

# Screening for Atrial Fibrillation in the Outpatient Clinic



**Lucy Guerra, MD, MPH, FACP**  
**Division Director & Associate Professor**

**Asa Oxner, MD**

**Vice Chair & Assistant Professor**

**University of South Florida Morsani College of Medicine**

**Department of Internal Medicine**

# Disclosures

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- We have no financial, personal, or familial associations to disclose



# Learning Objectives

Why Screen?	Who to screen?	How to screen?	Improve
Afib leads to significant mortality and morbidity	Understand who develops afib (which patients are at risk)	Use KARDIA Or other Screening Techniques (ECG, tele iapple watch etc.)	Review common treatments of afib --call attention appropriate anti-coagulation

# Objectives continued—

**last but not least....**

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- Examine some of the controversies in afib screening





**Why?**



# Atrial Fibrillation



**5 Million**

Approximately 5 million people in the U.S. have AFib.



**5 Times**

AFib patients are five times more likely to suffer a stroke.



**15-20%**

15-20% of all strokes are AFib-related.

# A Public Health Problem....

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- In addition to medical sequelae, there are serious **economic** consequences to individual and society :
  - **Individual**
    - AF related expenses add ~ **\$8700 per year** to a person's medical costs (estimate from 2004 to 2006) compared to a patient without
    - Hospitalized 2X as often as patients without AF
    - 3X more likely to have multiple admissions (1,2).
  - **Society**
    - Treating patients with AF adds between **\$6-26 billion** to the US healthcare bill annually (2)
    - Direct costs to Medicare for AF-related strokes in the first year are estimated to be **\$2.6 billion**.

# ...not just in U.S. but Worldwide

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Sweden ~ Atrial Fibrillation accounted for 1/3 of strokes (6).

- Ireland ~ also about 1/3 of strokes were attributed in atrial fibrillation induced cardio-embolic phenomenon (7).
- China ~ patients with atrial fibrillation had 4 times the risk of developing a stroke compared to the general population (8).

WHO?

to Screen?

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# Who To Screen?

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- **Risk factors for AF in the Framingham cohort:**
  - Male gender
  - Age 60-65
  - Diabetes
  - Hypertension
  - CAD/heart failure
  - Smoking
  - Chronic kidney disease
  - Elevated BMI & Sleep Apnea
  - COPD
  - Positive family history of AF 2X risk of developing AF (14).
  - h/o stroke and thyroid disease



# Subclinical Afib: Screening Studies

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- What is it? Asymptomatic afib episodes discovered by monitoring techniques in patients without previous known afib diagnosis (9).
  - **STROKESTOP**: 75-76 y/o patients underwent 2x daily screening using intermittent ECG x 2 weeks, **Afib was detected in 3% of individuals (9)**.
  - **ASSERT**: patients 65 y/o + with an ICD or dual chamber PM with HTN and no Afib hx- It was noted that at 3 months, subclinical afib was noted in 10% of patients. **At 2.5 years subclinical Afib was detected in about 35%**.
  - **ASSERT II**: patients with an ICD were followed for 16 months for development of subclinical afib (defined as lasting at least 5 min), **occurred in 34% of patients (9)**.



# How to Screen?

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# Screening: European Guidelines

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- European Heart Rhythm Association & European Society of Cardiology Guidelines:
  - recommend screening by taking pulse or ECG strip in individuals aged 65 y/o + (11,12).
  - Systematic ECG screening can be considered in individuals aged 75 y/o + (11,12).
- Cited the benefits of hopefully preventing the thromboembolic events/stroke by initiation of oral anticoagulation, as well as the other medical sequelae.

# Screening in U.S. is being further studied....

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- American Heart Rhythm Society started the 'Internal Medicine Atrial Fibrillation Screening and Educational Initiative' to evaluate the most cost effective methods to screen for atrial fibrillation.

**USF Health is part of this collaborative.**

# Using Screening Techniques for Afib such as KARDIA...





# Improve & Study Screening Methods...

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# On-Going Clinical Trials Evaluating Benefits in Screening for Afib

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- **STROKESTOP II**-proposed study to determine if the biomarker NT-proBNP together with single-lead ECG can be used as a primary population screening tool for silent atrial fibrillation
- **D<sub>2</sub>AF**-Aims to determine the yield of case-finding for atrial fibrillation in asymptomatic primary care patients.
  - Determines the diagnostic accuracy of three different case-finding methods.

# Screening Trials cont....

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- **mSToPs**- Found that intermittent rhythm monitoring at home with iZio patch was more likely to diagnose afib in a cohort of individuals without prior h/o AF, but determined to be at increased risk based on risk factors
  - 6.3% incidence of afib in monitoring vs. 2.3% in usual care
  - No difference in rate of stroke, ED visits, or hospitalizations



# Controversies with Screening...

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# United States Preventative Services Task Force (USPSTF)

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- August 2018, the USPSTF released this statement in regards to Afib Screening:

***“The USPSTF concludes that there is insufficient evidence to determine whether the benefits outweigh the harms of ECG screening in asymptomatic individuals aged  $\geq 65$  years for previously undiagnosed AF.***

***“has found inadequate evidence to determine whether screening with ECG and subsequent treatment in asymptomatic adults is more effective than usual care. ” (13).***

# Controversies with Screening...

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- *Harms of diagnostic follow-up and treatment prompted by abnormal ECG results are well established and include misdiagnosis and invasive testing.*

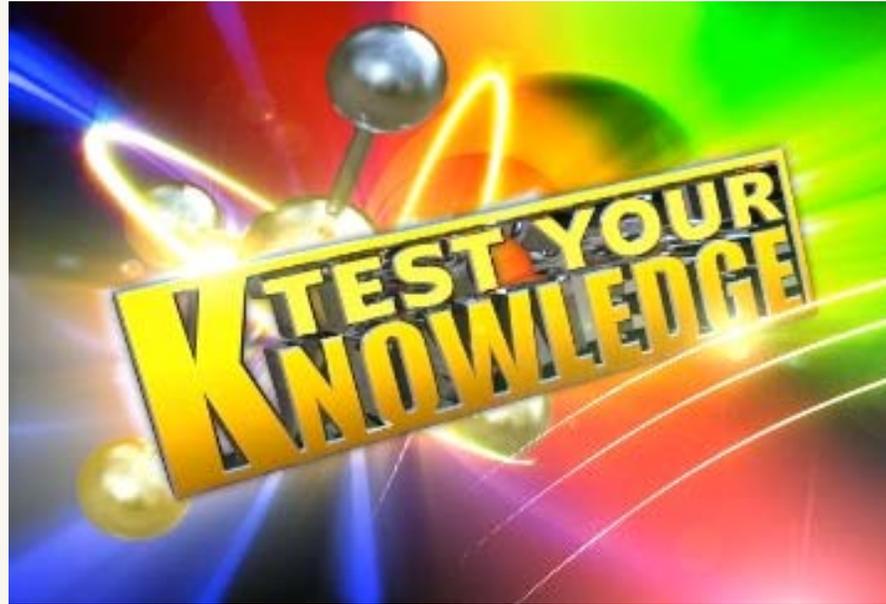
*?net benefit ?*



# Screening leads to...\$\$\$\$ and ?QALY

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- *Studies show that 88% of patients would want to take anticoagulation if they are diagnosed with afib and engage in shared-decision making (16)*
- *Patients diagnosed with afib have higher numbers of primary care visits and cardiology visits compared to controls (15)*



# Test your knowledge....

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# Afib Question 1

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- Which of the following is the risk of stroke per year in patients with atrial fibrillation compared to age-matched patients without afib?
  - A. 2x
  - B. 5x
  - C. 7x
  - D. 10x

# Afib Q1 Answer

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- **Answer: B**

- **Rationale:**

- The risk of stroke in patients with afib is 5x higher than the risk of stroke in patients without afib. This risk can be reduced by 64% with full compliance to an anticoagulant regimen.

- **Citation:**

- January CT et al ACC/AHA Task Force Members. “2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: executive summary: a report of the American College of Cardiology/American Heart Association Task Force on practice guidelines and the Heart Rhythm Society.” *Circulation*. 2014;130:2071-104.

# Afib Question 2

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- In patients newly diagnosed with afib, it is important to order which of the following investigations?
  - A. 14-day ambulatory heart monitor
  - B. CT angiogram of the coronary arteries
  - C. Transthoracic echocardiogram
  - D. Cardiac MRI

# Afib Q2 Answer

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- **Answer: C**

- **Rationale:**

- It is important to diagnosis concomitant structural heart disease in patients with afib because this will guide further individualized therapy. For example, patients who are found to have mitral valve disease will need valve repair in additional to rate control and anticoagulation. Patients found to have very enlarged atria may be candidates for MAZE procedures to reduce their atrial size and thus propensity for afib.

- **Citation:**

- January CT et al ACC/AHA Task Force Members. “2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: executive summary: a report of the American College of Cardiology/American Heart Association Task Force or practice guidelines and the Heart Rhythm Society.” *Circulation*. 2014;130:2071-104.

# Afib Question 3

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- Which of the following is a patient needing to be screened for afib with 12 lead ECG?
- A. 35 yo healthy male in the emergency department with telemetry strip showing irregular rate, who is currently intoxicated with blood alcohol level of 405
- B. 45 yo healthy female in the outpatient clinic whose Fitbit told her that she often has a heart rate of greater than 90 and who feels palpitations when she drinks coffee
- C. 55 yo male with history of heavy tobacco and cocaine use, who presents with sudden L MCA stroke
- D. 65 yo female with history of OSA and CAD s/p stent in 2012, who presents with progressive memory loss and CT brain showing multiple small vessel vascular disease

# Afib Q3 Answer

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- **Answer: D**
- **Rationale:**
- The risk factors for developing afib include dilation of the atria for any reason (common “valvular afib” is due to stenosis of the mitral, or less likely, tricuspid valves), systolic heart failure, coronary artery disease, uncontrolled hyperthyroidism, or obstructive sleep apnea. Patients who have a binge-drinking disorder are prone to developing transient atrial arrhythmias which can mimic afib but are actually not the same underlying etiology and are known as “holiday heart syndrome” because they are reversible. Fitbits are not a reliable rhythm strip, although they may measure the heart rate, they do not indicate if it is regular or irregular, and it is common to get palpitations with caffeine intake. Afib is a common etiology of vascular dementia and multiple small vessel ischemic vascular disease of the brain. Although afib can cause massive strokes such as L MCA, this is more common in concurrent cocaine and tobacco abuse, especially in the absence of other afib risk factors.

# Afib Q3 citation cont.

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- **Citation:**
- January CT et al ACC/AHA Task Force Members. “2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: executive summary: a report of the American College of Cardiology/American Heart Association Task Force on practice guidelines and the Heart Rhythm Society.” *Circulation*. 2014;130:2071-104.

# Sources

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1. Go A.S., Mozaffarian D., Roger V.L., et al. (2014) Heart disease and stroke statistics—2014 update: a report from the American Heart Association. *Circulation* **129**:e28–e292
2. Kim M.H., Johnston S.S., Chu B.C., et al. (2011) Estimation of total incremental health care costs in patients with atrial fibrillation in the United States. *Circ Cardiovasc Qual Outcomes* 4:313–320
3. Miller PS, Andersson FL, Kalra L. Are cost benefits of anticoagulation for stroke prevention in atrial fibrillation underestimated? *Stroke*. 2005;36(2):360–366
4. Singh, Steven N. “Costs and Clinical Consequences of Suboptimal Atrial Fibrillation Management.” *ClinicoEconomics and Outcomes Research: CEOR* 4 (2012): 79–90. PMC. Web. 26 Aug. 2018.
5. Reynolds MR, Essebag V. Economic burden of atrial fibrillation: implications for intervention. *Am J Pharm Benefits*. 2012;4(2):58-65.
6. Friberg L, Rosenqvist M, Lindgren A, Terént A, Norrving B, Asplund K. High prevalence of atrial fibrillation among patients with ischemic stroke. *Stroke*. 2014;45(9):2599-2605
7. Kelly PJ Crispino G Sheehan O Kelly L Marnane M Merwick A , et al. . Incidence, event rates, and early outcome of stroke in Dublin, Ireland: the North Dublin population stroke study. *Stroke* 2012; 43:2042–7.

# Sources cont.

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8. Chien KL, Su TC, Hsu HC, et al. Atrial fibrillation prevalence, incidence and risk of stroke and all-cause death among Chinese. *Int J Cardiol* 2010; 139: 173-180.
9. Uptodate, 'Epidemeology of and risk factors for atrial fibrillation'
10. Uptodate, 'Cryptogenic Stroke'
11. Mairesse GH, Moran P, Van Gelder IC, Elsner C, Rosenqvist M, Mant J, et al. Screening for atrial fibrillation: a European Heart Rhythm Association (EHRA) consensus document endorsed by the Heart Rhythm Society (HRS), Asia Pacific Heart Rhythm Society (APHRS), and Sociedad Latinoamericana de Estimulación Cardíaca y Electrofisiología (SOLAECE) *Europace*. 2017;19:1589–1623
12. Kirchhof P, Benussi S, Kotecha D, Ahlsson A, Atar D, Casadei B, et al. 2016 ESC Guidelines for the management of atrial fibrillation developed in collaboration with EACTS. *Europace*. 2016;18:1609–78.
13. US Preventive Services Task Force. Screening for Atrial Fibrillation With ElectrocardiographyUS Preventive Services Task Force Recommendation Statement. *JAMA*. 2018;320(5):478–484. doi:10.1001/jama.2018.10321
14. Wasmer, Kristina, Lars Eckardt, and Günter Breithardt. "Predisposing Factors for Atrial Fibrillation in the Elderly." *Journal of Geriatric Cardiology : JGC* 14.3 (2017): 179–184. PMC. Web. 27 Aug. 2018.
15. <http://www.afscreen.org/af-screening-studies/>
16. LaHaye S, Regpala S, Lacombe S, et al. Evaluation of patients' attitudes toward stroke prevention and bleeding risk in afib. *Thromb Haemost*. 2014 Mar 3;111(3):465–71.

# ***Our ACP Afib Champion Connect USF Team***

## **Residents:**

***Francisco Alvarado, MD (PGY2)***

***Cameron Bell, MD (PGY3)***

***Shreya Mishra, MD (PGY3)***

***Edin Sadic, MD (PGY3)***

## **Faculty:**

**Asa Oxner MD**

**Lucy Guerra MD, MPH**

**Andrew Myers, MD**



# THANK YOU

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