

Zin en onzin van screening op atriumfibrilleren

Sander van Doorn
Huisarts en onderzoeker
Julius Centrum, UMC Utrecht

Disclosure belangen spreker

Potentiële Belangenverstrengeling

Voor bijeenkomst mogelijk relevante relaties met bedrijven	Bedrijfsnaam
Sponsoring of onderzoeksgeld	Geen
Honorarium of andere (financiële vergoeding)	Geen
Aandeelhouder	Geen
Andere relatie, namelijk....	Lid werkgroep NVVC Richtlijn Atriumfibrilleren

vraag:

Hoe vaak komt atriumfibrilleren voor bij patiënten ≥ 75 jaar in uw praktijk?

1. 3%
2. 6%
3. 12%
4. 20%

antwoord

Age group (years)	All		
	<i>n</i>	Cases	Cases/ <i>n</i> ^a
55–59	1161	8	0.7 (0.4–1.4)
60–64	1411	24	1.7 (1.2–2.5)
65–69	1291	51	4.0 (3.0–5.2)
70–74	1130	68	6.0 (4.8–7.6)
75–79	855	77	9.0 (7.3–11.1)
80–84	533	72	13.5 (10.9–16.7)
≥ 85	427	76	17.8 (14.5–21.7)
All	6808	376	5.5 (5.0–6.1)

12.4%

vraag:

doet of deed u wel eens aan screening op atriumfibrilleren in uw praktijk?

1. ja, dat doe ik standaard
2. ik doe/deed dat af en toe
3. nee, ik screen niet op atriumfibrilleren

vraag:

als u screent op atriumfibrilleren, hoe doet u dat?

1. ik palpeer de pols
2. ik maak een ECG
3. daar heb ik een hip apparaatje voor

vraag:

het lijkt mij zinnig te gaan screenen op atriumfibrilleren

1. eens, zo zou je immers beroerte kunnen voorkomen
2. oneens, het levert te weinig op
3. zucht.... we moeten al zo veel

over zinnige screening... (1)

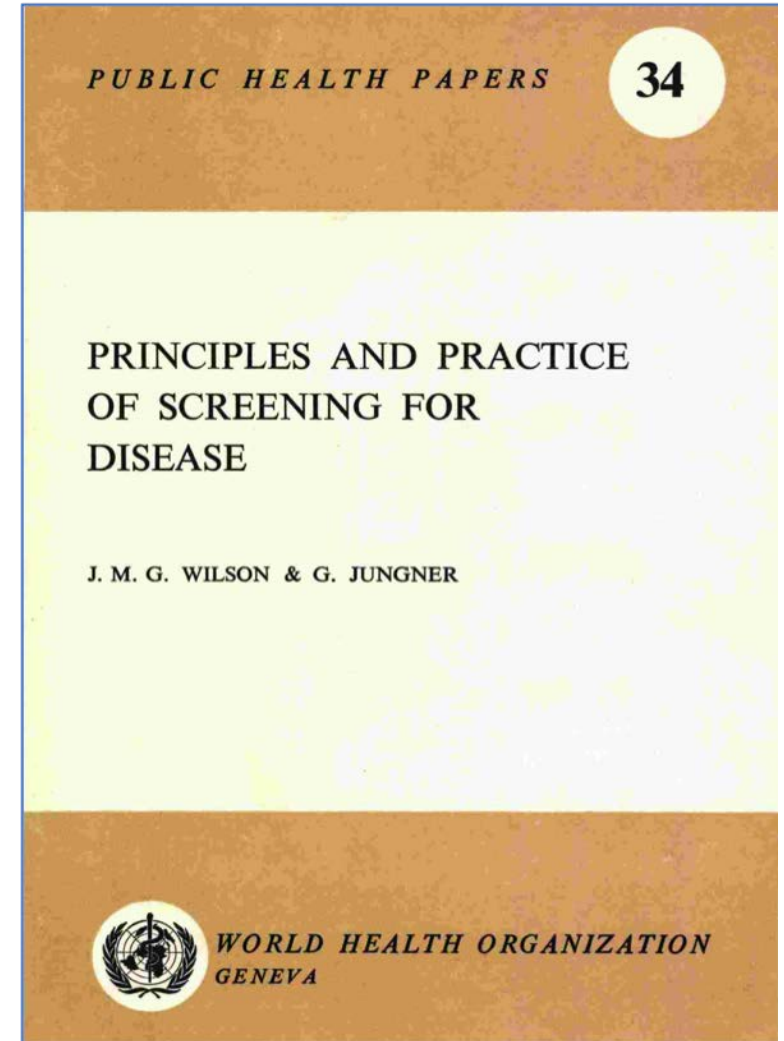
“all screening programmes do harm;
some do good as well, and, of these,
some do more good than harm at
reasonable cost”

JAM Gray et al., BMJ 2008

over zinvolle screening... (2)

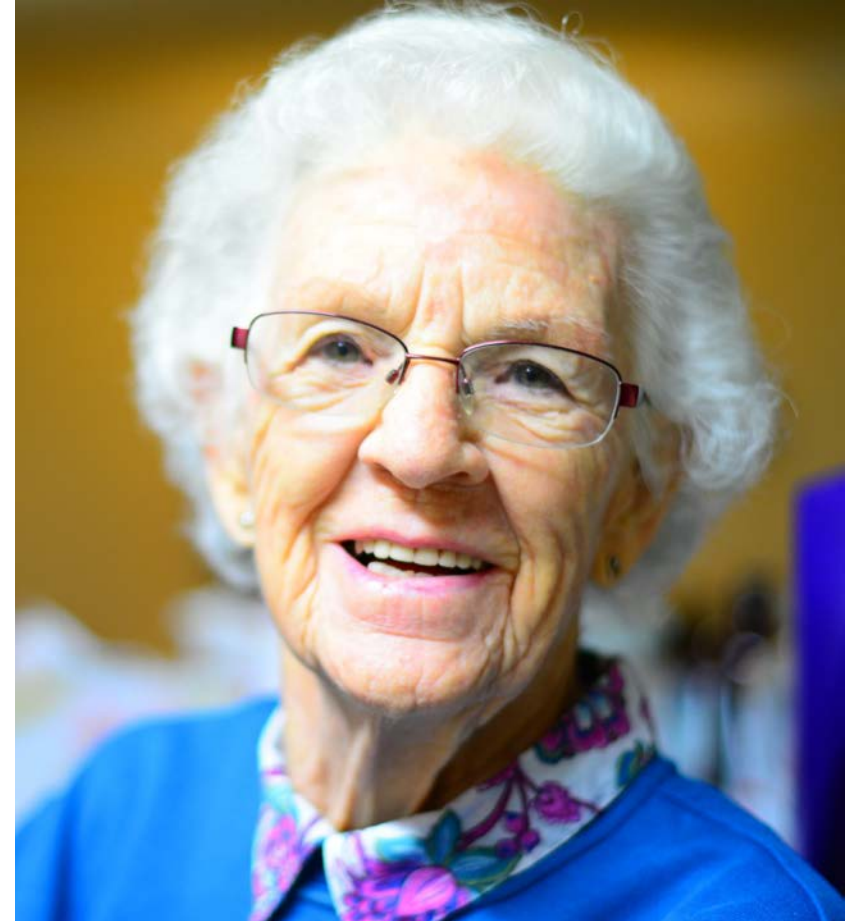
wilson en junger, WHO 1968

1. important health problem
2. accepted treatment
3. facilities for diagnosis and treatment available
4. recognizable latent or early symptomatic stage
5. suitable test or examination
6. the test should be acceptable
7. the natural history should understood
8. agreed policy on whom to treat as patients
9. the cost of case-finding balanced expenditure on medical care as a whole
10. case-finding should be a continuing process



een casus uit de praktijk

- vrouw 85 jaar
- mild hypertensie waarvoor ACE remmer
- komt voor verminderd gehoor
- wil graag ook de bloeddruk laten controlleren
- zou u bij deze patiënte specifiek naar atriumfibrilleren moeten zoeken?



wat zeggen de richtlijnen:

- multidisciplinaire standaard CVRM:
- NHG standaard atriumfibrilleren:
- standpunt EHRA 2017:

■ Voel de pols bij het meten van de bloeddruk om personen met atriumfibrilleren op te sporen.

Ook bij iedere patiënt bij wie de bloeddruk wordt gemeten beoordeelt de huisarts, praktijkondersteuner of praktijkassistent het hartritme om ook in afwezigheid van klachten atriumfibrilleren op te sporen. Algemene screening wordt niet geadviseerd.⁶

Opportunistic screening for AF in the community by pulse taking or ECG strip recording is recommended by ESC guidelines in persons aged 65 years and older.

Systematic ECG screening can be considered to detect AF in patients aged 75 years or older, or those at high stroke risk.

pols palperen... werkt het?

Device	Method of Interpretation	Sensitivity (%)	Specificity (%)
Pulse palpation		94 (84–97)	72 (69–75)
Handheld single-lead ECGs			
AliveCor (Kardia) heart monitor	Algorithm only (based on presence of P wave and RR irregularity)	98 (89–100)	97 (93–99)
Merlin ECG event recorder	Cardiologist interpretation	93.9	90.1
Mydiagnostick	Algorithm only (based on RR irregularity)	94 (87–98)	93 (85–97)
Omron HCG-801	Algorithm only (based on RR irregularity)	98.7 (93.2–100)	76.2(73.3–78.9)
Omron HCG-801	Cardiologist interpretation	94.4	94.6
Zenikor EKG	Cardiologist interpretation	96	92
Modified blood pressure monitors			
Microlife BPA 200 Plus	Algorithm only (based on pulse irregularity)	92	97
Microlife BPA 200	Algorithm only (based on pulse irregularity)	97 (81.4–100)	90 (83.8–94.2)
Omron M6	Algorithm only (based on pulse irregularity)	100	94
Omron M6 comfort	Algorithm only (based on pulse irregularity)	30 (15.4–49.1)	97 (92.5–99.2)
Microlife WatchBP	Algorithm only (based on pulse irregularity)	94.9 (87.5–98.6)	89.7 (87.5–91.6)
Plethysmographs			
Finger probe	Algorithm only (based on pulse irregularity)	100	91.9
iPhone photo-plethysmograph	Algorithm only (based on pulse irregularity)	97.0	93.5

freedman,
circulation 2017

pols palperen... doen we het ook?

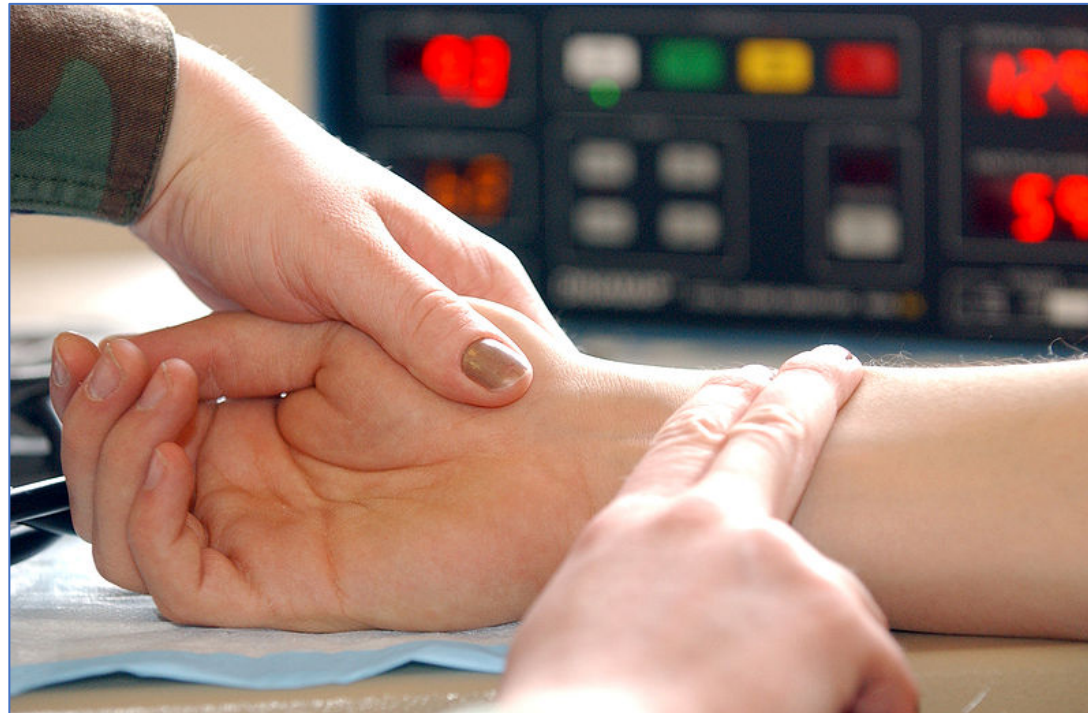
- Kaasenbrood (PAO-H 2019): 90% aanwezigen palpeert de pols tijdens bloeddruk meting
- opbrengst van pols palpatie:
- ~ 1% per jaar
- kan dit beter?



screening bij atriumfibrilleren

opportunistisch (ook: case finding): 'tijdens een regulier consult'

systematisch: 'de hele populatie uitnodigen'



pogingen te screenen: the safe study (1)

BMJ

RESEARCH

Screening versus routine practice in detection of atrial fibrillation in patients aged 65 or over: cluster randomised controlled trial

David A Fitzmaurice, professor of primary care,¹ F D Richard Hobbs, professor, head of department,¹ Sue Jowett, research fellow,¹ Jonathon Mant, reader,¹ Ellen T Murray, research fellow,¹ Roger Holder, head of statistics,¹ J P Raftery, professor of health technology assessment,² S Bryan, professor of health economics,³ Michael Davies, consultant cardiologist,⁴ Gregory Y H Lip, professor of cardiovascular medicine,⁵ T F Allan, senior lecturer⁶

pogingen te screenen: the safe study (2)

Intervention practices (n=25)
Total eligible population aged ≥ 65 = 23 187
(range 90-2726/practice)

Control practices (n=25):
Total eligible population aged ≥ 65 = 21 786
(range 149-2496/practice)

Table 2 | New cases of atrial fibrillation (AF) by trial arm identified in case notes 12 months after baseline

Group	Patients	Baseline AF	Missing notes	Denominator	Newly identified cases	New case detection %
Control	4936	389	34	4513	47	1.04
Intervention:						
Total	9866	679	50	9137	149	1.63
Opportunistic*	4933	340	18	4575	75	1.64
Systematic*	4933	339	32	4562	74	1.62

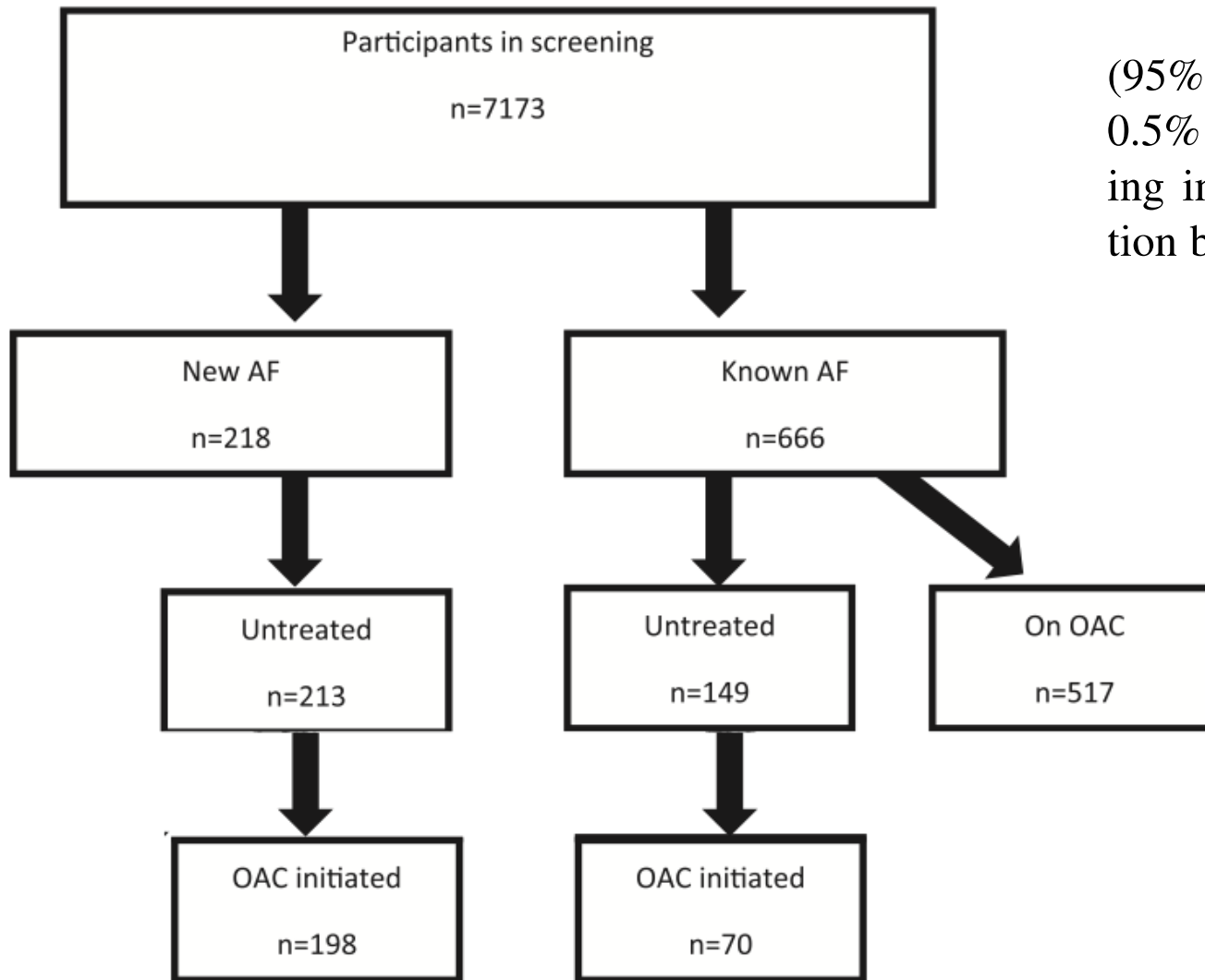
*Subsets of total intervention population.

New cases detected
(n=74, range 0-8,
average 2.96/cluster)

New cases detected
(n=75, range 0-8,
average 3.0/cluster)

New cases detected
(n=47, range 0-5,
average 1.88/cluster)

pogingen te screenen: the strokestop study (2)



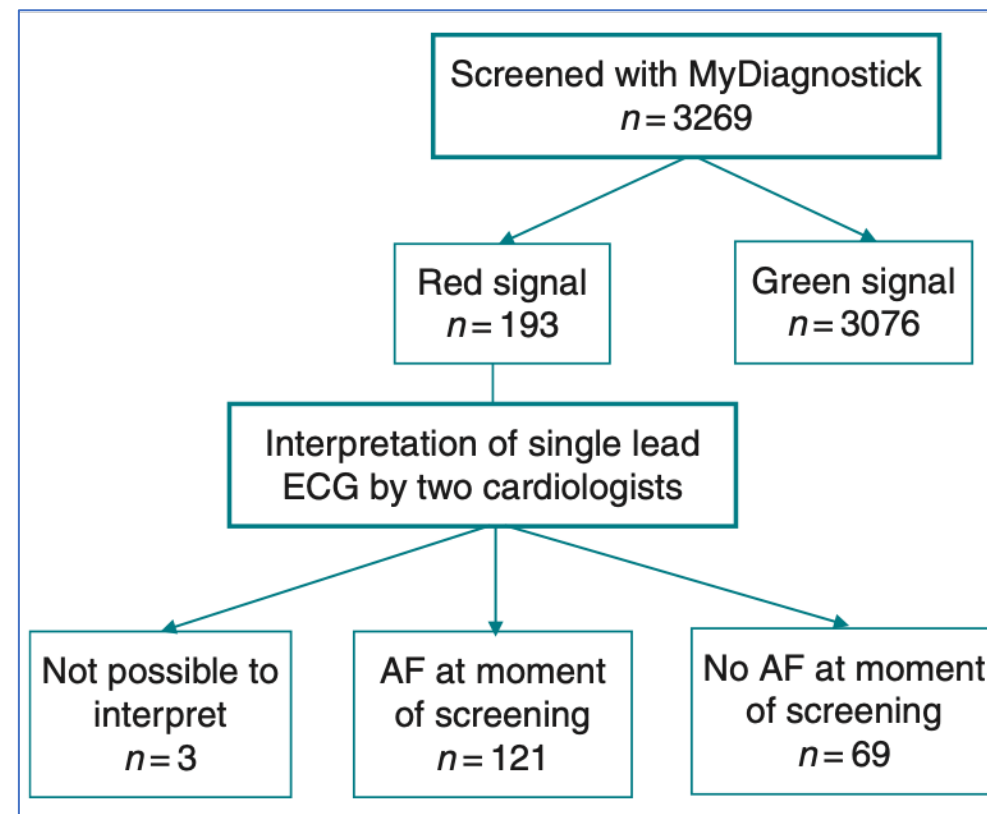
New AF was found in 3.0% (95% CI, 2.7–3.5) of the screened population, whereas only 0.5% were found on the first ECG. Intermittent ECG screening increased the prevalence of AF in the screened population by 33%.



screeningsonderzoek in nederland (1)

Yield of screening for atrial fibrillation in primary care with a hand-held, single-lead electrocardiogram device during influenza vaccination

Femke Kaasenbrood^{1*}, Monika Hollander¹, Frans H. Rutten¹, Leo J. Gerhards², Arno W. Hoes¹, and Robert G. Tieleman^{2,3}



Conclusions

Screening seems feasible with an easy to use single-lead, hand-held ECG device with automatic AF detection during influenza vaccination in primary care and results in a '1-day' yield of 1.1% new cases of AF.

screeningsonderzoek in nederland (2)

- Kaasenbrood et al. 2019:
- ‘opportunistic’ screening bij patienten ≥ 65 jaar in de huisartspraktijk
- 10.7% van de patienten is gescreend
- géén verschil tussen screening en gebruikelijke zorg: 1.43% versus 1.37%



screeningsonderzoek in nederland (2)

STUDY PROTOCOL

Open Access

Detecting and Diagnosing Atrial Fibrillation (D₂AF): study protocol for a cluster randomised controlled trial



CrossMark

Steven B. Uittenbogaart^{1*†}, Nicole Verbiest-van Gorp^{2†}, Petra M. G. Erkens², Wim A. M. Lucassen¹, J. André Knottnerus², Bjorn Winkens³, Henk C. P. M. van Weert¹ and Henri E. J. H. Stoffers²

samenvattend: ‘systematic’ screening

- meta-analyse van 19 onderzoeken
- <65 jaar 0.41%
- >65 jaar 1.44%

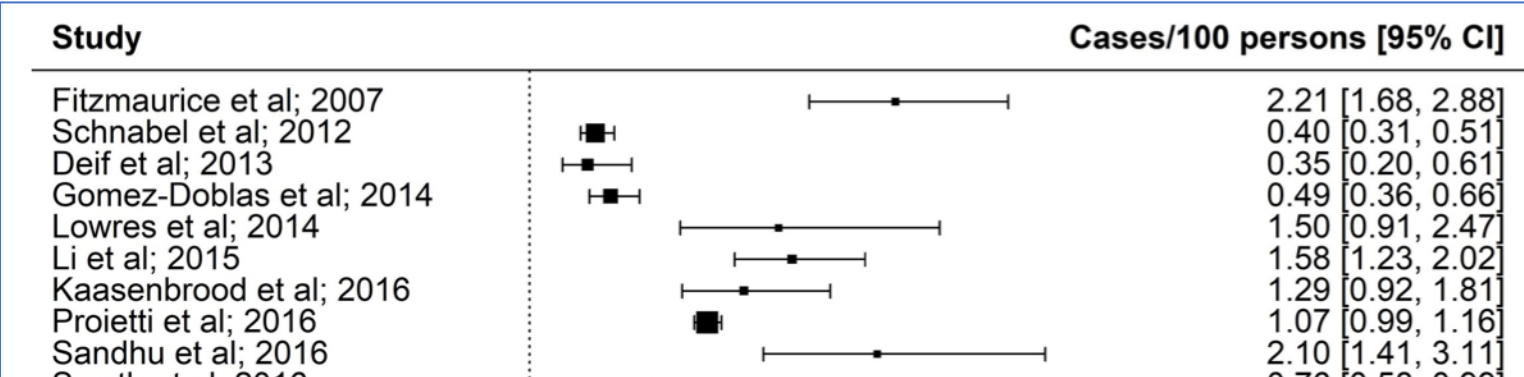


Table 3. NNS.

Age group, years	NNS to identify 1 new AF (n)	NNS to identify 1 treatable new AF (n) [‡]
<60	294	1,089
60–64	208	926
65–69	137	211
70–74	92	136
75–79	67	67
80–84	53	53
85+	37	37

0.34 [0.26, 0.45]
0.48 [0.36, 0.65]
0.73 [0.56, 0.95]
1.09 [0.84, 1.41]
1.49 [1.15, 1.94]
1.89 [1.44, 2.47]
2.73 [2.08, 3.58]

[‡]Newly identified AF with a Class-1 recommendation to prescribe OAC.

Abbreviations: AF, atrial fibrillation; NNS, number needed to screen; OAC, oral anticoagulation.

Fig 4. AF detection rate (adjusted for age and sex). Summary estimates are calculated from the 18/19 studies that provided both gender and age for total numbers screened. AF, atrial fibrillation.

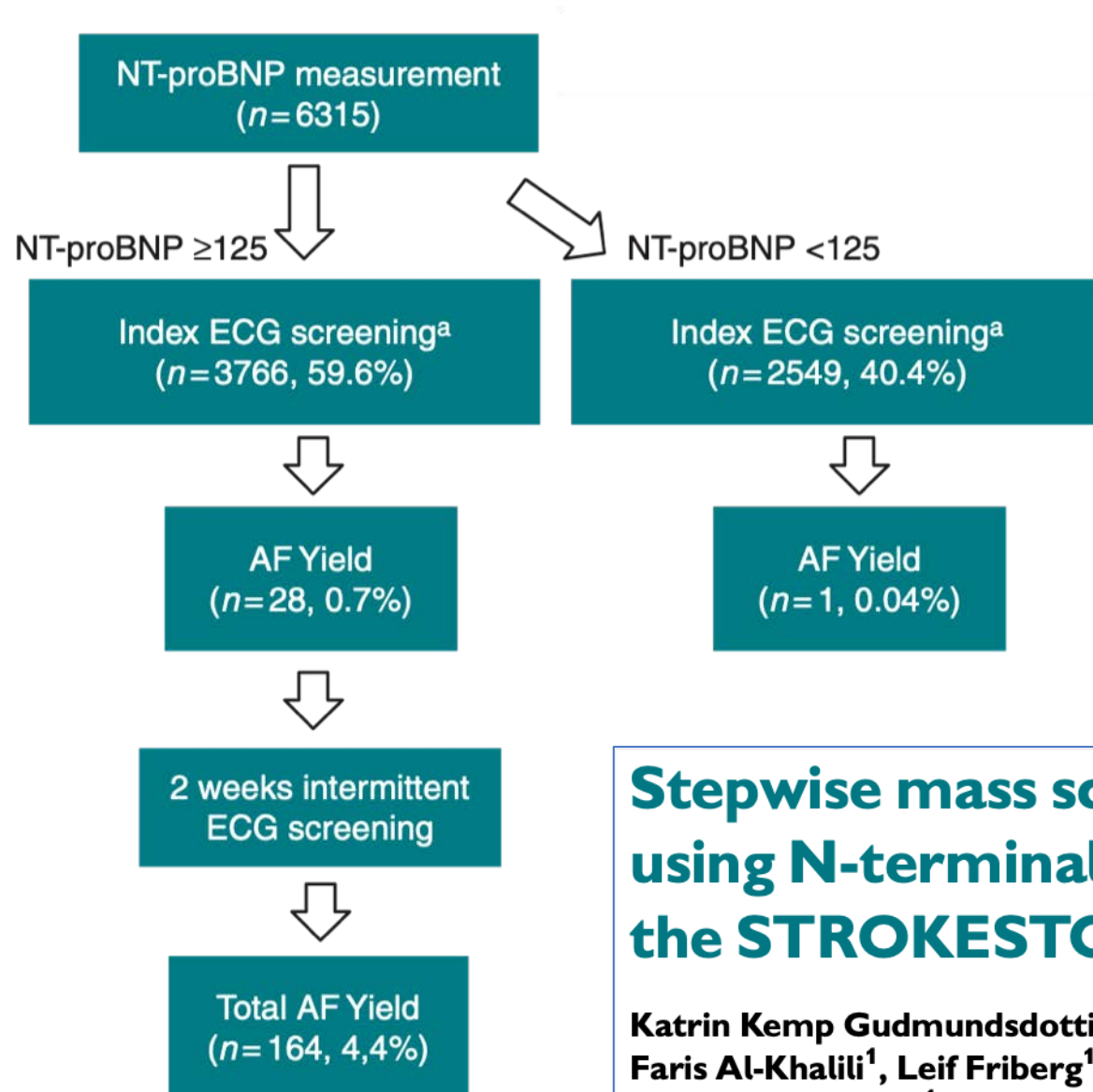
de volgende stap: hoog risico groepen (1)

Table 2. Signs and symptoms for which patients consulted the GP in the two years previous to the screen-detected AF diagnosis and for controls two years back from the moment of AF diagnosis in the matched case

Signs and symptoms	Cases n = 61 (%)	Controls n = 244 (%)	Odds Ratio (95% CI)
Palpitations	6 (9.8)	8 (3.3)	3.2 (1.1-9.7)
Chest pain/discomfort	3 (4.9)	16 (6.6)	0.7 (0.2-2.6)
Shortness of breath	8 (13.1)	26 (10.7)	1.3 (0.5-3.0)
Dizziness/lightheadedness	5 (8.2)	30 (12.3)	0.6 (0.2-1.7)
Syncope/(near) syncope	1 (1.6)	10 (4.1)	0.4 (0.05-3.1)
Fatigue	5 (8.2)	8 (3.3)	2.6 (0.8-8.4)
Suspicious for TIA/minor stroke	2 (3.3)	8 (3.3)	1.0 (0.2-4.8)
Irregular pulse	6 (9.8)	1 (0.4)	26.5 (3.1-225)
At least one of aforementioned signs or symptoms	27 (44.3)	83 (34.0)	1.5 (0.9-2.7)

kaasenbrood,
proefschrift 2019

de volgende stap: hoog risico groepen (2)



- alle inwoners stockholm 75 jaar uitgenodigd
- 2 weken screening bij NT-proBNP >125 ng/L

Stepwise mass screening for atrial fibrillation using N-terminal B-type natriuretic peptide: the STROKESTOP II study

Katrin Kemp Gudmundsdottir ^{1*}, Tove Fredriksson¹, Emma Svennberg¹, Faris Al-Khalili¹, Leif Friberg¹, Viveka Frykman¹, Ziad Hijazi², Mårten Rosenqvist¹, and Johan Engdahl¹

een heel andere benadering?

ORIGINAL ARTICLE

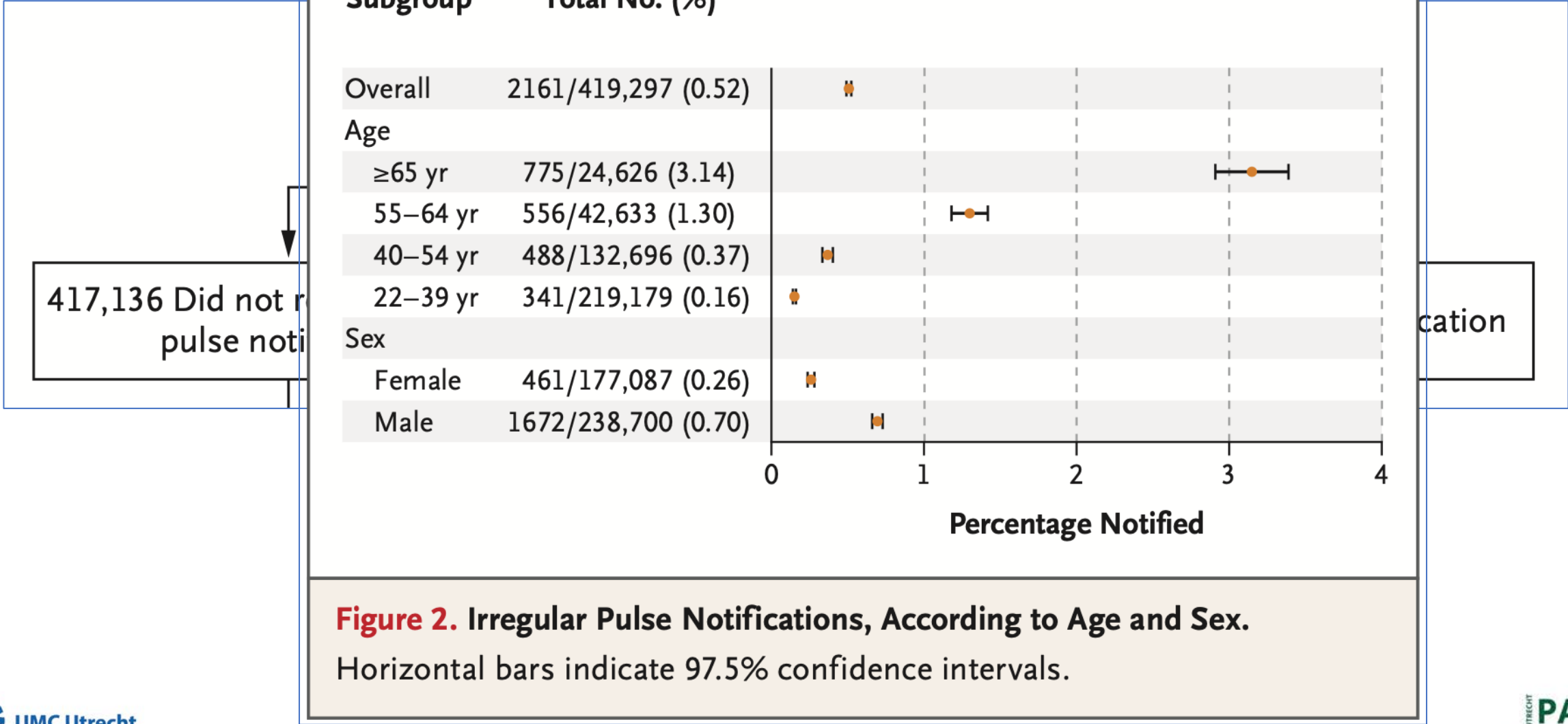
Large-Scale A to Ider

Marco V. Perez, M.D.,
John S. Rumsfeld, M.D.
Vidhya Balasubramanian,
Lauren Cheung, M.D., Gra
Nisha Talati, M.B.A
Alexis Beatty, M.D., M.A
Christopher B.
Mintu P. Turakhia, M.D

Characteristic	Total Cohort (N=419,297)
Sex — no. (%)†	
Female	177,087 (42)
Male	238,700 (57)
Other	396 (0.1)
Not reported	3,114 (0.7)
Age — yr	41±13
Age distribution — no. (%)	
≥65 yr	24,626 (5.9)



apple heart (1)



apple heart (2)

Table 2. End-of-Study Survey.

Variable	Notification Subgroup (N = 929)	Non-notification Subgroup (N = 293,015)
New diagnosis — no. (%)		
Atrial fibrillation	404 (43)	3070 (1.0)
Stroke	7 (0.8)	321 (0.1)
TIA	12 (1.3)	498 (0.2)
Heart failure	30 (3.2)	648 (0.2)
Myocardial infarction	10 (1.1)	574 (0.2)
Major bleeding	7 (0.8)	842 (0.3)
Medication use — no. (%)*		
Warfarin	20 (2.2)	265 (0.1)
Direct oral anticoagulant	202 (22)	996 (0.3)
Aspirin	338 (36)	40,774 (14)

* This category refers to medication use since enrollment in the study, as reported by the participants.

missende schakel

OACs further improve outcomes with less intracranial bleeding.²⁹ It has been questioned whether screen-detected AF should prompt OAC treatment and whether the response to treatment is the same as for symptomatic AF. An undetermined proportion of asymptomatic patients with incidentally detected AF were included in the pivotal anticoagulant studies, but these studies have not been analyzed separately.²⁸ No randomized controlled trials exist, and it may be unethical to randomize patients with screen-detected AF to no therapy or an ineffective drug such as aspirin. The treatment decision for

samenvattend

- pols palpatie bij het meten van de bloeddruk
- screenen vindt atriumfibrilleren in 1-2%
- in specifieke groepen is dit percentage hoger...
- ... of juist veel lager
- er zijn géén gegevens over de prognose van patiënten die bij screening atriumfibrilleren blijken te hebben

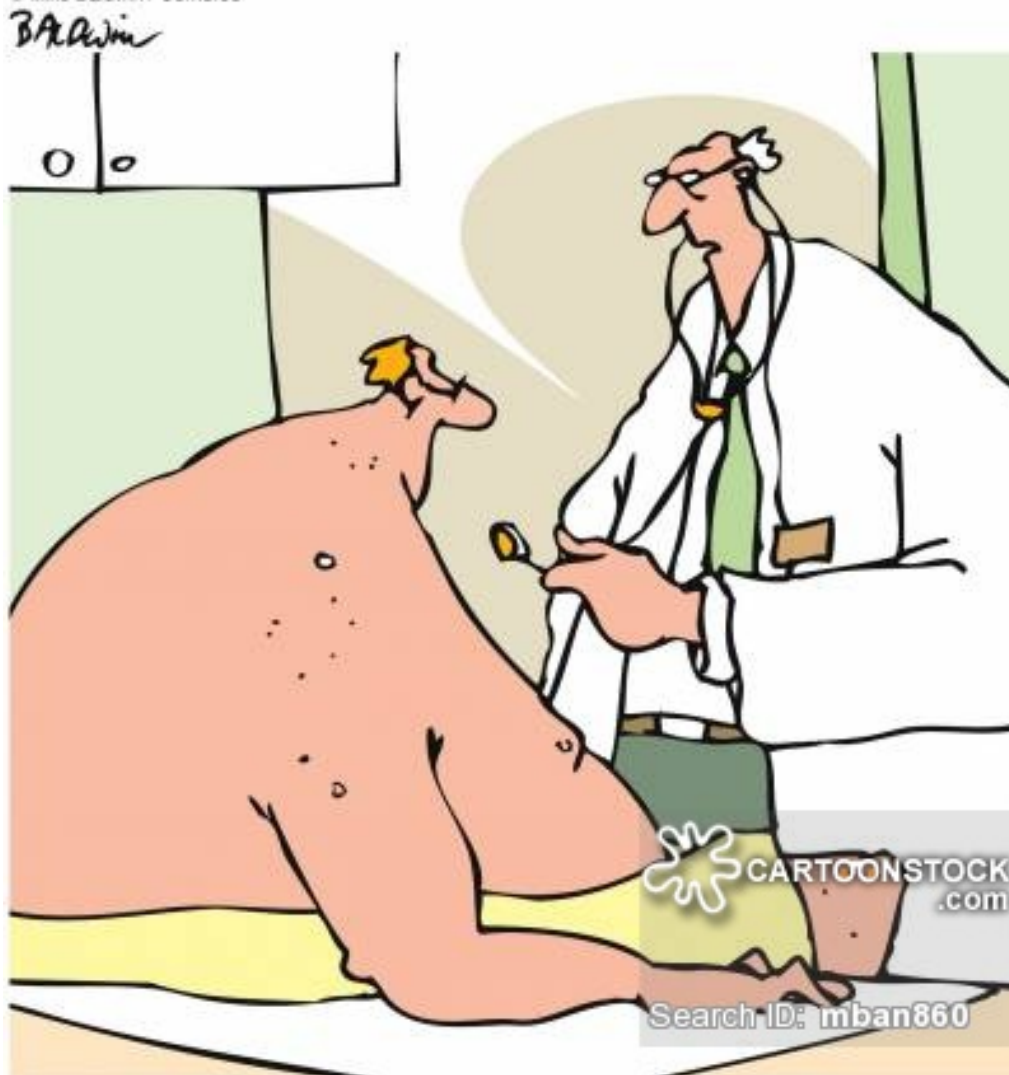


take home message: zin en onzin van screenen naar AF?

1. important health problem
2. accepted treatment
3. facilities for diagnosis and treatment available
4. recognizable latent or early symptomatic stage
5. suitable test or examination
6. the test should be acceptable
7. the natural history should understood
8. agreed policy on whom to treat as patients
9. the cost of case-finding balanced expenditure on medical care as a whole
10. case-finding should be a continuing process



© Mike Baldwin / Cornared



“Irregular heartbeat. Due to irregular exercise.”

sander van doorn
geert-jan geersing
frans rutten

s.vandoorn@umcutrecht.nl