JAMA Clinical Guidelines Synopsis

# Management of Atrial Fibrillation

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**GUIDELINE TITLE** 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Atrial Fibrillation

**DEVELOPERS** American College of Cardiology (ACC) and American Heart Association (AHA), in collaboration with American College of Clinical Pharmacy (ACCP) and Heart Rhythm Society (HRS)

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**PRIOR VERSION** 2019 AHA/ACC/HRS Focused Update of the 2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation

**FUNDING SOURCE** ACC/AHA

**TARGET POPULATION** Patients with atrial fibrillation (AF)

**SELECTED RECOMMENDATIONS**

- Patients with AF should be encouraged to participate in moderate to vigorous exercise training to a target of 210 min/wk (recommendation strength 1; level of evidence B), stop smoking tobacco (1-B), minimize or eliminate alcohol consumption (1-B), and reduce weight by 10% (if body mass index is >27) (1-B).
- Direct oral anticoagulants (DOACs) are recommended to lower stroke risk in most patients with AF who have a calculated annual stroke risk of at least 2% (1-A). Individuals with moderate to severe mitral stenosis or mechanical heart valves should receive warfarin instead of DOACs (1-B). Percutaneous left atrial appendage occlusion (LAAO) devices may be considered for patients with elevated stroke risk and contraindication to long-term anticoagulation (2a-B).
- Antiplatelet drugs such as aspirin or P2Y12 inhibitors (eg, clopidogrel, prasugrel, or ticagrelor) are not recommended as alternatives to DOACs or warfarin (recommendation strength 3-B for harm/no benefit).
- For patients with AF and chronic coronary artery disease (≥1 year after revascularization or not requiring revascularization) without history of stent thrombosis, antiplatelet agents can be stopped in favor of DOAC monotherapy (1-B).
- Before patients develop long-standing persistent AF, rhythm control is preferred over rate control alone (2a-B). Catheter ablation is recommended for rhythm control therapy in patients with few comorbidities and symptomatic paroxysmal AF (1-A) and in patients with heart failure with reduced ejection fraction (1-A).

## Summary of the Clinical Problem

Atrial fibrillation has a lifetime prevalence of 15% to 40% and predisposes patients to stroke and cardiac dysfunction.[1] This JAMA Clinical Guidelines Synopsis focuses on recommendations for long-term management of AF, including new paradigms for rhythm control and stroke risk reduction.

## Characteristics of the Guideline Source

The ACC/AHA Task Force on Clinical Practice Guidelines writing committee included members with wide scopes of practice and expertise related to AF.[1] Members were required to disclose all industry relationships and could not participate in sections of this guideline that directly involved medications or products associated with industry relationships (eTable in the Supplement).

Supplemental content

CME at jamacmelookup.com

## Evidence Base

### Modifiable Risk Factors

In a randomized clinical trial (RCT) of 120 patients with AF, those randomized to supervised exercise training were less likely to have AF at 12 months compared with controls (40% vs 20%; $P = .002$) and had lower symptom severity.[1] An RCT of 140 patients with AF who consumed 10 or more standard drinks per week showed increased time to recurrent AF among those randomized to an abstinence strategy vs those who continued their usual alcohol consumption (median, 139 vs 62 days; $P = .005$).[2] In an RCT of patients with AF and body mass index of 27 or higher (calculated as weight in kilograms divided by height in meters squared), a physician-led weight loss program resulted in greater reductions in a composite measure of AF frequency, duration, and severity than general lifestyle advice ($P < .001$).[3]

### Stroke Risk

To reduce stroke risk, DOACs (apixaban, dabigatran, edoxaban, or rivaroxaban) should be prescribed for most individuals with AF who have a 2% or higher annual risk of stroke based on a validated risk assessment (such as $CHA_2DS_2$-VASc, ATRIA, or GARFIELD-AF). Standard-dose DOACs, compared with warfarin, were associated with fewer strokes and systemic emboli (3.0% vs 3.7%; hazard ratio, 0.81; 95% CI, 0.74-0.89) and lower rates of all-cause death (7.8% vs 8.4%; hazard ratio, 0.92; 95% CI, 0.87-0.97) in a network meta-analysis of 4 RCTs (29 362 participants).[4] Percutaneous LAAO devices may be considered for patients with high bleeding risk such as gastrointestinal tract lesions refractory to treatment, spontaneous intracerebral or intraspinal bleeding, or severe bleeding from recurrent falls when the cause of falls is not treatable. In an RCT of 402 patients at high risk of both thromboembolism and gastrointestinal bleeding, those assigned to percutaneous LAAO devices or DOACs had the same 2.6% annual rate of thromboembolic events.[5]

Warfarin is recommended for patients with AF and moderate to severe mitral stenosis or mechanical heart valves. In an RCT of 4565 participants with AF and rheumatic heart disease, those receiving rivaroxaban had a higher yearly risk of stroke, systemic embolism, myocardial infarction, or death due to cardiovascular or unknown causes compared with warfarin (8.2% vs 6.5%; $P < .001$). Two RCTs of DOACs vs warfarin in patients with AF and mechanical valves were stopped early due to increased thromboembolic and bleeding events attributable to DOACs.[1]

Patients with AF who require aspirin in addition to a P2Y12 inhibitor and DOAC after percutaneous coronary interventions (PCI) should stop aspirin after 1 to 4 weeks. In an RCT of 4614 participants with AF and recent acute coronary syndrome or PCI (median time, 6 days [IQR, 3-10 days]), early cessation of aspirin resulted in fewer significant bleeding events (9.0% vs 16.1%; $P < .001$) without a difference in ischemic events.[6] Using a DOAC without antiplatelet therapy is now recommended for patients with AF and coronary artery disease 1 year after revascularization (or in chronic coronary artery disease not requiring coronary revascularization). In an RCT of patients with AF and coronary artery disease who did not require revascularization or were enrolled at least 1 year after PCI or coronary artery bypass graft surgery, rivaroxaban monotherapy was noninferior to rivaroxaban plus a single antiplatelet agent for combined stroke, systemic embolism, myocardial infarction, unstable angina, or death due to any cause (4.1% per patient-year for monotherapy vs 5.8% for combined therapy; $P < .001$ for noninferiority), and monotherapy decreased risk of major bleeding (1.6% vs 2.8% per patient-year; $P = .01$).[7]

### Management of Symptoms and AF Burden

Rhythm control is currently preferred for most patients with AF to reduce cardiovascular morbidity and progression to persistent AF. In an RCT of 2789 patients with AF within 1 year of diagnosis and high risk features (age >75 years, previous transient ischemic attack or stroke, or ≥2 other risk factors), those randomized to early rhythm control with antiarrhythmic drugs or ablation had lower incidence of cardiovascular death, stroke, heart failure, or hospitalization for acute coronary syndrome compared with usual care, which was initially rate control for 96% of patients (3.9 vs 5.0 events per 100 person-years; $P = .005$).[8] For many patients, particularly younger individuals with symptomatic paroxysmal AF, ablation is now recommended as first-line treatment for rhythm control. In an RCT of 303 patients (mean age, 59 [SD, 11] years) with symptomatic paroxysmal AF, those assigned to ablation were less likely to develop persistent AF over 3 years vs antiarrhythmic drug therapy alone (1.9% vs 7.4%; hazard ratio, 0.25; 95% CI, 0.09-0.70).[9] Ablation is also recommended for patients with heart failure and reduced ejection fraction (≤35%). An RCT of 363 patients with heart failure and symptomatic AF reported that those assigned to ablation had fewer deaths and hospitalizations for worsening heart failure compared with medical therapy (28.5% vs 44.6%; $P = .007$).[10]

## Potential Harms

Antiarrhythmic drug therapy is associated with a high rate of adverse drug events (1%-7% yearly rate in recent trials), and ablation carries procedural risk (1.3% vascular complication, 0.8% pericardial effusion or tamponade, 0.2% stroke or transient ischemic attack, 0.06% procedure-related mortality). Up to 50% of patients require repeated ablation procedures for durable rhythm control.[8,9] Percutaneous LAAO devices also have procedural risks (1% rate of procedure- or device-related death and 3.5% rate of combined pericardial effusion, device embolization, or vascular complications).[5]

## Discussion

The 2023 AF guideline emphasizes stroke risk assessment and treatment. For arrhythmia management, the guideline states that rhythm control is the preferred initial strategy, with ablation as the preferred method to slow overall AF progression.[8-10] The guideline also emphasizes lifestyle and risk factor modification to mitigate adverse outcomes from AF. Future work is needed to expand the evidence base to more diverse populations of trial participants with AF, which could encourage broader application of the guidelines to reduce current treatment disparities within and among communities and countries. More clarity is needed on the role of screening in asymptomatic persons with risk factors for AF, including screening at a population level with wearable technology.

## ARTICLE INFORMATION

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