

Resource Guide for Atrial Fibrillation

Introduction:

Atrial fibrillation (AFib) is the most common arrhythmia in clinical practice and is a leading cause of morbidity and mortality. AFib is a major risk factor for thromboembolic disease, and even short episodes of intermittent AFib convey an increased risk for stroke. Patients may not notice symptoms that warrant care-seeking and clinicians may not have an index of suspicion relative to those patients at high risk for AFib. Approximately 20% of patients who have an AFib-related stroke are not diagnosed with AFib until the time of stroke or shortly thereafter. Therefore, screening for AFib in asymptomatic patients is critical to improve the detection of AFib and provide anticoagulation therapy before the onset of symptoms. This resource guide provides risk stratification and AFib screening tools and devices. A number of useful digital health tools are described, including smartphone applications and wearables, that can increase the rate of detection of AFib and potentially improve patient outcomes and reduce healthcare costs. Also provided are patient education tools, including a whiteboard animation describing AFib, its symptoms, risk factors, and treatments, as well as a downloadable list of Questions to Ask Your Healthcare Provider regarding AFib.

Stroke and Bleeding Risk Stratification Tools

CHA₂DS₂-VASc

Risk Factor	Score
C ardiac failure	1
H ypertension	1
A ge \geq 75 years	2
D iabetes	1
S troke	2
V ascular disease (MI, peripheral arterial disease, aortic atherosclerosis)	1
A ge 65-74 years	1
S ex c ategory (female)	1

CHA₂DS₂-VASc calculator <https://www.mdcalc.com/cha2ds2-vasc-score-atrial-fibrillation-stroke-risk>

HAS-BLED

Letter	Clinical Characteristic	Points
H	Hypertension	1
A	Abnormal Liver or Renal Function	1 or 2
S	Stroke	1
B	Bleeding	1
L	Labile INR	1
E	Elderly (age > 65)	1
D	Drugs or Alcohol	1 or 2
Maximum Score		9

HAS-BLED calculator <https://www.mdcalc.com/has-bled-score-major-bleeding-risk>

SMARTPHONE APPS

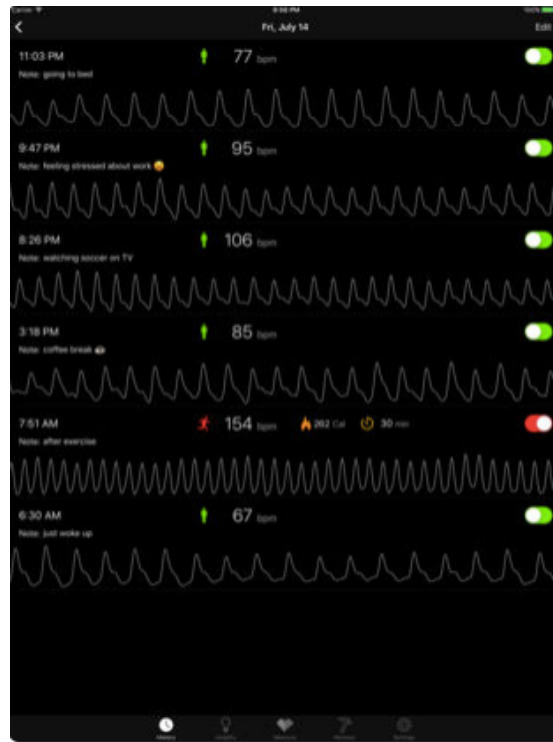
1. Kardia app by AliveCor

- Works with KardiaMobile, an FDA-cleared, clinical grade personal electrocardiogram (ECG) monitor
- Capture medical-grade ECG in 30 secs by placing fingers on KardiaMobile's sensors – no wires, patches, or gels necessary
- Kardia app is free; but Kardia Mobile device is \$99 (Android and iOS)
- Additional information available at https://www.alivecor.com/?gclid=EAlaIQobChMIq_arq5HZ3gIVYP7jBx2Y8wABEAAYASAAEgKI0fD_BwE&gclidsrc=aw.ds



2. Cardiio app

- Heart rate monitor
- Measures pulse using smartphone camera
- App is free, but currently only available for iOS
- Additional information available at <https://www.cardiio.com/>



3. FibriCheck

- FDA-approved mobile app for the detection of irregular heart rhythms, including AFib
- User places finger on smartphone camera for 60 secs to detect pulse
- Information automatically shared with healthcare provider
- Currently can only be used via an access token/code issued by a healthcare organization or provider
- Received European Class IIa clearance in 2016; expected to reach the US market in 2019
- Additional information available at <https://fibrichk.com/>



4. American College of Cardiology AnticoagEvaluator App

- Helps clinicians make informed decisions on antithrombotic therapy for the non-valvular AFib patients
- Use the app to calculate stroke risk (CHA₂DS₂-VASc), bleed risk (HAS-BLED and concomitant meds), and renal function (Cockcroft-Gault Equation)
- Review stroke prevention therapy guidance based on ACC/AHA/HRS's 2014 Guidelines for the Management of Patients with Atrial Fibrillation

- d. Improve accurate use of direct oral anticoagulants (DOACs) with adjusted dosage based on prescribing information, fine-tuned for renal and other patient characteristics
- e. Determine appropriate therapy for a patient by reviewing
 - i. Synthesized individualized risk for antithrombotic therapy options based on clinical trials (e.g., ACTIVE-A, RE-LY, ROCKET-AF, ARISTOTLE, ENGAGE-AF)
 - ii. Relevant safety information and full prescribing information for all therapy options
- f. Available for Android and iOS
- g. Additional information available at <https://www.acc.org/tools-and-practice-support/mobile-resources/features/anticoag-evaluator>

Calculate a patient's stroke risk, bleed risk, and renal function.

Review guidance from ACC/AHA/HRC's 2014 Atrial Fibrillation Guideline and select from a full range of therapy options.

5. European Society of Cardiology (ESC) Apps for AFib for Patients and Clinicians

a. AF Manager app

- i. App for healthcare providers that uses integrated patient data to suggest treatment options from the ESC Clinical Practice Guidelines on Atrial Fibrillation 2016
- ii. Additional information available at <https://academic.oup.com/eurheartj/article/38/35/2643/4157484>



b. My AF app

- i. App for patients that provides educational information on the condition, stroke risk, common treatment and lifestyle improvements
- ii. Records symptoms and quality of life over time
- iii. Allows patients to record their individual characteristics and share this information with their healthcare professional
- iv. Additional information available at <https://academic.oup.com/eurheartj/article/38/35/2643/4157484>



Wearable Technologies

1. **Zio** by iRhythm cardiac monitoring device
 - a. Wearable ECG patch
 - b. Uninterrupted ECG recording defined by physician, up to 14 days
 - c. Requires prescription from clinician; higher diagnostic yield than Holter monitoring
 - d. Additional information at <https://www.irhythmtech.com/>



Patient Education Tools

1. Patient Education
 - a. Atrial fibrillation animation
 - i. Whiteboard animation describing AFib, its symptoms, risk factors, and treatment
 - ii. Available at <https://www.youtube.com/watch?v=vrtM0CGZKbs&feature=youtu.be>

② Learn to spot the symptoms of AFib:

A quivering or fluttering heartbeat

A racing and irregular heartbeat

Unexplained fatigue

Dizziness



- b. List of questions on screening/diagnosis of AFib, living with AFib, treatments, and lifestyle modifications to ask healthcare providers
- i. Available at <https://www.cmeoutfitters.com/wp-content/uploads/2018/09/Questions-to-Ask-Your-HCP.pdf>

Questions to Ask Your Healthcare Provider



Screening/Diagnosis of AFib

- Am I at risk for AFib?
- What can I do to prevent AFib?
- Do I need an ECG?
- What is causing my AFib?
- How is AFib diagnosed?
- What tests do I need to confirm a diagnosis?



Living with AFib

- How does AFib increase my health risks?
- Do I have other medical conditions that increase my risk of AFib?
- How can AFib affect my quality of life?
- Do I need to change my diet or avoid certain foods?
- Are there any physical precautions or limitations that I have because of my AFib?



Treatments

- What are my goals of treatment?
- What are my treatment options and their risks and benefits?
- Can I be treated with medications or do I need a procedure to correct my AFib?
- Do any of my current medications or medical conditions limit my treatment options?
- How do we decide which is the best treatment for me?
- Are there tests that I need before treatment or to monitor how well the treatment is working?
- How long will I have to be on treatment?
- Am I on the correct dose of my medication?
- What is my risk of bleeding when on anticoagulant medications?
- How much bleeding should cause me concern?
- Will these medications increase my risk of bleeding during colonoscopies?
- What happens if I decide against treatment or decide to stop treatment at some point?
- How often do I need to see you for follow-up?
- How can we work together to make sure I have the best clinical outcomes?
- Will there be any other specialists involved in my care?



Lifestyle modifications

- Are there any lifestyle modifications that I need to make to reduce my risk of stroke?
- Are there any lifestyle or dietary changes that I need to make regarding my treatment?
- Is there anything in particular that I need to share with my family/loved ones?
- How does obesity affect AFib?
- How does hypertension affect AFib?