prevent-cardiovascular-disease-and-cancer>
3. The ARRIVE Study Collaborative Group. Use of aspirin to reduce risk of initial vascular events in patients at moderate risk of cardiovascular disease. *Lancet*. 2018 September 22; 392(10152): 1036–1046. doi:10.1016/S0140-6736(18)31924-X.
4. The ASPREE Study Collaborative Group. *N Engl J Med* 2018; 379:1519-1528
DOI: 10.1056/NEJMoa1803955
5. The ASCEND Study Collaborative Group. Effects of aspirin for primary prevention in persons with diabetes mellitus. *N. Engl. J. Med*. 2018 doi: 10.1056/NEJMoa1804988
6. Moriarty F, Ebell MH. A comparison of contemporary versus older studies of aspirin for primary prevention. *Fam Pract*. 2020 Jul 23;37(3):290-296. doi: 10.1093/fampra/cmz080. PMID: 31751455.
7. Abdelaziz HK, Saad M, Naga Ventaka K, et al. Aspirin for Primary Prevention of Cardiovascular Events. *J Am Coll Cardiol*. 2019 Jun;73(23):2915–29.
8. Rothwell PM, Cook NR, Gaziano JM, et al. Effects of aspirin on risks of vascular events and cancer according to bodyweight and dose: analysis of individual patient data from randomised trials. *Lancet*. 2018;392:387–99. Available from: <https://www.sciencedirect.com/science/article/pii/S0140673618311334>
9. American Heart Association (AHA) lifestyle recommendations available from: <https://www.heart.org/en/healthy-living/fitness/fitness-basics/aha-recs-for-physical-activity-in-adults>
10. American Diabetes Association 2020 Standards of Care. Available from: https://care.diabetesjournals.org/content/diacare/43/Supplement_1/S111.full.pdf
11. ACC ASCVD Risk Estimator Tool available from: <http://tools.acc.org/ASCVD-Risk-Estimator-Plus/#!/calculate/estimate/>