Patients versus Populations
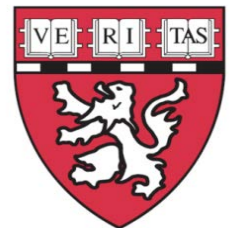# Risk Enhancements versus Age Criteria

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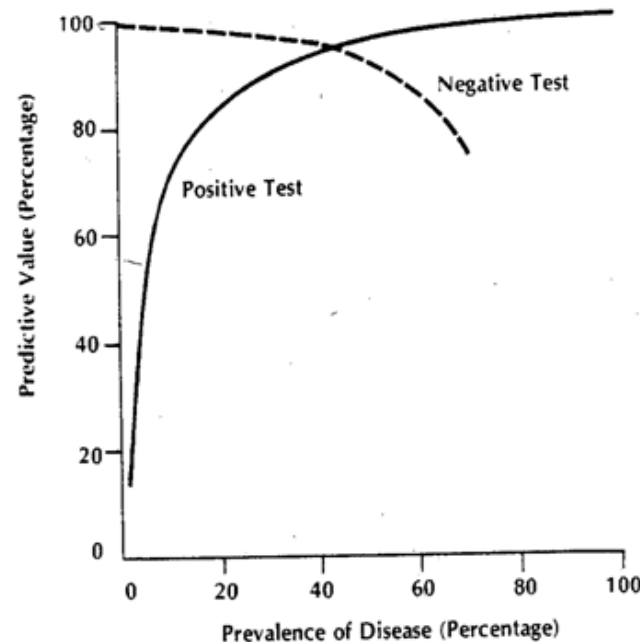
Screening: AF Prevalence

- Prevalence of AF in the population impacts the effectiveness of screening

Relationship between disease prevalence and predictive value in a test with 95% sensitivity and 85% specificity.
(From Mausner JS, Kramer S: Mausner and Bahn Epidemiology: An Introductory Text. Philadelphia, WB Saunders, 1985, p. 221.)

- **False Positives**: 1). Expense of monitoring 2). Exposure to risks of AOC without benefit
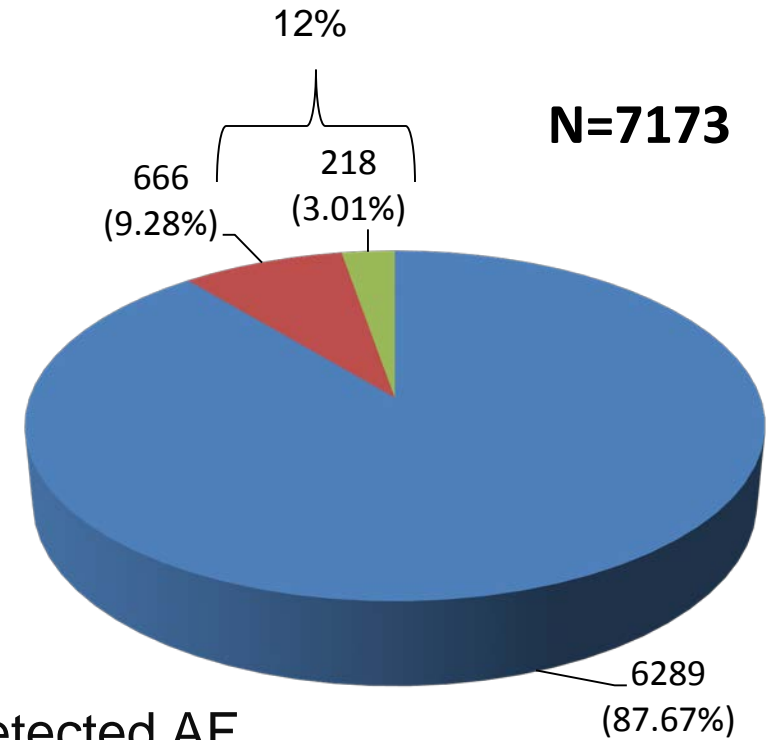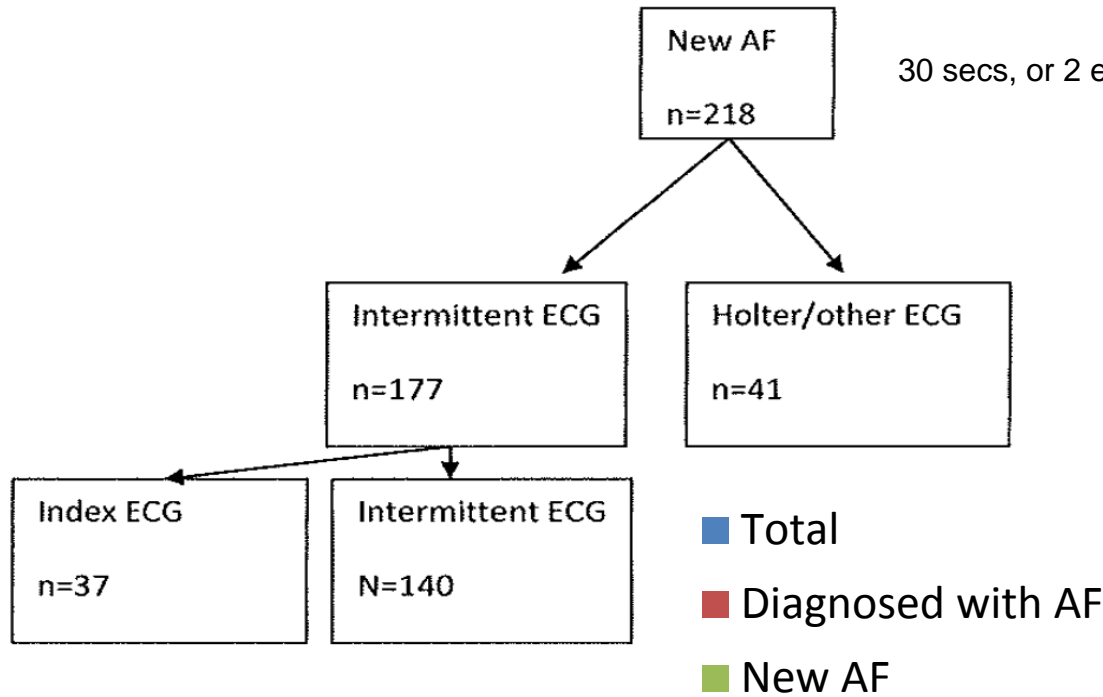
Office-Based Screening for Atrial Fibrillation

Table 3 | Prevalence and detection rate of new cases by age at start of study and sex. Figures are numbers (percentages)

Group	Men			Women			Total
	65-74	75-84	≥85	65-74	75-84	≥85	
Baseline prevalence							
Control	74/1216 (6.1)	84/703 (11.9)	25/156 (16.0)	44/1378 (3.2)	106/1050 (10.1)	56/420 (13.3)	389/4923 (7.9)
Opportunistic	70/1304 (5.4)	63/650 (9.7)	24/148 (16.2)	48/1448 (3.3)	91/1005 (9.1)	44/375 (11.7)	340/4930 (6.9)
Systematic	69/1318 (5.2)	67/647 (10.4)	15/154 (9.7)	68/1391 (4.9)	70/1022 (6.8)	50/396 (12.6)	339/4928 (6.9)
12 month prevalence							
Control	81/1213 (6.7)	91/699 (13.0)	27/151 (17.9)	55/1377 (4.0)	122/1044 (11.7)	60/418 (14.4)	436/4902 (8.9)
Opportunistic	90/1303 (6.9)	77/647 (11.9)	28/148 (18.9)	59/1443 (4.1)	109/1001 (10.9)	52/373 (13.9)	415/4915 (8.4)
Systematic	90/1312 (6.9)	82/643 (12.8)	23/154 (14.9)	77/1387 (5.6)	88/1012 (8.7)	53/398 (13.5)	413/4906 (8.4)
12 month new case detection							
Control	7/1139 (0.6)	7/615 (1.1)	2/126 (1.6)	11/1333 (0.8)	16/938 (1.7)	4/362 (1.1)	47/4513 (1.0)
Opportunistic	20/1233 (1.6)	14/584 (2.4)	4/124 (3.2)	11/1395 (0.8)	18/910 (2.0)	8/329 (2.4)	75/4575 (1.6)
Systematic	21/1243 (1.7)	15/576 (2.6)	8/139 (5.8)	9/1319 (0.7)	18/942 (1.9)	3/343 (0.9)	74/4562 (1.6)

Fitzmaurice et al. *BMJ* 2007

Mass Screening for Atrial Fibrillation in 75 Year Olds
The STROKESTOP Study

New AF
n=218

30 secs, or 2 episodes of at least 10 seconds

Intermittent ECG
n=177

Holter/other ECG
n=41

Index ECG
n=37

Intermittent ECG
N=140

■ Total
■ Diagnosed with AF
■ New AF

12%

666 (9.28%)

218 (3.01%)

N=7173

6289 (87.67%)

- Add ≥ 1 stroke risk factor to 75+: 7.4% have undetected AF.

- Cryptogenic Stroke: 16% reported with 30 day monitoring

Svennberg E et al. *Circulation* 2015;131:2176-84
Engdahl J et al. *Circulation* 2013: 127:930-937
Gladstone DJ et al. *NEJM*; 2014; 370:2467-2477

Enhancing Prevalence in Screened Populations

- **CHA2DS2-VASc:**

  - Age, Stroke, **Female Sex, HTN, Vascular disease, HF, diabetes.**

- **AF Risk Scores:**

  - CHARGE: Age, **male sex, white race, weight, height, SBP, DBP, antihypertensive, Diabetes, CVD, MI, Heart Failure**

  - WHS (Women): Age, Weight, Height, SBP, **alcohol, smoking.**

Characteristics of Patients with SCAF Detected
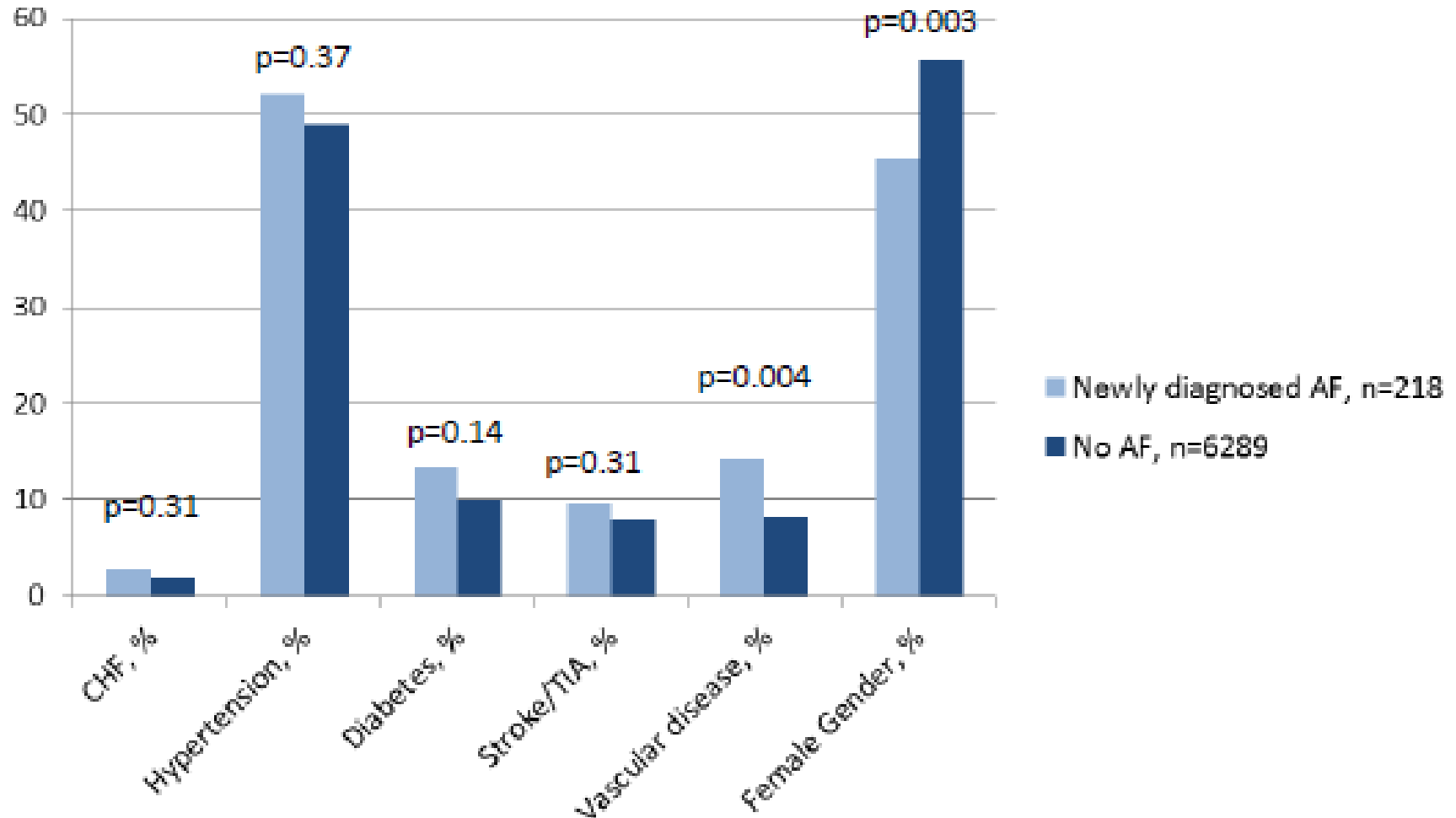
Female sex, lower weight, and absence of vascular disease were significantly associated with no detection of AF.

CHA2DS2-VASc was not associated with AF detection

Svennberg E et al. *Circulation* 2015;131:2176-84