




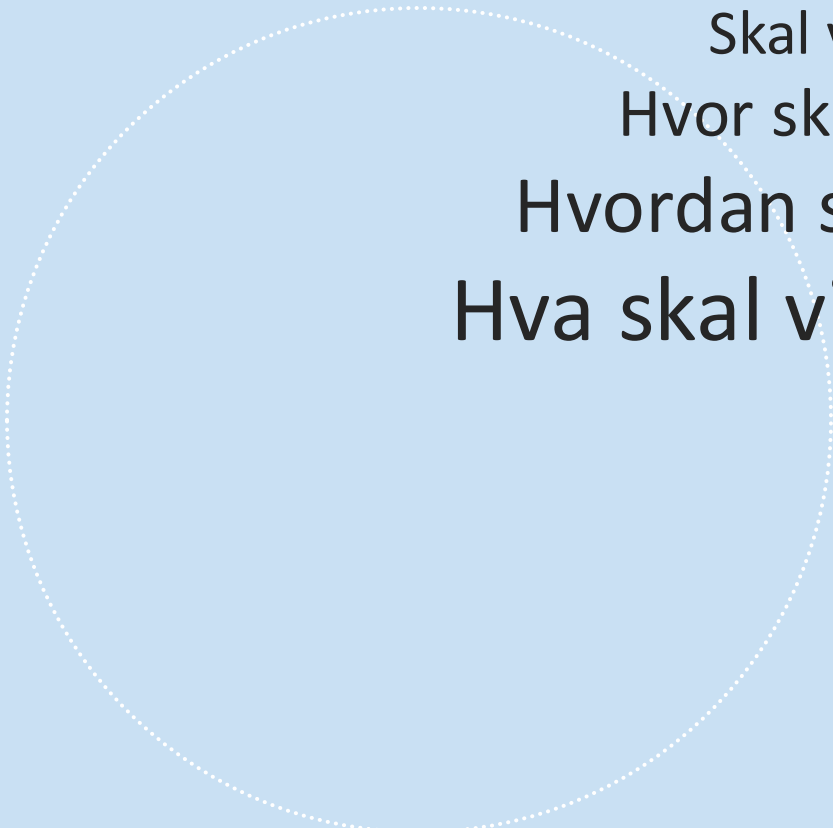
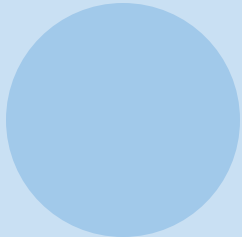

Let, så skal dere finne

Matteus 7.7

Screening for atrieflimmer

Jarle Jortveit, overlege PhD MHA
Sørlandet sykehus Arendal

Indremedisinsk høstmøte, Oslo, 17.10.2024



Skal vi lete?
Hvor skal vi lete?
Hvordan skal vi lete?
Hva skal vi lete etter?

Synsbekejennelse

- Foredragshonorar: Amgen, Astra-Zeneca, BMS, Boehringer-Ingelheim, Novartis, Pfizer, Sanofi
- Forskningsstøtte (institusjon): Astra-Zeneca, BMS, Boehringer-Ingelheim, Pfizer
- Medisinsk leder/co-founder: ECG247 (Appsens AS)

Per 75 år

- Tidligere sykdommer
 - Hypertensjon
 - Diabetes
- Medikamenter
 - Lisinopril 10 mg x 1
 - Metformin 1000 mg x1
- Aktuelt
 - Rutinekontroll
 - Ingen symptomer
 - God fysisk form



Per 75 år

- Forteller at kona nylig fikk et alvorlig hjerneslag
- Ønsker å teste om han kan ha atrieflimmer



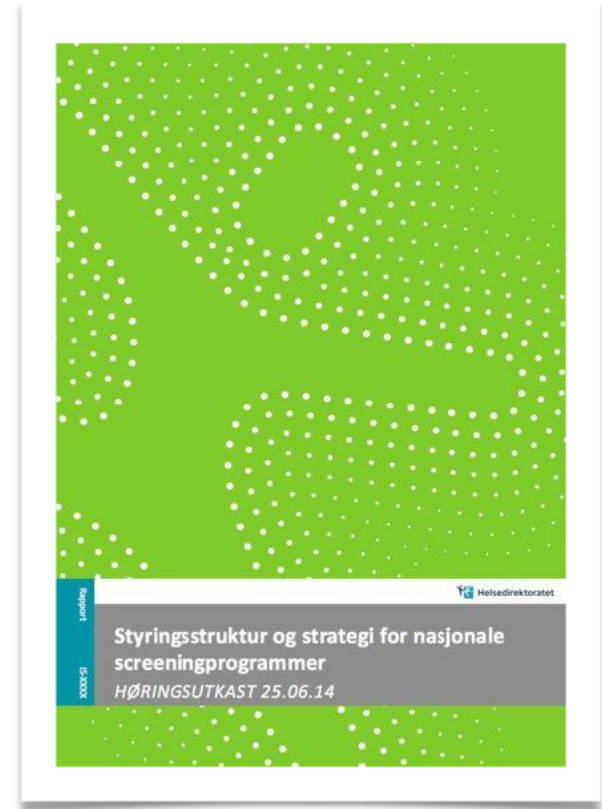
Per 75 år

?



Screening

«En systematisk undersøkelse av en presumptivt frisk befolkningsgruppe for å finne individer med risikofaktorer for sykdom eller tidlige stadier av sykdom, før sykdommen gir symptomer»



Screening



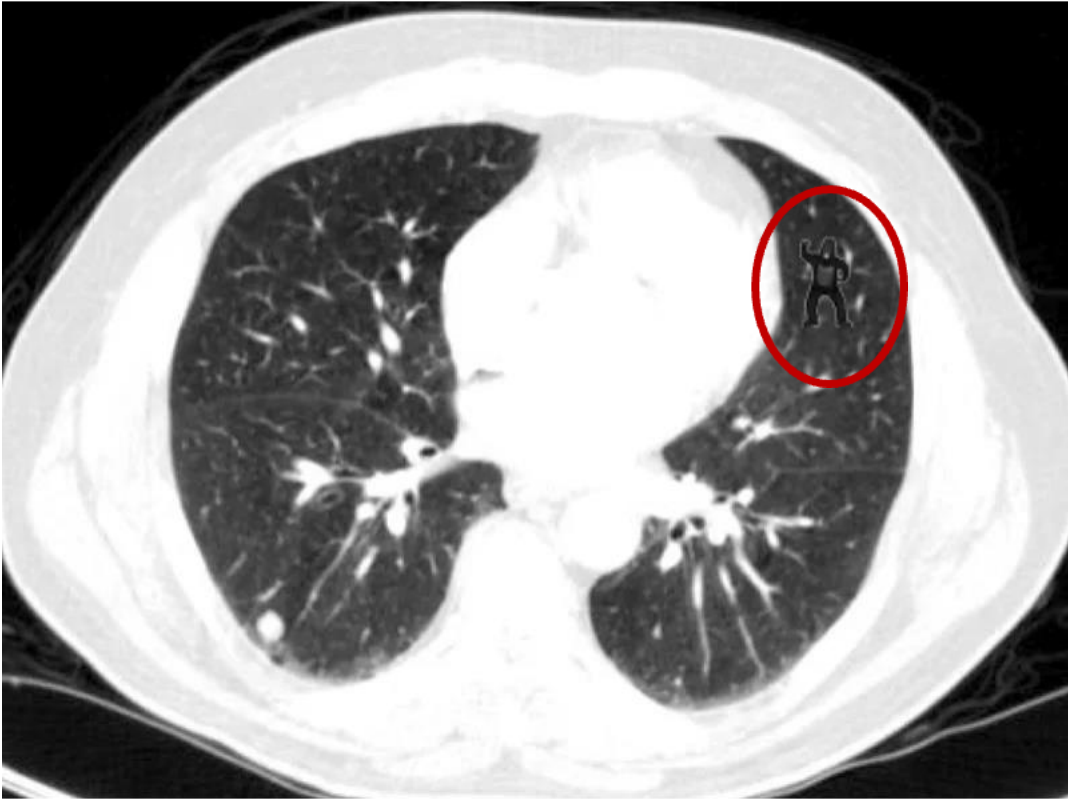
Screening

Generelle utfordringer

- Falske positive testsvar
- Falske negative testsvar
- Sykeliggjøring
- Overdiagnostikk og overbehandling
- Ressursbruk

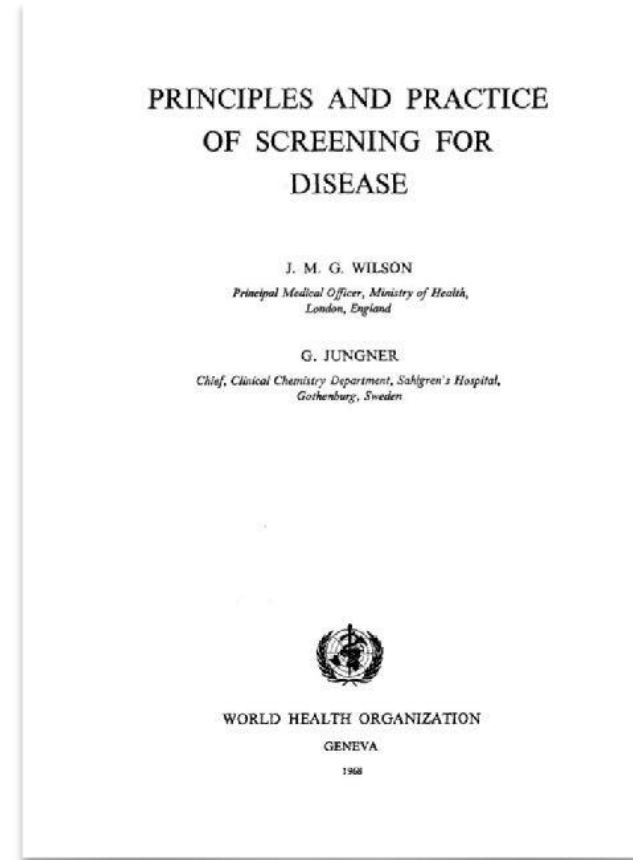


Screening



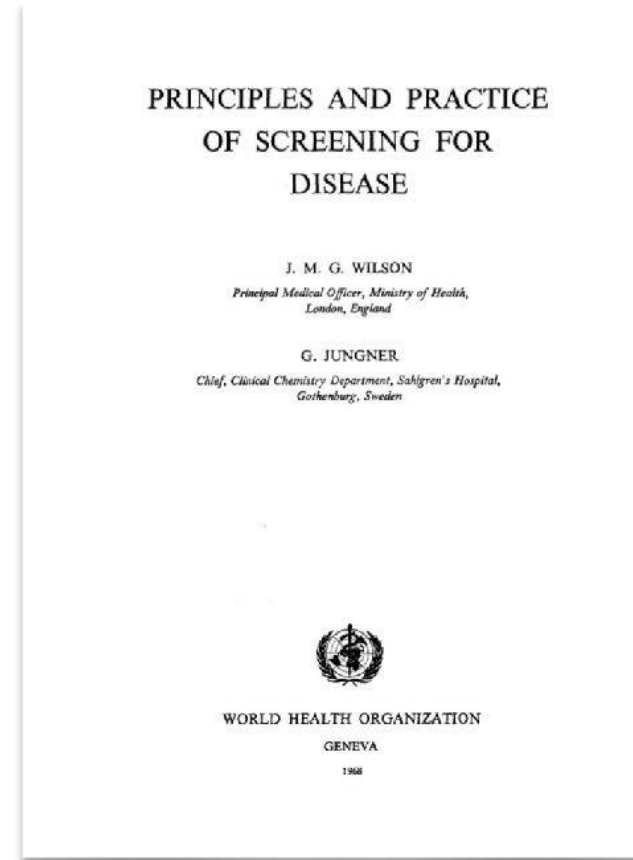
Forutsetninger

1. Helseproblem
2. Test
3. Behandling

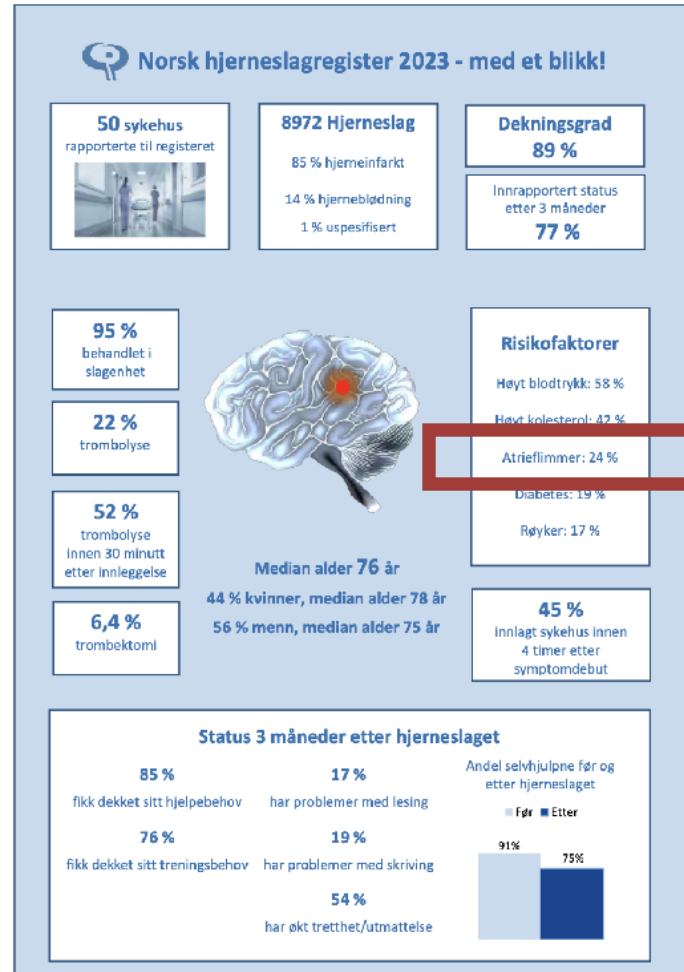


Forutsetninger

1. Helseproblem
2. Test
3. Behandling



Hjerneslag



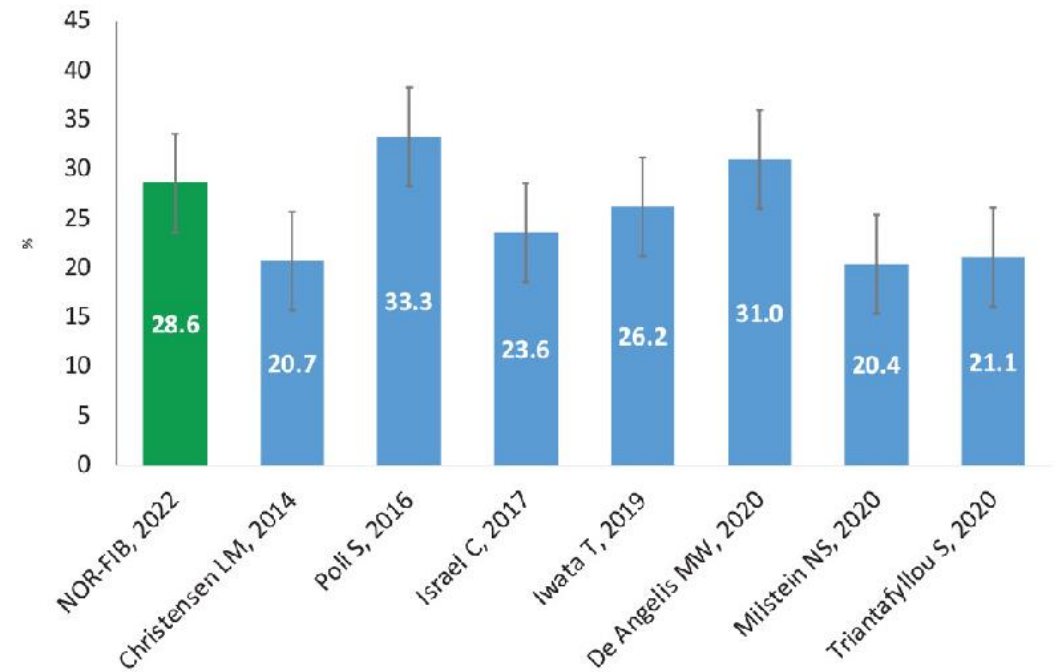
Hjerneslag

DAGENS Medisin DM Debatt DM Pharma DM Arena DM Jobb Logg inn



EFFEKTIVT: – Studien viste at forlenget hjerterytmeovervåking med ICM er et meget effektivt verktøy for å diagnostisere underliggende asymptomatisk atrieflimmer ved hjerneinfarkt og TIA av ukjent årsak, sier OUS-overlege og studieleder Anne Hege Aamodt. Illustrasjonsfoto: Getty Images
Foto:

Studie: Atrieflimmer uten symptomer er årsak til mange hjerneslag med ukjent årsak



Ratajczak-Tretel B, Tancin Lambert A, Al-Ani R, et al. Atrial fibrillation in cryptogenic stroke and TIA patients in The Nordic Atrial Fibrillation and Stroke (NOR-FIB) Study: Main results. European Stroke Journal. 2023;8(1):148-156. doi:10.1177/107754122311775412

Circulation

Volume 133, Issue 5, 2 February 2016; Pages 484-492
<https://doi.org/10.1161/CIRCULATIONAHA.115.018614>



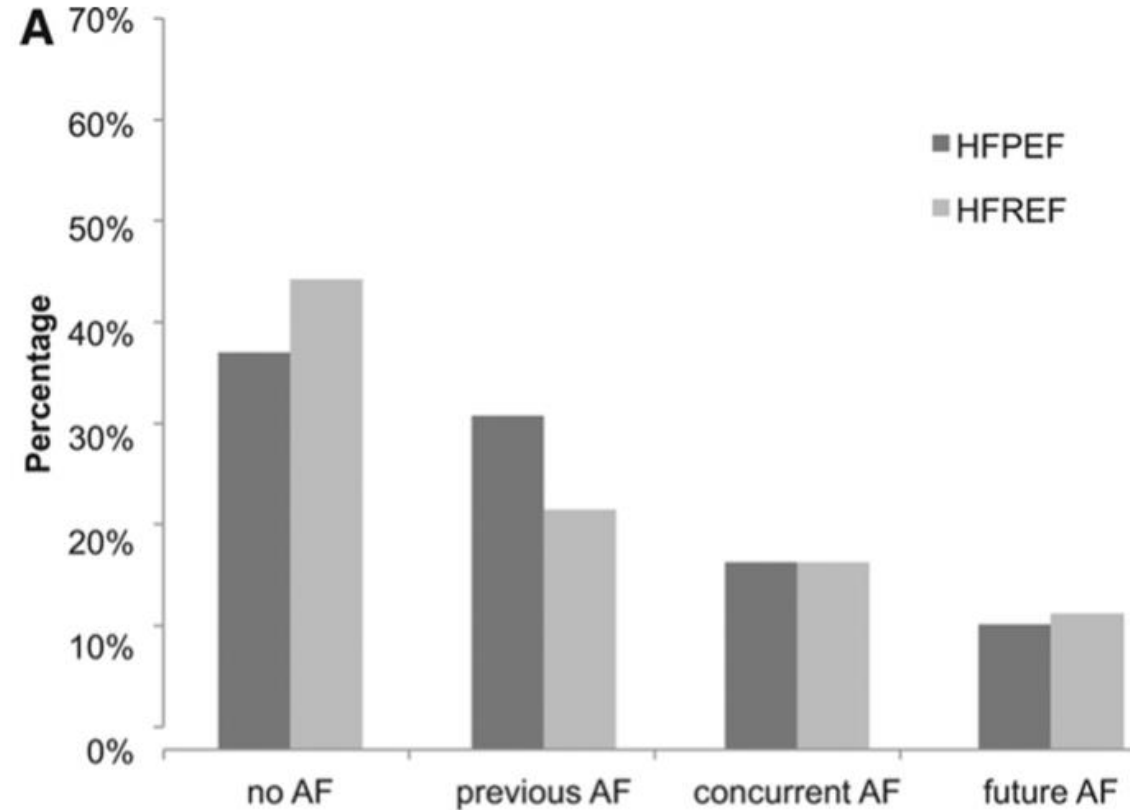
EPIDEMIOLOGY AND PREVENTION

Atrial Fibrillation Begets Heart Failure and Vice Versa

Temporal Associations and Differences in Preserved Versus Reduced Ejection Fraction

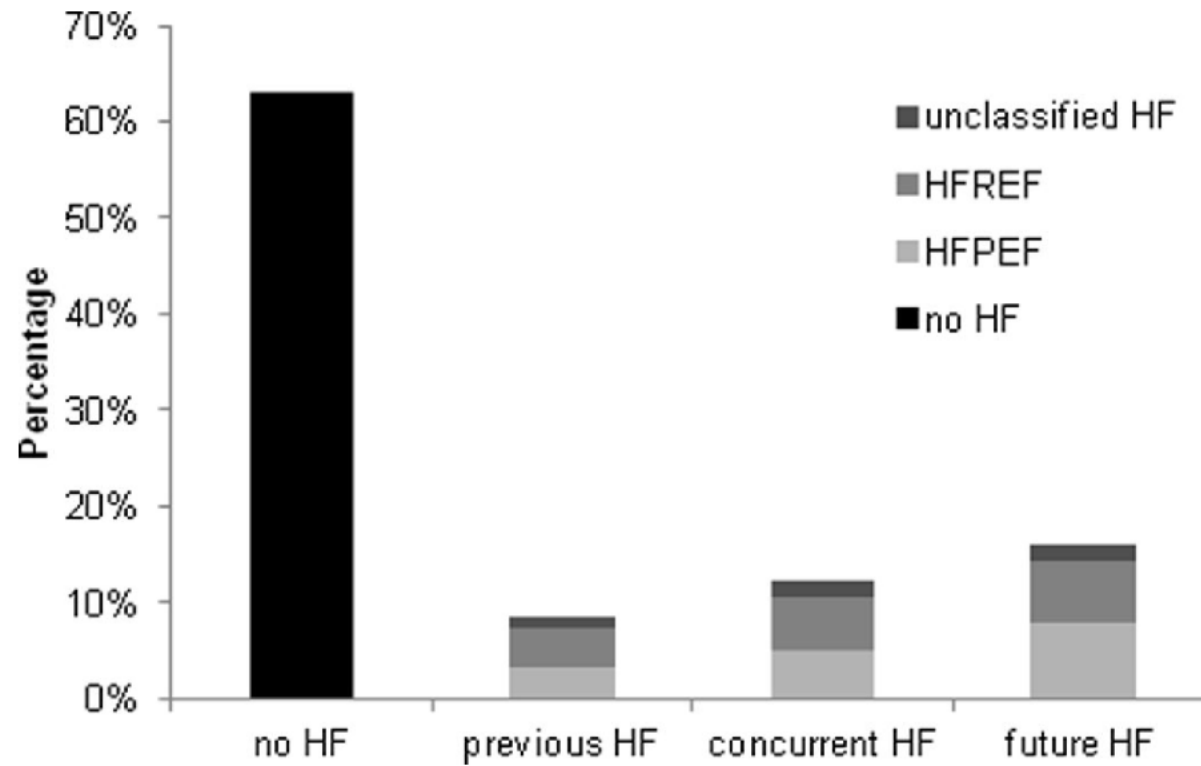
Rajalakshmi Santhanakrishnan, MBBS, Na Wang, MA, Martin G. Larson, SD, Jared W. Magnani, MD, MSc, David D. McManus, MD, Steven A. Lubitz, MD, MPH, Patrick T. Ellinor, MD, PhD, Susan Cheng, MD, Ramachandran S. Vasani, MD, Douglas S. Lee, MD, PhD, Thomas J. Wang, MD, Daniel Levy, MD, Emelia J. Benjamin, MD, ScM, and Jennifer E. Ho, MD

Hjertesvikt










Atrial Fibrillation Begets Heart Failure and Vice Versa
R. Santhanakrishnan, N. Wang, M. G. Larson, J. W. Magnani, D. D. McManus, S. A. Lubitz, et al.
Circulation 2016 Vol. 133 Issue 5 Pages 484-492
DOI: doi:10.1161/CIRCULATIONAHA.115.018614

Hjertesvikt



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Circulation 2016 Vol. 133 Issue 5 Pages 484-492
DOI: doi:10.1161/CIRCULATIONAHA.115.018614

Andre komplikasjoner

AF-Related Outcome	Frequency in AF		
Death 	1.5 - 3.5 fold increase		
Stroke 	20-30% of all ischaemic strokes, 10% of cryptogenic strokes		
LV dysfunction / Heart failure 	In 20-30% of AF patients		
		Cognitive decline / Vascular dementia 	HR 1.4 / 1.6 (irrespective of stroke history)
		Depression 	Depression in 16-20% (even suicidal ideation)
		Impaired quality of life 	>60% of patients
		Hospitalizations 	10-40% annual hospitalization rate

Atrieflimmer

LIFETIME RISK for AF
1 in 3 individuals



of European ancestry
at index age of 55 years
37.0% (34.3% to 39.6%)

Gerhard Hindricks, Tatjana Potpara, Nikolaos Dagres, Elena Arbelo, Jeroen J Bax, Carina Blomström-Lundqvist, Giuseppe Boriani, Manuel Castellà, Gheorghe-Andrei Dan, Polychronis E Dilaveris, Laurent Fauchier, Gerasimos Filippatos, Jonathan M Kalman, Mark La Meir, Deirdre A Lare, Jean-Pierre Lebeau, Maddalena Lettino, Gregory Y H Lip, Fausto J Pinto, G Neil Thomas, Marco Vglimigli, Isabella C Van Gelder, Bart P Van Putte, Caroline L Walkins, ESC Scientific Document Group, 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association of Cardio-Thoracic Surgery (EACTS): The Task Force for the diagnosis and management of atrial fibrillation of the European Society of Cardiology (ESC) developed with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC, *European Heart Journal*, , ehaa617, <https://doi.org/10.1093/eurheartj/ehaa617>

Atrieflimmer

Prevalence and incidence rates of atrial fibrillation in Norway 2004–2014

Lars Jøran Kjerpeseth ¹, Jannicke Igland, ² Randi Selmer, ¹ Hanne Ellekjær, ^{3,4} Arnljot Tveit, ^{5,6} Trygve Berge ⁵, Silje Madeleine Kalstø, ⁵ Ingrid Elisabeth Christophersen, ^{5,7} Marius Myrstad, ⁵ Eva Skovlund, ^{1,8} Grace Margrethe Egeland, ^{2,9} Grethe Seppola Tell, ^{1,2} Inger Ariansen ¹

Conclusions We found overall stable IRs of AF for the adult Norwegian population from 2004 to 2014. The prevalence of AF was 3.4% at the end of 2014, which is higher than reported in previous studies. Signs of an

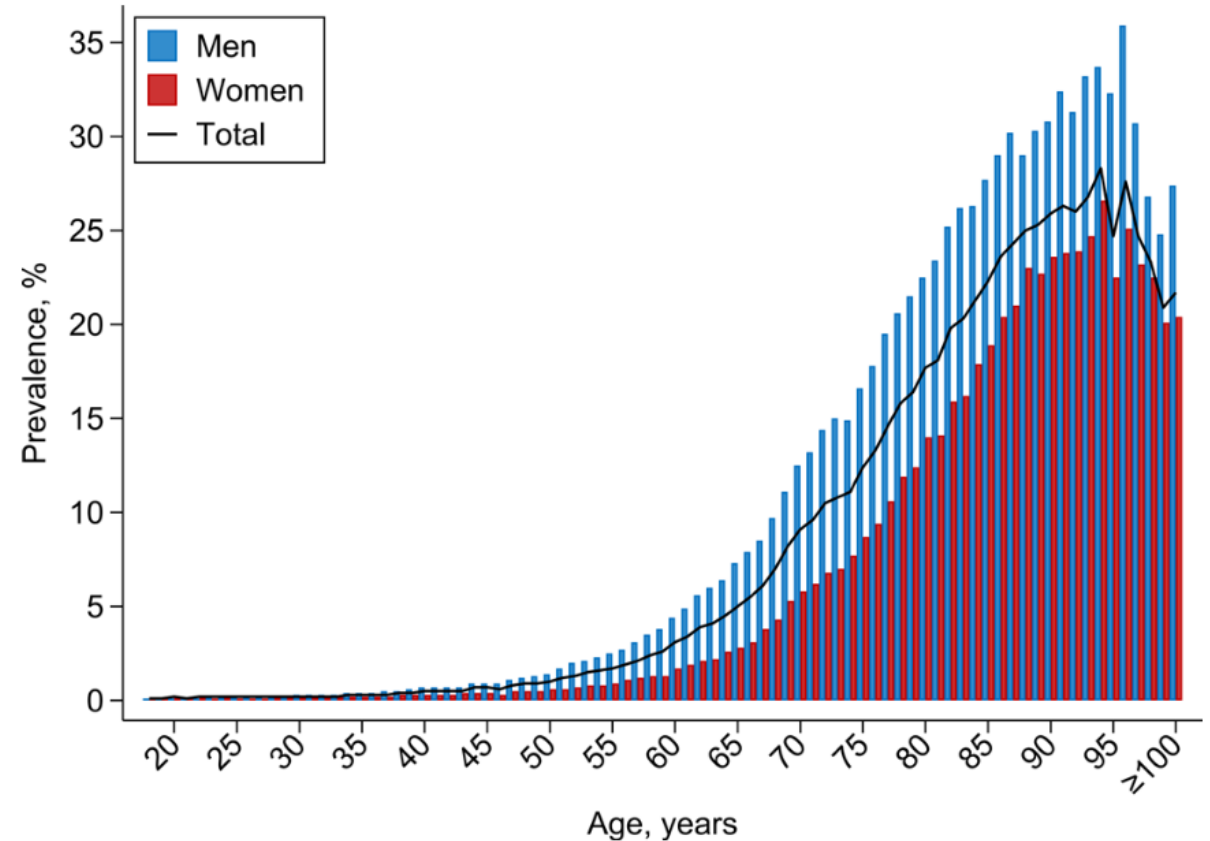


Figure 4 Cumulative prevalence of atrial fibrillation from 1994 to 2014 in Norway by age.



ESC

European Society
of Cardiology

Europace (2017) 00, 1–7
doi:10.1093/europace/eux293

CLINICAL RESEARCH

Systematic screening for atrial fibrillation in a 65-year-old population with risk factors for stroke: data from the Akershus Cardiac Examination 1950 study

Trygve Berge^{1,2*}, Jon Brynildsen^{2,3}, Hege K. Netmangen Larsen³,
Sophia Onarheim¹, Gaute R. Jenssen^{1,2}, Haakon Ihle-Hansen^{1,2},
Ingrid E. Christophersen¹, Marius Myrstad¹, Helge Røsjø^{2,3}, Pål Smith^{2,3}, and
Arnljot Tveit^{1,2}

Conclusion

In a group of 1510 well-characterized 65-year-olds with risk factors for stroke, 2-week intermittent ECG screening identified undiagnosed AF in 0.9%. The total prevalence of AF was 7.6%.



Hjerteinfarkt og AF

Alder	Forekomst AF
<50 år	2,4 %
50-59 år	5,0 %
60-69 år	9,9 %
70-79 år	18,9 %
≥80 år	28,3 %

 NORSK HJERTEINFARKTREGISTER

Jortveit J, Pripp A, Langørgen J, Halvorsen S. Poor adherence to guideline recommendations among patients with atrial fibrillation and acute myocardial infarction. Eur J Prev Cardiol 2019

Ubehandlet AF

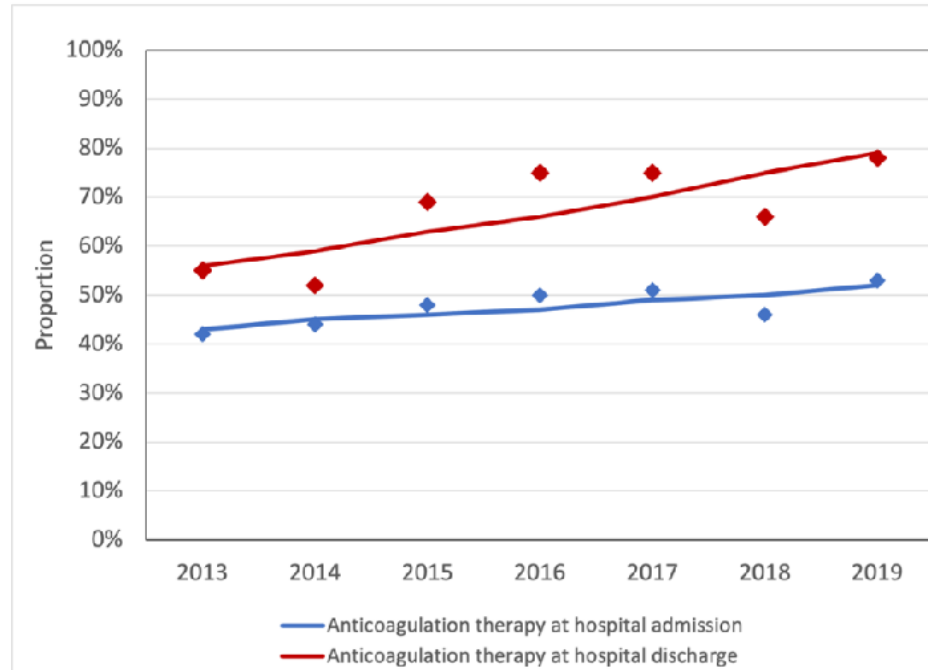
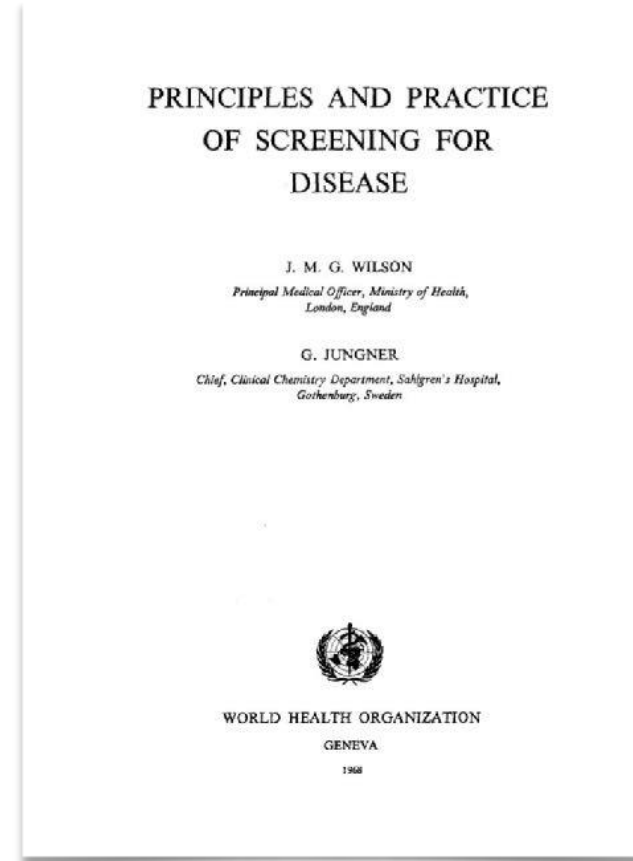


Figure 2 Proportion of patients with atrial fibrillation prescribed anticoagulation therapy prior to and after hospitalisation for acute myocardial infarction, Norway 2013–2019.

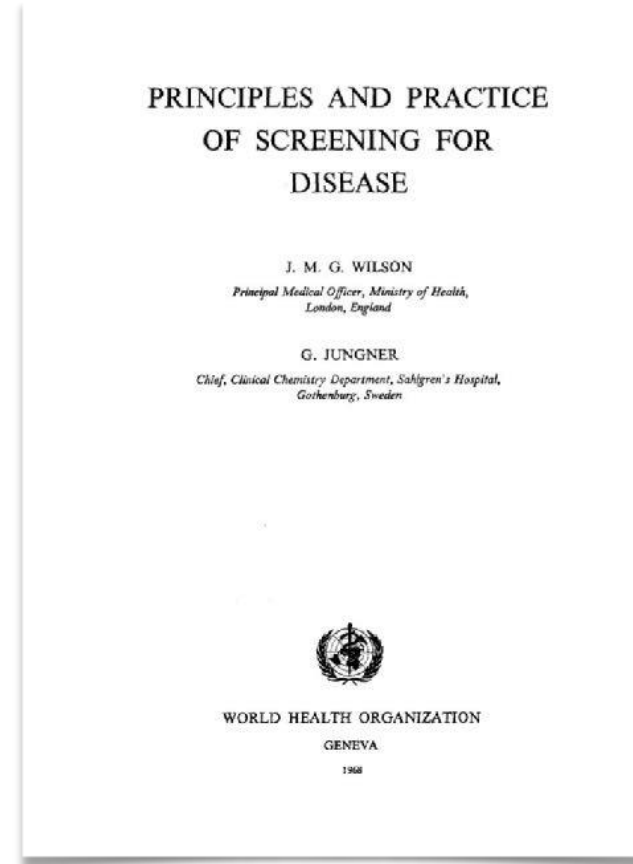
Forutsetninger

1. Helseproblem
2. Test
3. Behandling



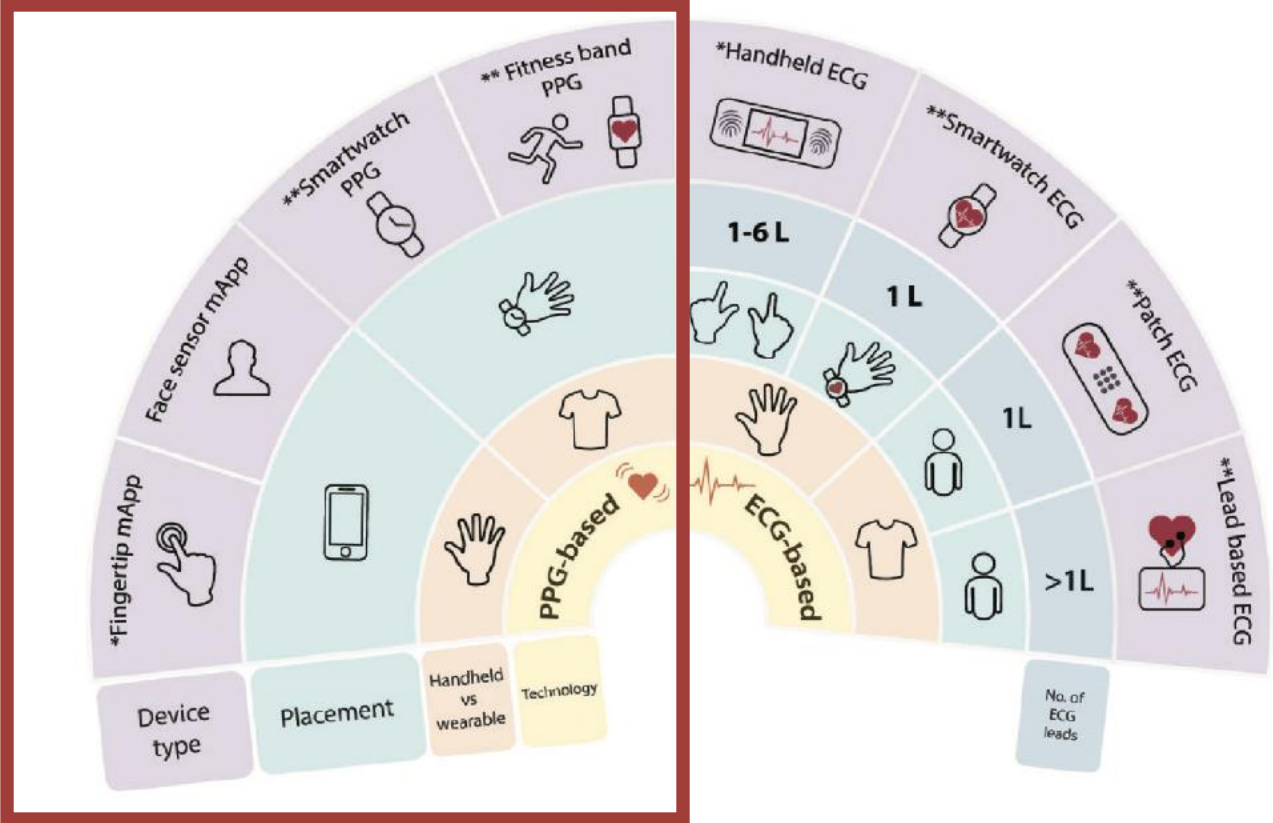
Forutsetninger

1. Helseproblem
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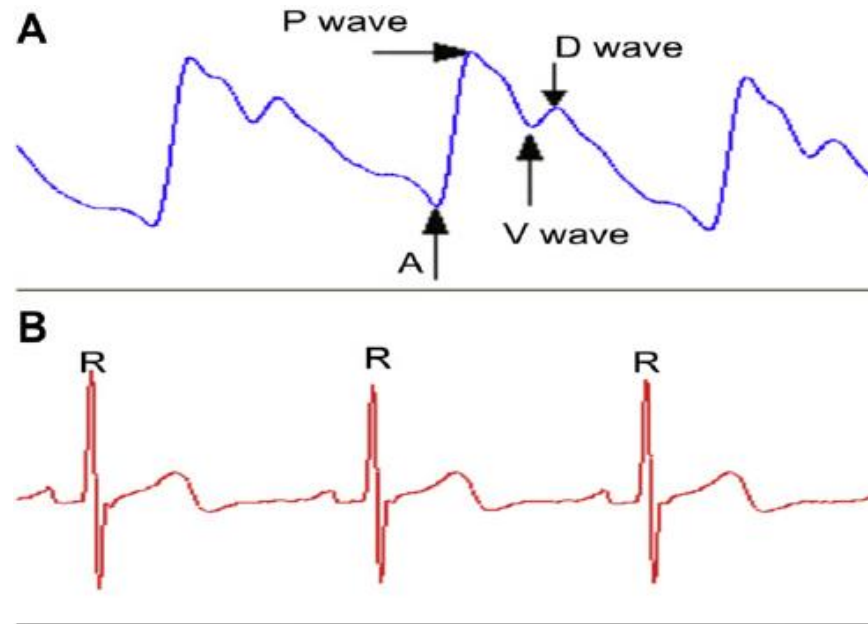
Test

Digital Heart Rhythm Devices for the Clinic

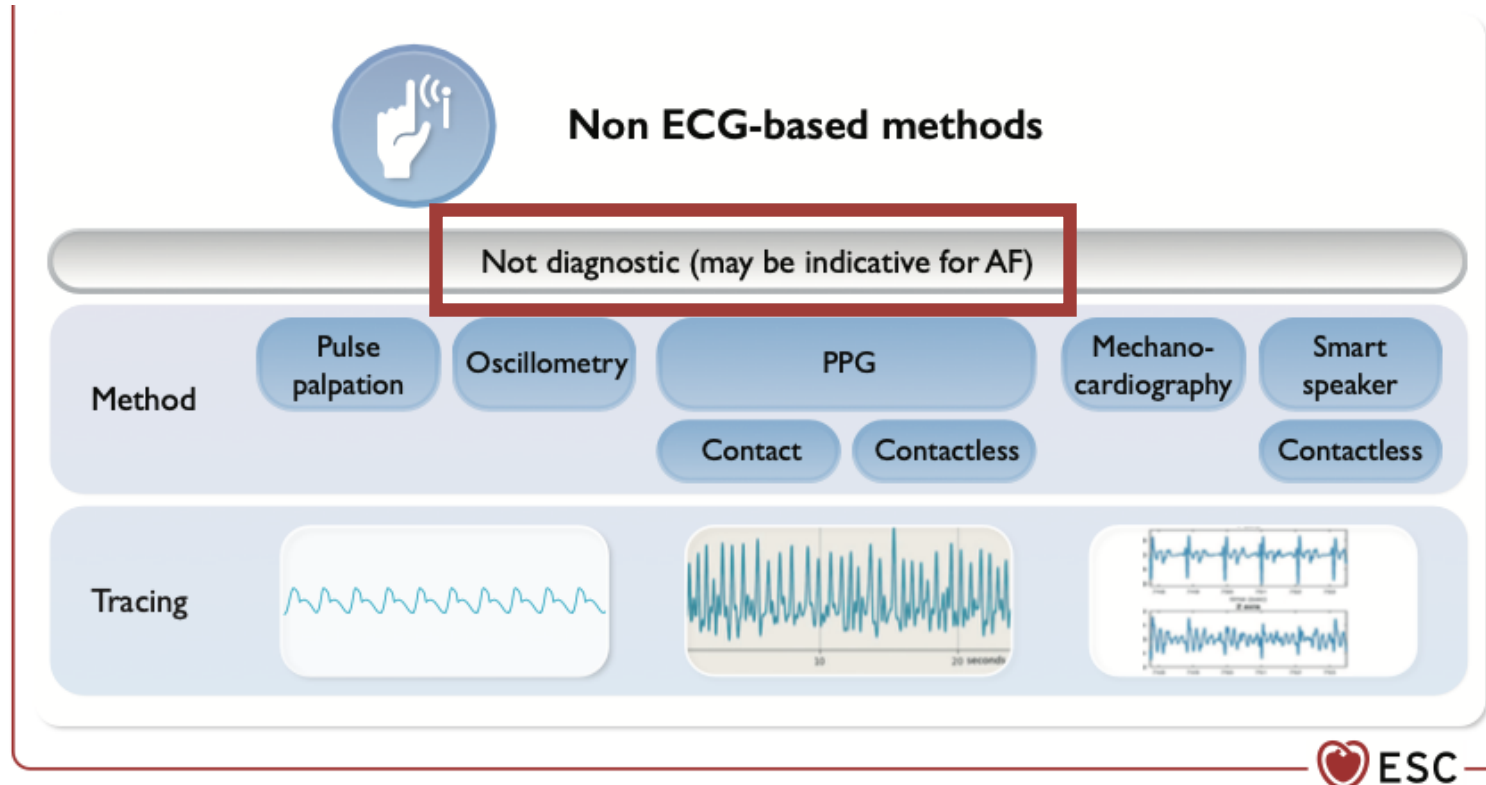


Svennberg E, Tjong F, Goette A, Akoum N, Di Biase L, Bordachar P, Boriani G, Burri H, Conte G, Deharo JC, Deneke T, Drossart I, Duncker D, Han JK, Heidebuchel H, Jais P, de Oliveira Figueiredo MJ, Linz D, Lip GYH, Malaczynska-Rajpold K, Marquez M, Ploem C, Soejima K, Stiles MK, Wierda E, Vernooij K, Leclercq C, Meyer C, Pisani C, Pak HN, Gupta D, Purerfellner H, Crijns H, Chavez EA, Willems S, Waldmann V, Dekker L, Wan E, Kavoor P, Turagam MK, Sinner M. How to use digital devices to detect and manage arrhythmias: an EHRA practical guide. Europace : European pacing, arrhythmias, and cardiac electrophysiology : journal of the working groups on cardiac pacing, arrhythmias, and cardiac cellular electrophysiology of the European Society of Cardiology. 2022.

PPG-basert



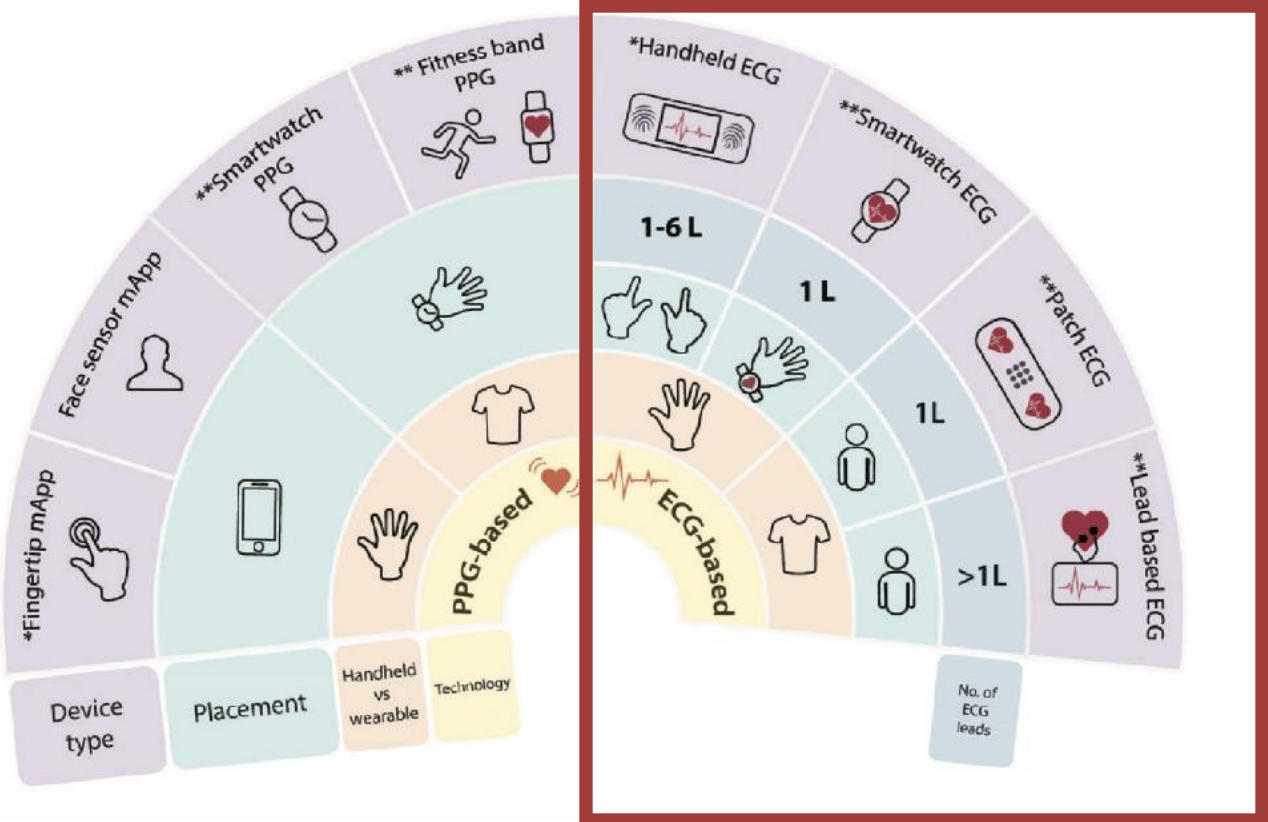
Ikke EKG-baserte metoder



2024 ESC Guidelines for the management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS). Developed by the task force for the management of atrial fibrillation of the European Society of Cardiology (ESC), with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC. Endorsed by the European Stroke Organisation (ESO).
I. C. Van Gelder, M. Rienstra, K. V. Bunting, R. Casado-Aroyo, V. Caso, H. J. G. M. Crijns, et al.
European Heart Journal 2024
DOI: 10.1093/eurheartj/ehae176

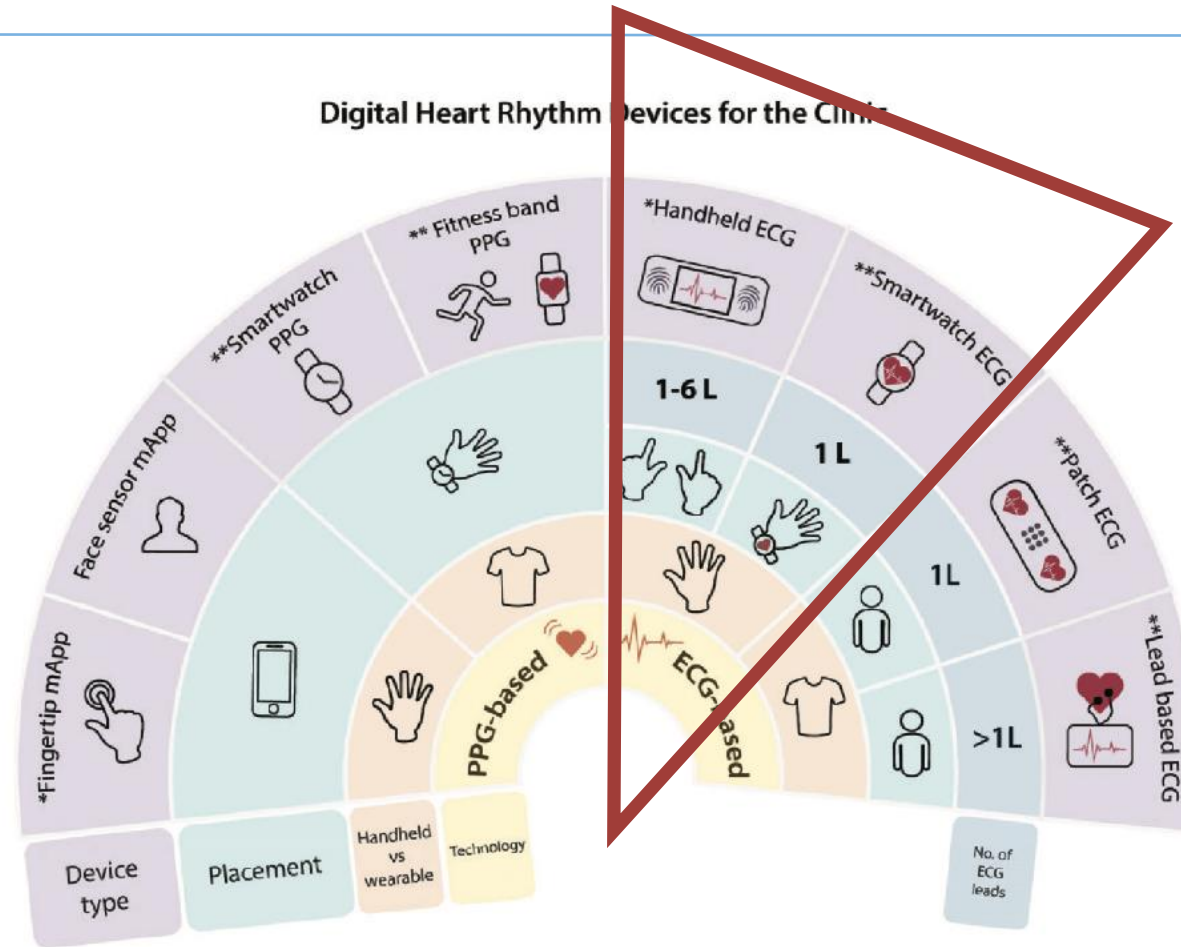
Test

Digital Heart Rhythm Devices for the Clinic



Svennberg E, Tjong F, Goette A, Akoum N, Di Biase L, Bordachar P, Boriani G, Burri H, Conte G, Deharo JC, Deneke T, Drossart I, Duncker D, Han JK, Heidebuchel H, Jais P, de Oliveira Figueiredo MJ, Linz D, Lip GYH, Malaczynska-Rajpold K, Marquez M, Ploem C, Soejima K, Stiles MK, Wierda E, Vernooij K, Leclercq C, Meyer C, Pisani C, Pak HN, Gupta D, Purerfellner H, Crijns H, Chavez EA, Willems S, Waldmann V, Dekker L, Wan E, Kavoor P, Turagam MK, Sinner M. How to use digital devices to detect and manage arrhythmias: an EHRA practical guide. Europace : European pacing, arrhythmias, and cardiac electrophysiology : journal of the working groups on cardiac pacing, arrhythmias, and cardiac cellular electrophysiology of the European Society of Cardiology. 2022.

Test



Svennberg E, Tjong F, Goette A, Akoum N, Di Biase L, Bordachar P, Boriani G, Burri H, Conte G, Deharo JC, Deneke T, Drossart I, Duncker D, Han JK, Heidebuchel H, Jais P, de Oliveira Figueiredo MJ, Linz D, Lip GYH, Malaczynska-Rajpold K, Marquez M, Ploem C, Soejima K, Stiles MK, Wierda E, Vernooij K, Leclercq C, Meyer C, Pisani C, Pak HN, Gupta D, Purerfellner H, Crijns H, Chavez EA, Willems S, Waldmann V, Dekker L, Wan E, Kavoor P, Turagam MK, Sinner M. How to use digital devices to detect and manage arrhythmias: an EHRA practical guide. Europace : European pacing, arrhythmias, and cardiac electrophysiology : journal of the working groups on cardiac pacing, arrhythmias, and cardiac cellular electrophysiology of the European Society of Cardiology. 2022.

Manuelle intermitterende opptak



Manuelle intermitterende opptak



Manuelle intermitterende opptak

CLINICAL INVESTIGATIONS

CLINICAL
CARDIOLOGY WILEY

Intermittent vs continuous electrocardiogram event recording for detection of atrial fibrillation—Compliance and ease of use in an ambulatory elderly population

Tove Fredriksson  | Katrin Kemp Gudmundsdottir | Viveka Frykman |
Leif Friberg | Faris Al-Khalili | Johan Engdahl | Emma Svennberg

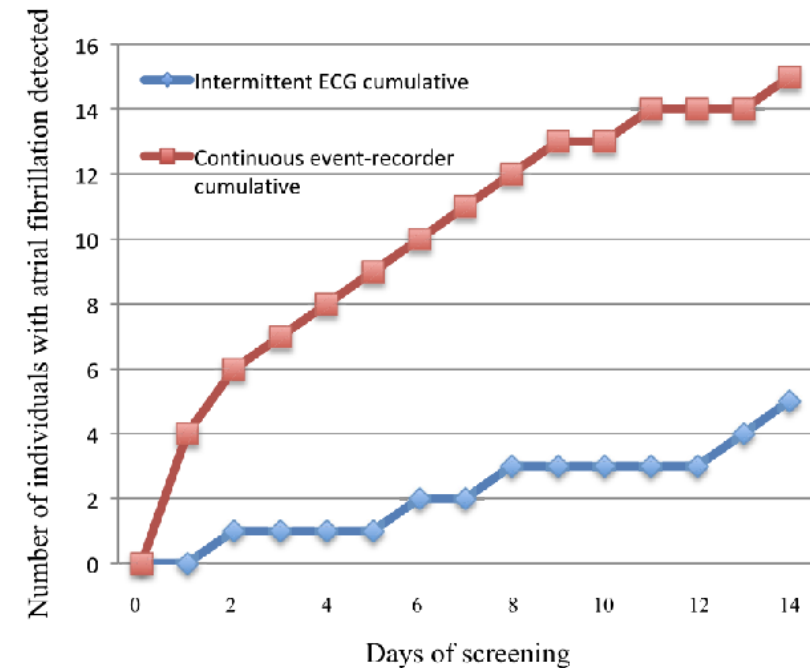
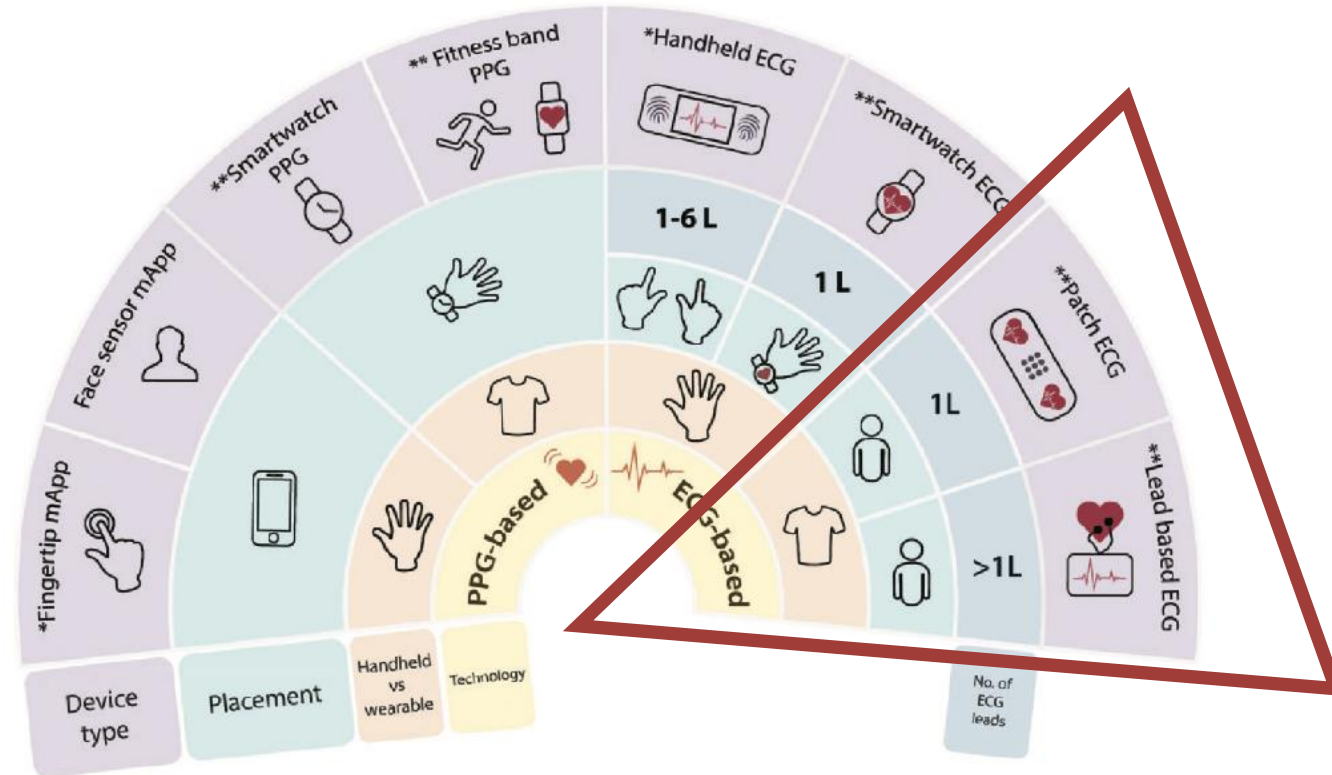


FIGURE 1 Time to first detection of atrial fibrillation per screening method (note that all participants are included in both groups)

Test

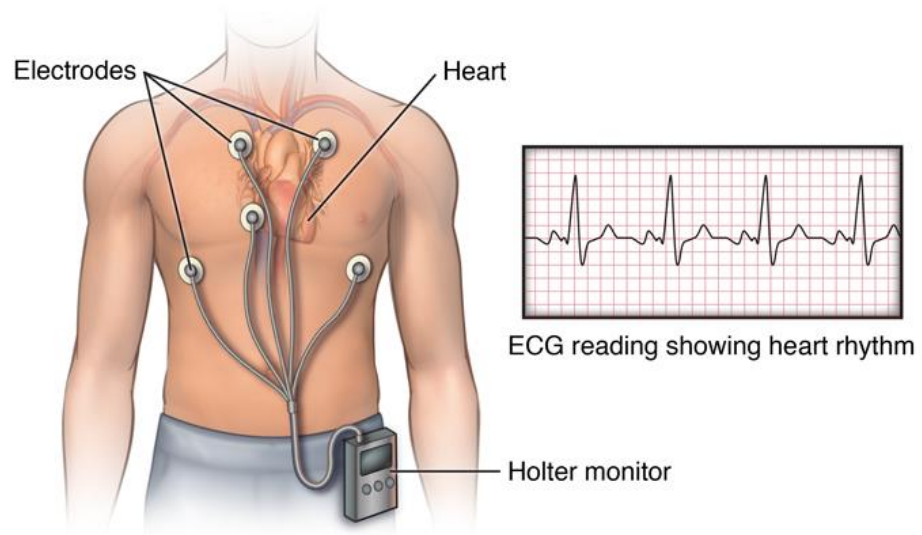
Digital Heart Rhythm Devices for the Clinic



Svennberg E, Tjong F, Goette A, Akoum N, Di Biase L, Bordachar P, Boriani G, Burri H, Conte G, Deharo JC, Deneke T, Drossart I, Duncker D, Han JK, Heidebuchel H, Jais P, de Oliveira Figueiredo MJ, Linz D, Lip GYH, Malaczynska-Rajpold K, Marquez M, Ploem C, Soejima K, Stiles MK, Wierda E, Vernooij K, Leclercq C, Meyer C, Pisani C, Pak HN, Gupta D, Purerfellner H, Crijns H, Chavez EA, Willems S, Waldmann V, Dekker L, Wan E, Kavoor P, Turagam MK, Sinner M. How to use digital devices to detect and manage arrhythmias: an EHRA practical guide. Europace : European pacing, arrhythmias, and cardiac electrophysiology : journal of the working groups on cardiac pacing, arrhythmias, and cardiac cellular electrophysiology of the European Society of Cardiology. 2022.

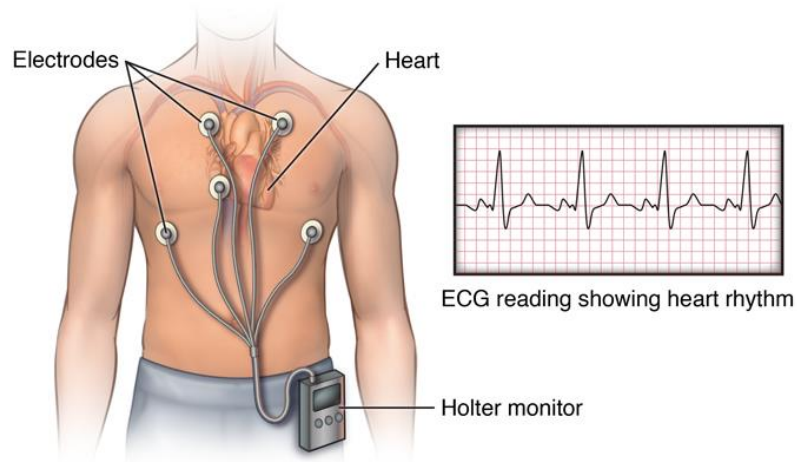
Kontinuerlig EKG overvåking

Holter monitor with ECG reading

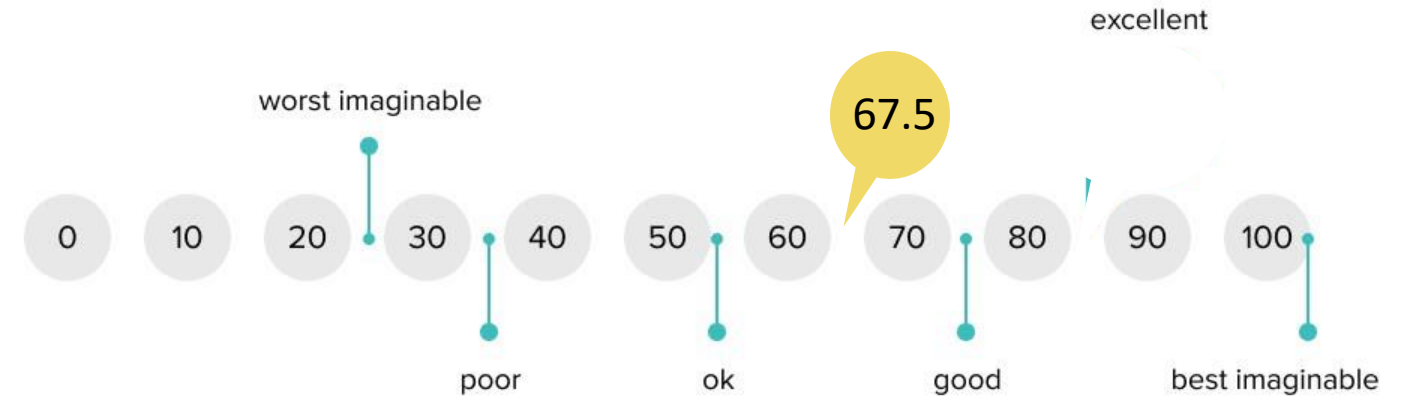


Kontinuerlig EKG overvåking

Holter monitor with ECG reading



System Usability Score



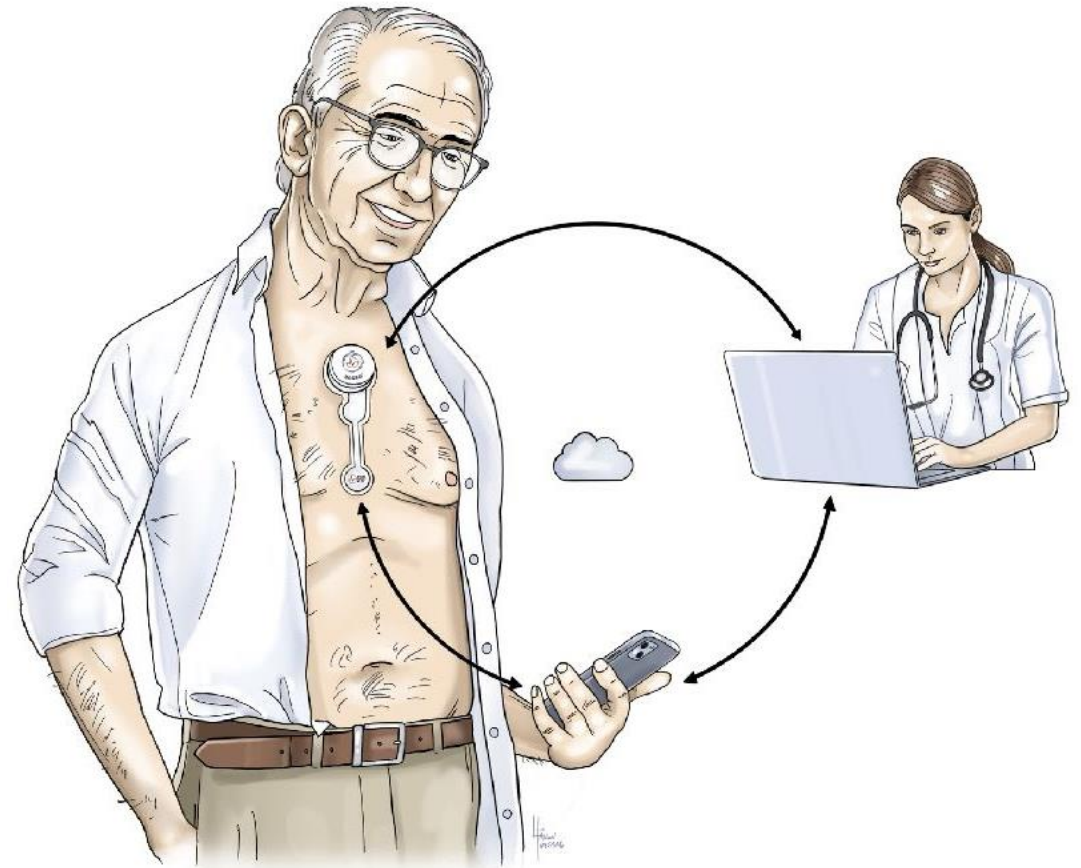
Acceptability Score

Sandberg EL, Grenne BL, Berge T, Grimsmo J, Atar D, Halvorsen S, et al. Diagnostic Accuracy and Usability of the ECG247 Smart Heart Sensor Compared to Conventional Holter Technology. Journal of Healthcare Engineering. 2021;2021:5230947.

THE KISS PRINCIPLE

KEEP
IT
SIMPLE,
STUPID





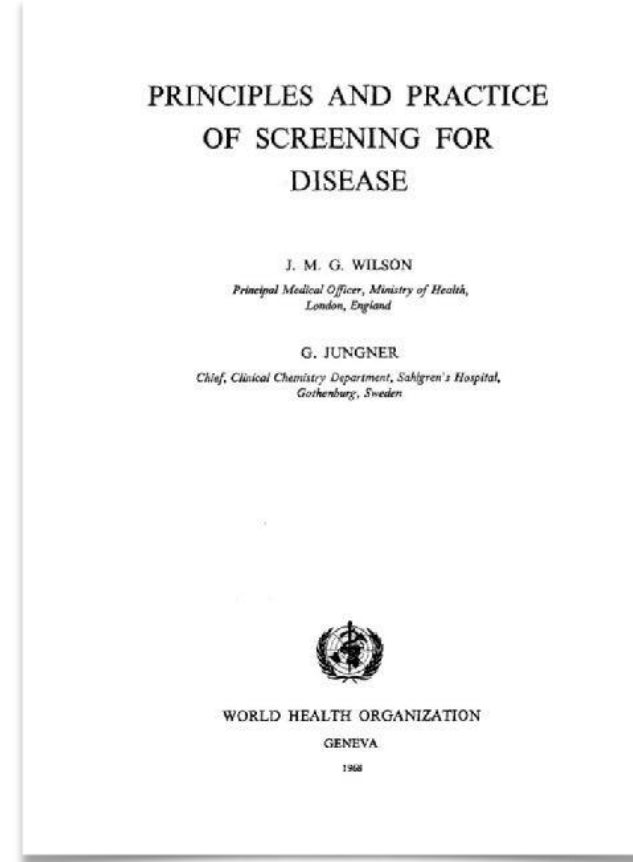
Fredag 18. oktober

Tid	Aktivitet/Tema	Fagområde
08.30–09.30	Workshop 1: Praktisk bruk av ECG247 Workshop 2: Ekkokardiografi ved atrieflimmer Jarle Jortveit og Daniela Melichova	Kardiologi
09.00–09.30	ÅRSMØTE INDBREMDESISINSK FORENING	
09.30–10.10	Bioteknologi i nær fremtid Eirik Tranvåg, lege bioteknologinemda	
10.10–10.40	Vexas Syndrom Ø. Midtvedt, OUS	Revmatologi
10.40–11.00	PAUSE	



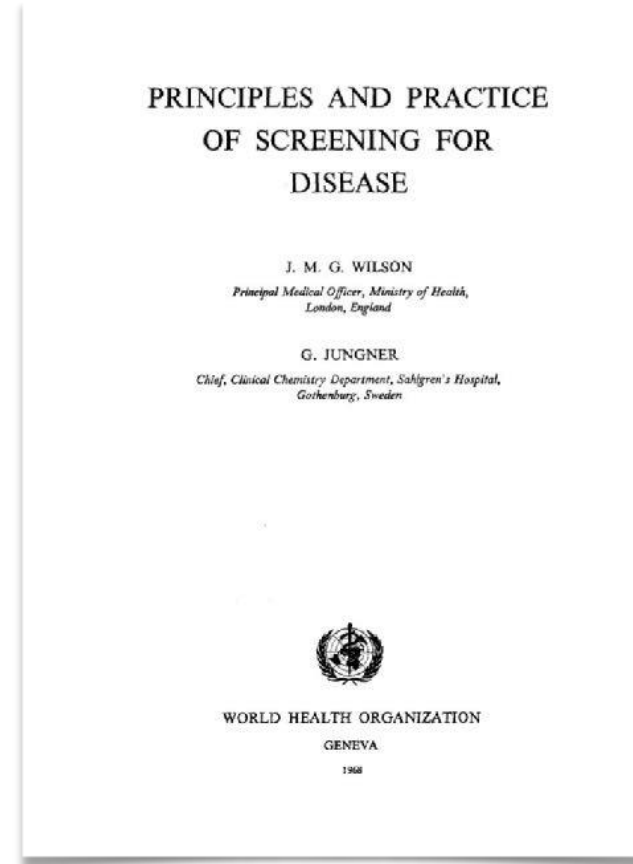
Forutsetninger

1. Helseproblem
2. Test
3. Behandling



Forutsetninger

1. Helseproblem
2. Test
3. Behandling



Behandling

2024 ESC Guidelines for the management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS)

6.2.2. Vitamin K antagonists

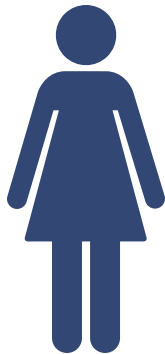
Vitamin K antagonist therapy reduces stroke risk by 64% and mortality by 26% in patients with AF at elevated thromboembolic risk (mostly warfarin in trials, compared with placebo or no treatment).²³⁹

6.2.1. Direct oral anticoagulants

The DOACs (apixaban, dabigatran, edoxaban, and rivaroxaban) have all demonstrated at least non-inferior efficacy compared with warfarin for the prevention of thromboembolism, but with the added benefit of a 50% reduction in intracranial haemorrhage (ICH).^{25–28} Meta-analyses of

Behandling

2024 ESC Guidelines for the management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS)



Recommendation Table 6 — Recommendations to assess and manage thromboembolic risk in AF (see also Evidence Table 6)

Recommendations	Class ^a	Level ^b
Oral anticoagulation is recommended in patients with clinical AF at elevated thromboembolic risk to prevent ischaemic stroke and thromboembolism. ^{239,240}	I	A
A CHA ₂ DS ₂ -VA score of 2 or more is recommended as an indicator of elevated thromboembolic risk for decisions on initiating oral anticoagulation.	I	C
Oral anticoagulation is recommended in all patients with AF and hypertrophic cardiomyopathy or cardiac amyloidosis, regardless of CHA ₂ DS ₂ -VA score, to prevent ischaemic stroke and thromboembolism. ^{270–276}	I	B
Individualized reassessment of thromboembolic risk is recommended at periodic intervals in patients with AF to ensure anticoagulation is started in appropriate patients. ^{277–280}	I	B

Continued

A CHA₂DS₂-VA score of 1 should be considered an indicator of elevated thromboembolic risk for decisions on initiating oral anticoagulation.

Ila	C
-----	---

Direct oral anticoagulant therapy may be considered in patients with asymptomatic device-detected subclinical AF and elevated thromboembolic risk to prevent ischaemic stroke and thromboembolism, excluding patients at high risk of bleeding.^{281,282}

Ilb	B
-----	---

Antiplatelet therapy is not recommended as an alternative to anticoagulation in patients with AF to prevent ischaemic stroke and thromboembolism.^{242,283}

III	A
-----	---

Using the temporal pattern of clinical AF (paroxysmal, persistent, or permanent) is not recommended to determine the need for oral anticoagulation.^{284,285}

III	B
-----	---

AF, atrial fibrillation; CHA₂DS₂-VA, congestive heart failure, hypertension, age ≥75 years (2 points), diabetes mellitus, prior stroke/transient ischaemic attack/arterial thromboembolism (2 points), vascular disease, age 65–74 years; DOAC, direct oral anticoagulant.

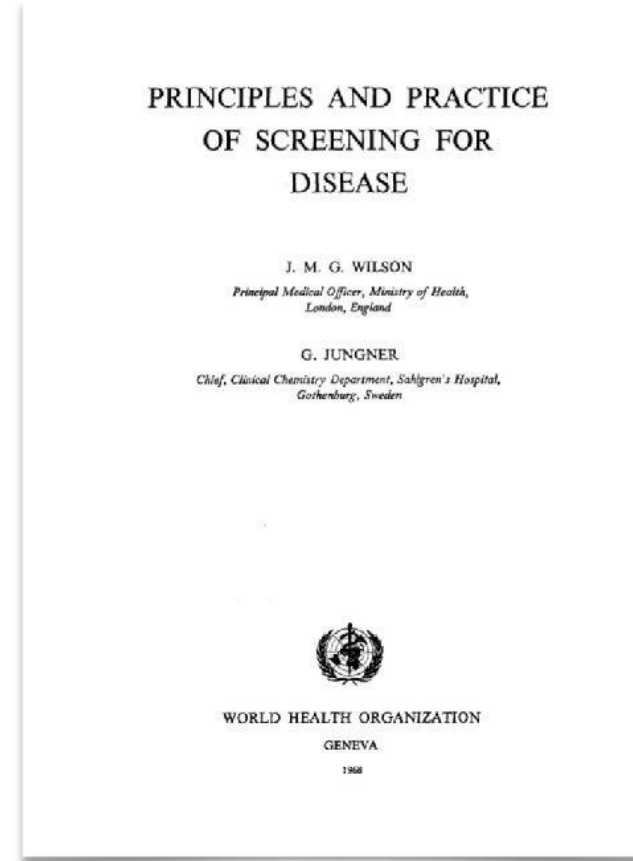
^aClass of recommendation.

^bLevel of evidence.

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Forutsetninger

1. Helseproblem
2. Test
3. Behandling



Men.....

STROKESTOP



- 75-76 år
- 13979 (kun halvparten deltok)
- Tommel-EKG 30 s x2 i 14 dager
- AF prevalens fra 12.1% til 14.0%
- 5 års oppfølging
- Slag HR 0.76 (0.68-0.97)
- NNS for å unngå slag, systemisk emboli, alvorlig blødning og død: 91

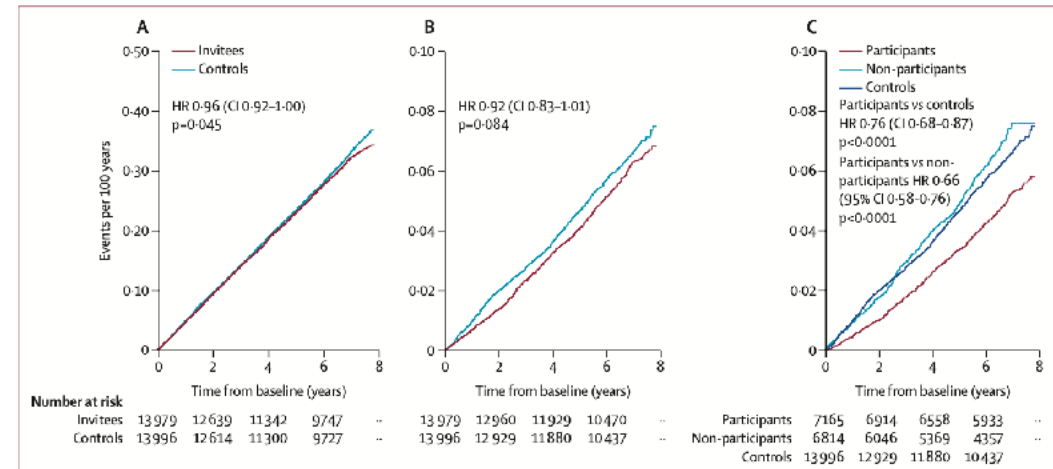
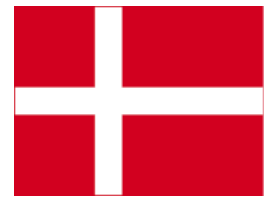
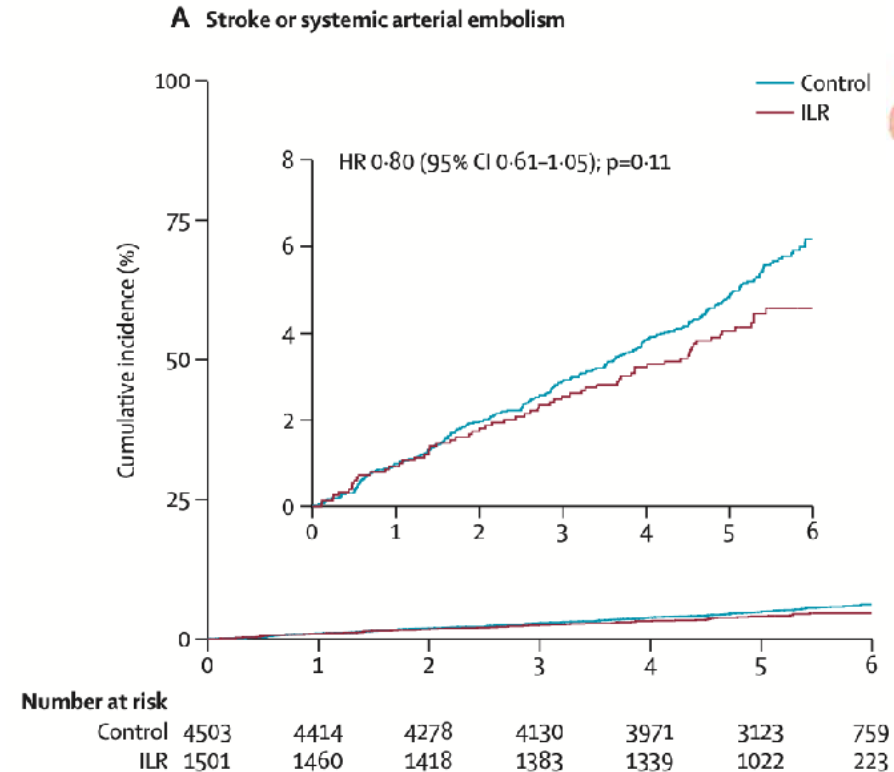


Figure 2: Events per 100 years for the composite primary endpoint and the secondary endpoint of ischaemic stroke
(A) Events per 100 years for the primary endpoint of ischaemic or haemorrhagic stroke, systemic embolism, major bleeding leading to hospitalisation, or death from any cause in all randomly assigned individuals (regardless of participation). (B) Events per 100 years for the secondary endpoint of ischaemic stroke in all randomly assigned individuals. (C) Events per 100 years in the unadjusted analysis of the secondary endpoint of ischaemic stroke in individuals choosing to participate in the screening programme compared with non-participants and the control group. HR=hazard ratio.

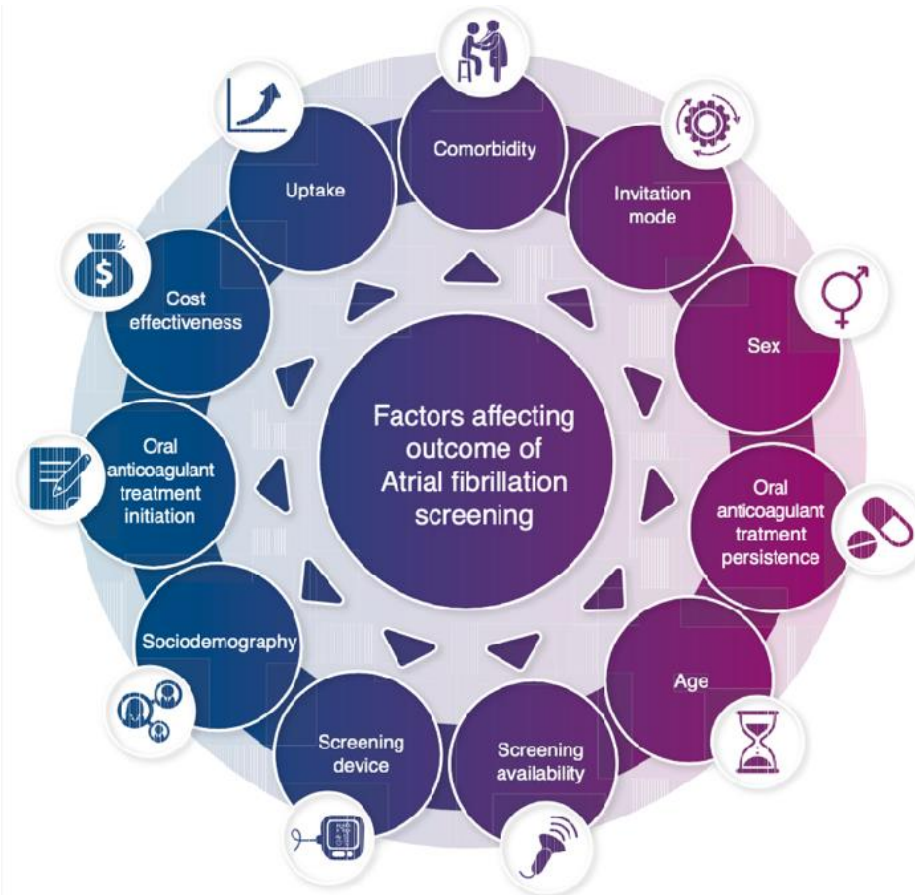
LOOP



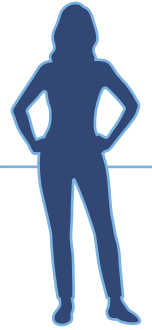
- 6004 deltakere
- 1501 ILR
- 75 år
- 64.5 mnd oppfølging
- AF 32% vs 12%
- Antikoagulasjon ved AF >6 min
- Slag (og systemisk emboli)
 - ILR: 4.5%
 - Kontroll: 5.6%



Faktorer ved AF screening



Screening for atrial fibrillation: all invitees are equal, but some are more equal than others?
J. Engdahl, K. K. Gudmundsdottir and M. Rosenqvist
Europace 2023 Vol. 25 Issue 5
Accession Number: 37 191126 PMID: PMC10228680 DOI: 10.1093/europace/euad133
<https://www.ncbi.nlm.nih.gov/pubmed/37191126>



Dagens Medicin

Hjärta-kärl

Nedslående resultat för strokeförebyggande screening

Publicerad: 1 september 2024, 18:50



Katrin Kemp Gudmundsdóttir är studiens försteförfattare, och presenterade fynden i London.
Foto: Getty Images, Privat bild

Att screena äldre för dolt förmaksflimmer med hjälp av EKG och en biomarkör minskar inte risken för stroke eller systemisk emboli. Det visar
fynd från den svenska studien Strokestop 2.


Vis meny

Pro-BNP

Randomized Invitation to Systematic NT-proBNP and ECG Screening in 75-Year Olds to Detect Atrial Fibrillation - STROKESTOP II
K. Kemp Gudmundsdóttir, E. Svennberg, L. Friberg, T. Hygrett, V. Frykman, F. Al-Khalil, et al.
Circulation. Vol. 0 Issue 0
DOI: doi:10.1161/CIRCULATIONAHA.124.071176
<https://www.ahajournals.org/doi/abs/10.1161/CIRCULATIONAHA.124.071176>

The Norwegian AF self-screening pilot trial











 **ESC**
European Society
of Cardiology

Europace (2023) 00, 1–11
<https://doi.org/10.1093/europace/euad075>

CLINICAL RESEARCH

Fully digital self-screening for atrial fibrillation with patch electrocardiogram

Edvard Liljedahl Sandberg ^{1*}, Sigrun Halvorsen ^{2,3}, Trygve Berge ⁴,
Jostein Grimsmo ⁵, Dan Atar ^{2,3}, Rune Fensli ⁶, Bjørnar Leangen Grenne ^{7,8},
and Jarle Jortveit ¹

¹Department of Cardiology, Sorlandet Hospital, Postboks 416 Lundsiden, 4604 Arendal, Norway; ²Department of Cardiology, Oslo University Hospital Ullevaal, Oslo, Norway; ³Institute of Clinical Medicine, University of Oslo, Oslo, Norway; ⁴Department of Medical Research and Department of Internal Medicine, Vestre Viken Hospital Trust, Baerum Hospital, Rud, Norway; ⁵Department of Cardiac Rehabilitation, LHL-hospital Gardermoen, Jessheim, Norway; ⁶Faculty of Engineering and Science, University of Agder, Grimstad, Norway; ⁷Clinic of Cardiology, St. Olavs Hospital, Trondheim, Norway; and ⁸Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway

Received 29 December 2022; accepted after revision 23 February 2023

Aims Atrial fibrillation (AF) is the most common arrhythmia worldwide. The AF is associated with severe mortality, morbidity, and healthcare costs, and guidelines recommend screening people at risk. However, screening methods and organization still need to be clarified. The current study aimed to assess the feasibility of a fully digital self-screening procedure and to assess the prevalence of undetected AF using a continuous patch electrocardiogram (ECG) monitoring system.

Methods and results Individuals ≥65 years old with at least one additional risk factor for stroke from the general population of Norway were invited to a fully digital continuous self-screening for AF using a patch ECG device (ECG247 Smart Heart Sensor). Participants self-reported clinical characteristics and usability online, and all participants received digital feedback of their results. A total of 2118 individuals with a mean CHA₂DS₂-VASC risk score of 2.6 (0.9) were enrolled in the study [74% women; mean age 70.1 years (4.2)]. Of these, 1849 (87.3%) participants completed the ECG self-screening test, while 215 (10.2%) did not try to start the test and 54 (2.5%) failed to start the test. The system usability score was 84.5. The mean ECG monitoring time was 153 h (87). Atrial fibrillation was detected in 41 (2.2%) individuals.

Conclusion This fully digitalized self-screening procedure for AF demonstrated excellent feasibility. The number needed to screen was 45 to detect one unrecognized case of AF in subjects at risk for stroke. Randomized studies with long-term follow-up are needed to assess whether self-screening for AF can reduce the incidence of AF-related complications.

Clinical trials NCT04700865

Downloaded from <https://academic.oup.com/europace/advance-article/doi/10.1093/europace/euad075/70>

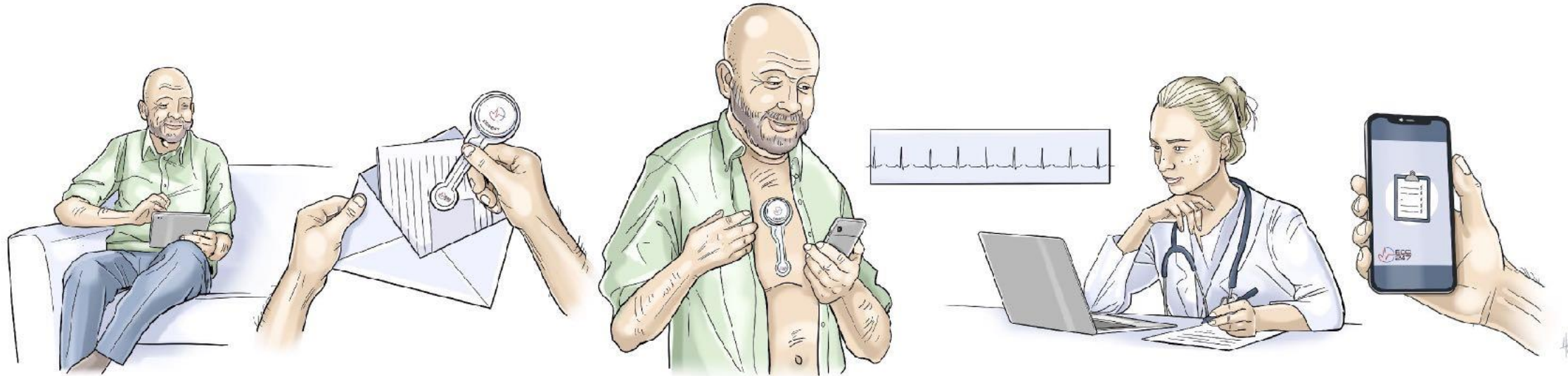
The Norwegian AF self-screening pilot trial



2118

87%

1:45



The Norwegian AF self-screening pilot trial



DIGITAL RECRUITMENT AND COMPLIANCE TO TREATMENT RECOMMENDATIONS

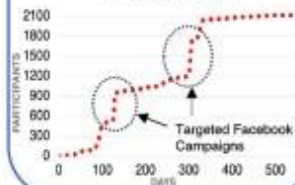
The Norwegian Atrial Fibrillation Self-Screening Pilot Study

Aims: To evaluate the digital invitation and the recruitment procedure in an atrial fibrillation (AF) screening trial, and to evaluate the compliance with the follow-up recommendations in study participants with screen-detected AF.

Digital recruitment and inclusion



Participants: 2118
Mean age: 70 (± 4) years
Women: 74%



Digital screening for atrial fibrillation



Performed ECG test:
1849 (87%)
participants

Atrial fibrillation:
41 (2.2%)
participants



Compliance to treatment recommendations

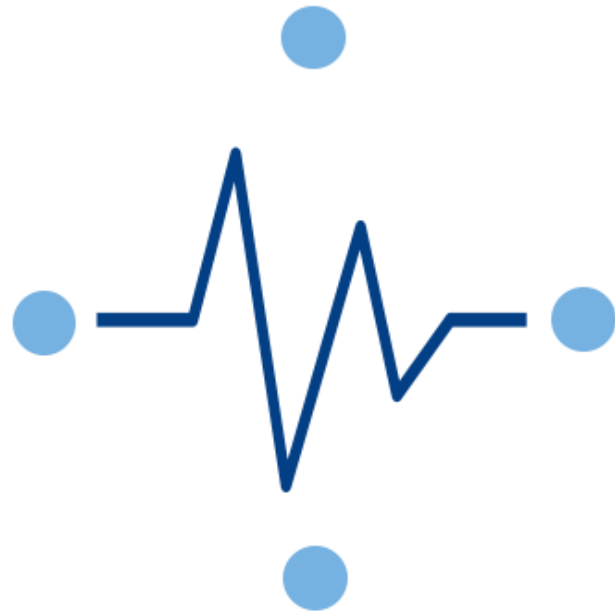


General practitioner:
39 (95%)
participants with AF

Anticoagulation therapy:
34 (83%)
participants with AF

Conclusions: Digital invitation, recruitment and follow-up in a fully digital AF self-screening procedure and initiating anticoagulation therapy in AF-positive cases is feasible. Facebook posts were the most effective recruitment method. Digital recruitment and inclusion may introduce selection biases regarding age and gender.

Sandberg EL, Halvorsen S, Berge T, Grimsmo J, Atar D, Leangen Grenne B, Jortveit J. Digital recruitment and compliance to treatment recommendations in the Norwegian Atrial Fibrillation self-screening pilot study. *Eur Heart J Digit Health*. 2024 Apr 9;5(3):371-378. doi: 10.1093/ehjdh/ztae026. PMID: 38774377; PMCID: PMC11104466.



NORSCREEN

The Norwegian atrial fibrillation self-screening trial



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Europace (2024) 00, euae228

<https://doi.org/10.1093/europace/euae228>

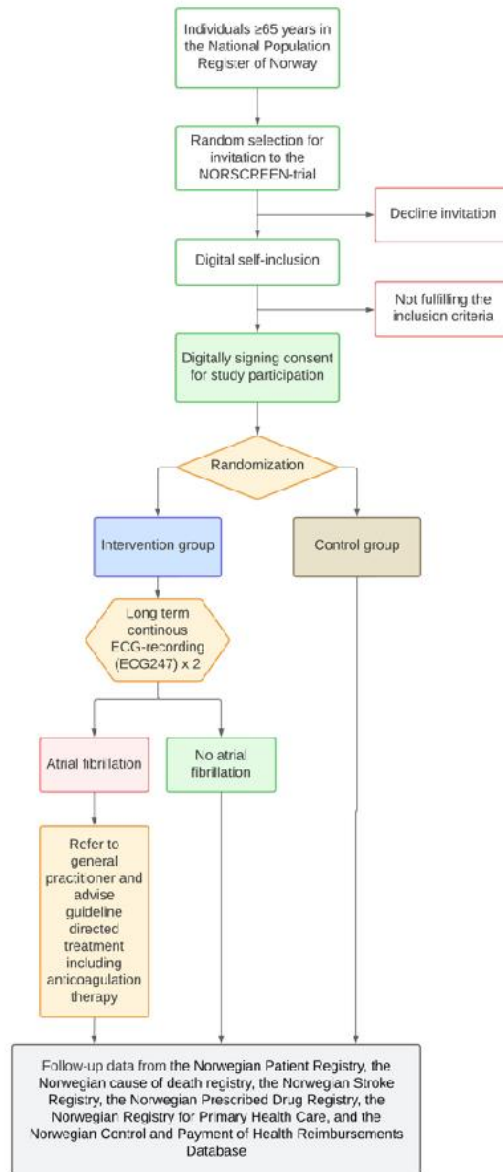
TRIAL DESIGN

The NORwegian atrial fibrillation self-SCREENing (NORSCREEN) trial: rationale and design of a randomized controlled trial

Miroslav Boskovic ^{1,2}, Jarle Jortveit ³, Marius Blørstad Haraldsen⁴,
Trygve Berge ^{4,5,6}, Johan Engdahl ⁷, Maja-Lisa Løchen ^{8,9},
Peter Schuster ^{10,11}, Edvard Liljedahl Sandberg ³, Jostein Grimsmo ^{12,13},
Dan Atar ^{4,14}, Ole-Gunnar Anfinsen ¹⁵, Are Hugo Pripp ¹⁶,
Bjørnar Leangen Grenne ^{17,18}, and Sigrun Halvorsen ^{4,14*}



35 000 deltakere



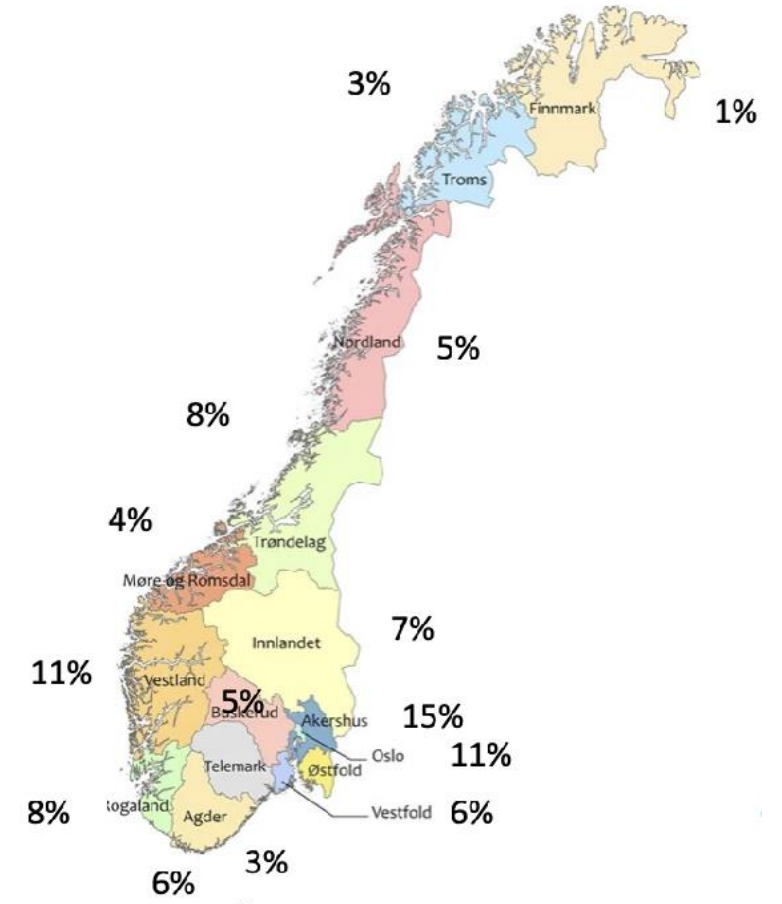
20 200 deltakere

52%



48%

Mean age 73 (\pm 5) years





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The SAFER Trial – Screening for Atrial Fibrillation with ECG to Reduce stroke

A programme of research investigating screening to detect atrial fibrillation, a heart condition responsible for one in ten strokes

Here you can find out more about our programme of research.



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Tweets by @SAFER_Study

SAFER Trial Retweeted
 Primary Care Unit @PCJ_Cambridge
 11 ways to embed qualitative research in a clinical trial, from the @SAFER_Study team
 Summary: <https://doi.org/10.1186/s12874-021-01111-1>

Article:
<https://doi.org/10.1186/s12874-021-01111-1>
 @SarahMcCauley @rae_todd @NIH-evidence @CambsFloorCCG @NIHFCRNeuro

11 ways to embed qualitative research in a trial

- Recruit qualified team members
- Qualitative research is a team effort
- Qualitative research is embedded within the trial
- Qualitative research is a continuous process
- Qualitative research is for the qualitative research
- Qualitative research is a team effort
- Qualitative research is embedded within the trial
- Qualitative research is a continuous process
- Qualitative research is for the qualitative research
- Qualitative research is a team effort
- Qualitative research is embedded within the trial
- Qualitative research is a continuous process
- Qualitative research is for the qualitative research



CLINICAL RESEARCH

Reliability of single-lead electrocardiogram interpretation to detect atrial fibrillation: insights from the SAFER feasibility study

Katie Hibbitt¹, James Brimicombe¹, Martin R. Cowie², Andrew Dymond¹, Ben Freedman³, Simon J. Griffin¹, FD Richard Hobbs⁴, Hannah Clair Lindén⁵, Gregory Y. H. Lip^{6,7}, Jonathan Mant¹, Richard J. McManus⁴, Madhumitha Pandiaraja¹, Kate Williams¹, and Peter H. Charlton^{1*}

Conclusion

Inter-rater reliability of AF diagnosis from single-lead ECGs was found to be moderate in older adults. Strategies to improve reliability might include participant and cardiologist training and designing AF detection programmes to obtain sufficient ECGs for reliable diagnoses.



?



Per 75 år

- Tidligere sykdommer
 - Hypertensjon
 - Diabetes
- Medikamenter
 - Lisinopril 10 mg x 1
 - Metformin 1000 mg x 1
- Aktuelt
 - Rutinekontroll hos fastlege
 - **Ingen symptomer**
 - God fysisk form



Subklinisk AF

Circulation

Volume 149, Issue 13, 26 March 2024; Pages 981-988
<https://doi.org/10.1161/CIRCULATIONAHA.123.067512>



ORIGINAL RESEARCH ARTICLE

Direct Oral Anticoagulants for Stroke Prevention in Patients With Device-Detected Atrial Fibrillation: A Study-Level Meta-Analysis of the NOAH-AFNET 6 and ARTESiA Trials

Conclusions: The results of the NOAH-AFNET 6 and ARTESiA trials are consistent with each other. Meta-analysis of these 2 large randomized trials provides high-quality evidence that oral anticoagulation with edoxaban or apixaban reduces the risk of stroke in patients with device-detected atrial fibrillation and increases the risk of major bleeding.

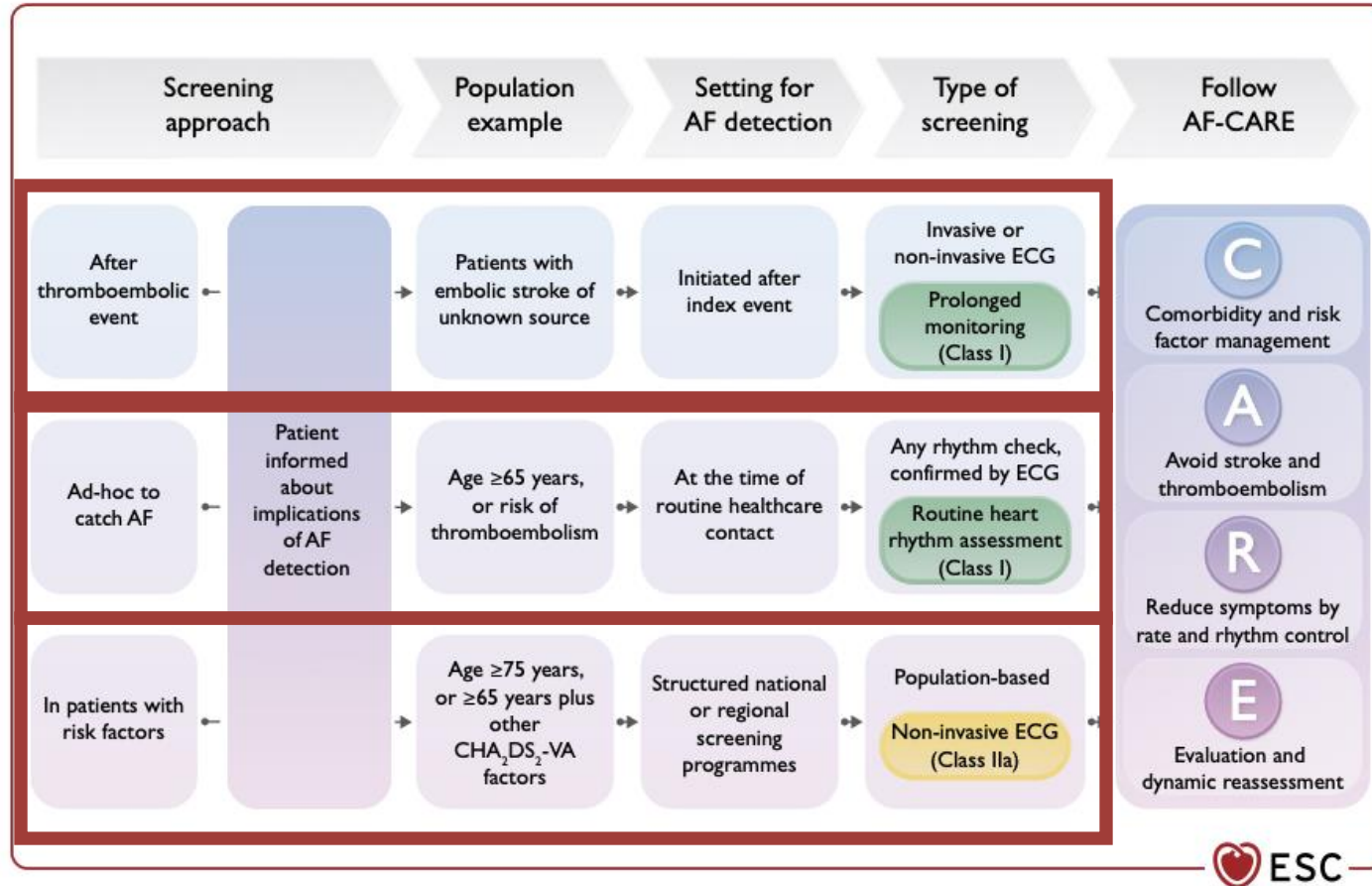
Direct Oral Anticoagulants for Stroke Prevention in Patients With Device-Detected Atrial Fibrillation: A Study-Level Meta-Analysis of the NOAH-AFNET 6 and ARTESiA Trials
W. F. McIntyre, A. P. Benz, N. Becher, J. S. Healey, C. B. Granger, L. Rivard, et al.
Circulation 2024 Vol. 149 Issue 13 Pages 981-988
Accession Number: 37952187 DOI: 10.1161/CIRCULATIONAHA.123.067512
<https://www.ncbi.nlm.nih.gov/pubmed/37952187>

AF varighet

**2024 ESC Guidelines for the management
of atrial fibrillation developed in collaboration
with the European Association
for Cardio-Thoracic Surgery (EACTS)**

«The burden needed for device-detected subclinical AF to translate into stroke risk is not known, and further studies are clearly needed.»

ESC guidelines 2023



2024 ESC Guidelines for the management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS). Developed by the task force for the management of atrial fibrillation of the European Society of Cardiology (ESC), with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC. Endorsed by the European Stroke Organisation (ESO).
 I. C. Van Gelder, M. Rienstra, K. V. Bunting, R. Casado-Aroyo, V. Caso, H. J. G. M. Crijns, et al.
 European Heart Journal 2024
 DOI: 10.1093/eurheartj/ehae176

Bevar ditt hjerte fremfor alt du bevarer, for livet går ut fra det!

Salomos ordspråk 4:23

