

ORIGINAL ARTICLE

Five-Year Outcomes of the Danish Cardiovascular Screening (DANCAVAS) Trial

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ABSTRACT

BACKGROUND

Limited data suggest a benefit of population-based screening for cardiovascular disease with respect to the risk of death.

METHODS

We performed a population-based, parallel-group, randomized, controlled trial involving men 65 to 74 years of age living in 15 Danish municipalities. The participants were randomly assigned in a 1:2 ratio to undergo screening (the invited group) or not to undergo screening (the control group) for subclinical cardiovascular disease. Randomization was based on computer-generated random numbers and stratified according to municipality. Only the control group was unaware of the trial-group assignments. Screening included noncontrast electrocardiography-gated computed tomography to determine the coronary-artery calcium score and to detect aneurysms and atrial fibrillation, ankle-brachial blood-pressure measurements to detect peripheral artery disease and hypertension, and a blood sample to detect diabetes mellitus and hypercholesterolemia. The primary outcome was death from any cause.

RESULTS

A total of 46,611 participants underwent randomization. After exclusion of 85 men who had died or emigrated before being invited to undergo screening, there were 16,736 men in the invited group and 29,790 men in the control group; 10,471 of the men in the invited group underwent screening (62.6%). In intention-to-treat analyses, after a median follow-up of 5.6 years, 2106 men (12.6%) in the invited group and 3915 men (13.1%) in the control group had died (hazard ratio, 0.95; 95% confidence interval [CI], 0.90 to 1.00; $P=0.06$). The hazard ratio for stroke in the invited group, as compared with the control group, was 0.93 (95% CI, 0.86 to 0.99); for myocardial infarction, 0.91 (95% CI, 0.81 to 1.03); for aortic dissection, 0.95 (95% CI, 0.61 to 1.49); and for aortic rupture, 0.81 (95% CI, 0.49 to 1.35). There were no significant between-group differences in safety outcomes.

CONCLUSIONS

After more than 5 years, the invitation to undergo comprehensive cardiovascular screening did not significantly reduce the incidence of death from any cause among men 65 to 74 years of age. (Funded by the Southern Region of Denmark and others; DANCAVAS ISRCTN Registry number, ISRCTN12157806.)

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This article was published on August 27, 2022, at NEJM.org.

N Engl J Med 2022;387:1385-94.

DOI: 10.1056/NEJMoa2208681

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ALTHOUGH THE INCIDENCE OF CARDIOVASCULAR disease has decreased over the past few decades, it remains a leading cause of death and a health care challenge.^{1,2} However, it is estimated that 80% of cardiac events and strokes are preventable, and 25 to 75% may be prevented through early detection and intervention.¹ Therefore, strategies to prevent ischemic events in the brain, heart, and legs and their disabling sequelae have great potential to improve public health.

The identification of patients at increased risk who may benefit from intensified preventive measures has been recognized as a major priority for decades³ by the U.S. Preventive Services Task Force and others. However, evidence has been lacking to support population-based screening.⁴ More recently, the Viborg Vascular (VIVA) screening trial showed that an invitation to undergo combined screening for abdominal aortic aneurysm, peripheral artery disease, and hypertension resulted in a 7% relative reduction in the overall risk of death among men who were 65 to 74 years of age and provided a proof of concept.⁵ In the population-based Danish Cardiovascular Screening (DANCAVAS) trial, we expanded this combined screening to include screening for seven conditions. We investigated the effects of inviting men to undergo comprehensive, advanced cardiovascular screening on the incidences of death and cardiovascular events.^{6,7}

METHODS

TRIAL DESIGN

In this multicenter, parallel-group, randomized, controlled trial, outcomes in participants who were invited to undergo comprehensive cardiovascular screening were compared with those in a control group of participants who were not invited. The trial was initiated in September 2014, and enrollment was completed in September 2017. The trial was approved by the Southern Denmark Region Committee on Biomedical Research Ethics and the Danish Data Protection Agency. Both the trial protocol, available with the full text of this article at NEJM.org, and a report of baseline findings in participants in the invited group who underwent screening have been published previously.^{6,7} The institutional review board did not require consent from con-

trol participants. The first author vouches for the accuracy and completeness of the data and for the fidelity of the trial to the protocol.

PARTICIPANTS

A total of 46,611 men 65 to 74 years of age who were living in 15 selected municipalities in the southern and central regions of Denmark were included in the trial. During the enrollment period, these participants were representative of the male Danish population. Additional details are provided in the Supplemental Methods section and Table S8 in the Supplementary Appendix, available at NEJM.org.

RANDOMIZATION AND BLINDING

Personal identification numbers, names, addresses, and municipalities were extracted from the Danish National Central Person Registry. A computer-based algorithm was used to assign random numbers from 1 to 100 to the list of identification numbers. The numbers from 68 to 100 were allocated to screening, and the numbers from 1 to 67 to no screening. The randomization procedure was stratified according to geographic area (i.e., the 15 selected municipalities) because sociodemographic factors, the percentage of participants who would accept the invitation to undergo screening after being invited to do so, and disease prevalence were expected to differ across areas; this procedure was intended to minimize the time between randomization and invitation. Immediately after randomization, the trial-group assignments were concealed because participants in the invited group were then invited by email to undergo screening.

It was not possible to prevent the invited group or the screening teams from becoming aware of the trial-group assignments. Participants in the control group were not notified about the trial and thus were fully unaware of these assignments, as was the investigator who was responsible for data management and statistical analysis.

SCREENING, POSITIVE FINDINGS, AND PREVENTIVE ACTIONS

The screening program included noncontrast electrocardiography-gated computed tomography to detect a coronary-artery calcium score that was

Table 1. Definitions of Positive Findings and Recommended Preventive Actions.*

Criteria for Positive Finding	Recommended Action
Increased coronary-artery calcification (coronary-artery calcium score greater than the median sex- and age-specific score)	Provide recommendations regarding general cardiovascular prevention† Provide referral to cardiology department if angina pectoris is suspected
Ascending aortic aneurysm ≥ 45 mm in maximal diameter at the site where the anterior–posterior and transverse diameters are equivalent on axial CT	Provide recommendations regarding general cardiovascular prevention† If ≥ 55 mm, provide referral for surgical evaluation If ≥ 50 mm, perform echocardiography to detect bicuspid aortic valve; if not detected, perform annual control CT, and if detected, provide referral for surgical evaluation If 45–49 mm, assess with CT after 5 yr
Aortic arch aneurysm ≥ 40 mm on axial CT	Provide recommendations regarding general cardiovascular prevention† If ≥ 55 mm, provide referral for surgical evaluation If < 55 mm, perform annual control CT
Descending aortic aneurysm ≥ 35 mm on axial CT	Provide recommendations regarding general cardiovascular prevention† If ≥ 55 mm, provide referral for surgical evaluation If 45–54 mm, perform annual control CT If 35–44 mm, perform control CT every second yr
Abdominal aortic aneurysm ≥ 30 mm on axial CT	Provide recommendations regarding general cardiovascular prevention† If ≥ 55 mm, provide referral for surgical evaluation If 50–54 mm, perform control CT twice a year If 45–49 mm, perform annual control CT If 30–44 mm, perform control CT every second yr
Iliac aneurysm ≥ 20 mm on axial CT	Provide recommendations regarding general cardiovascular prevention† If ≥ 35 mm, provide referral for surgical evaluation If 30–34 mm, perform annual control CT If 20–29 mm, perform control CT every second yr
Peripheral artery disease (ankle–brachial blood-pressure index value ≤ 0.90 or > 1.40)	Provide recommendations regarding general cardiovascular prevention† Provide instructions regarding walking exercise Provide referral to vascular surgical department if critical limb ischemia suspected because of pain at rest, ulcers, or gangrene
Atrial fibrillation (irregular rhythm on ECG-gated monitor)	Confirm by 12-lead ECG If not confirmed, no action If confirmed, provide referral for cardiac evaluation and initiate anticoagulant medication (unless contraindicated)
Potential hypertension (systolic blood pressure ≥ 160 mm Hg or diastolic blood pressure ≥ 100 mm Hg)	Provide referral to general practitioner for confirmation and treatment
Suspected diabetes mellitus (glycated hemoglobin level ≥ 48 mmol/mole)	Provide referral to general practitioner for confirmation and treatment
Hypercholesterolemia (total cholesterol level ≥ 8.0 mmol/liter)	Provide referral to general practitioner for confirmation and treatment

* CT denotes computed tomography, and ECG electrocardiography.

† Recommendations for general cardiovascular prevention include the following: the use of aspirin at a dose of 75 mg per day, except in patients with anemia (hemoglobin level < 6 mmol per liter), gastric ulcer within the previous 3 months, or daily use of nonsteroidal antiinflammatory drugs; the use of atorvastatin at a dose of 40 mg per day, except in patients with an elevated creatine kinase or alanine aminotransferase level (five times and three times as high as the normal reference level, respectively); smoking cessation; and a diet that is low in saturated fats.

higher than the sex- and age-specific median score (<http://flscripts.dk/cacscore/>), atrial fibrillation, and aortic and iliac aneurysms; ankle–brachial blood-pressure measurements to detect peripheral artery disease and hypertension; and a blood sample to detect diabetes mellitus

and hypercholesterolemia. Details regarding the components of screening, cutoff points for preventive actions, and recommended actions are shown in Table 1. The organization of the program, screening sessions, findings, and consequences of screening findings have been re-

ported in detail previously^{6,7} and are summarized in the Supplementary Appendix.

OUTCOMES

The primary outcome was death from any cause. We prespecified a plan to assess this outcome at the 3-, 5-, and 10-year follow-up. The 3-year analysis was not conducted owing to the coronavirus disease 2019 pandemic; the current report reflects 5-year outcomes.

Prespecified subgroup analyses were performed according to participant age (<70 or ≥70 years); history of cardiovascular disease, stroke, myocardial infarction, heart failure, peripheral artery disease, aortic aneurysm, hypertension, and diabetes mellitus (yes or no for each condition); and current use of lipid-lowering drugs (yes or no). The secondary outcomes were the following: stroke (all, ischemic, hemorrhagic, and unspecified), myocardial infarction, amputation due to vascular disease, aortic dissection, aortic rupture, and cost-effectiveness (not reported here).⁸ We did not prespecify any composite outcomes in the statistical analysis plan, but we subsequently defined a post hoc composite outcome of death, stroke, or myocardial infarction, given the frequent use of this composite outcome in clinical trials.

Explanatory outcomes included the percentage of participants who underwent screening, initiation of and adherence to preventive medications (antiplatelet agents, anticoagulants, lipid-lowering agents, antihypertensive agents, and antidiabetic agents), and elective repair of aortic aneurysm. The safety outcomes were major intracerebral and gastrointestinal bleeding, cardiac revascularization, peripheral vascular revascularization and aortic repair, incident cancer that occurred at least 6 months after randomization, death within 30 days after cardiovascular surgery, and a change in quality of life after screening or follow-up. Additional (“ethical”) outcomes included overdiagnosis and overtreatment. The definitions and methods used for these outcomes are described in the Supplementary Appendix.

DATA SOURCES

Outcome data were largely derived from the Danish National Patient Registry and the Danish National Prescription Registry and were cen-

sored by December 31, 2021. Two exceptions were the percentage of participants who underwent screening, which was recorded in the trial database, and quality of life, which was assessed by means of the EuroQol Group 5-Dimension Self-Report Questionnaire (EQ-5D).^{9,10} This questionnaire was mailed to the participants at baseline and annually during the second quarter of each year (see the Supplementary Appendix).

STATISTICAL ANALYSIS

We calculated that 45,000 men, randomly assigned in a 1:2 ratio to be invited to undergo screening or to be a control, would be needed to detect a 5% relative between-group difference in the overall risk of death, with a two-sided significance level of 5% and 80% power, under the assumption that 70% of the men would undergo screening. We expected a 2-year enrollment period, a 10-year follow-up period, and a median survival of 15 years among the control participants.⁶ For the assessment of outcomes at 3, 5, and 10 years, no plan was made to assign an alpha level to the different assessments.

Numbers, percentages, means, and ranges were used to describe baseline characteristics, the participants who underwent screening, and positive findings. The analyses of the primary, secondary, explanatory, and adverse-event outcomes were performed according to the intention-to-screen principle.

The outcomes were compared in the two groups with the use of Cox hazard regression for analysis of unadjusted hazard ratios with 95% confidence intervals. There was no plan to adjust for multiplicity of testing of secondary or other outcomes or testing of the primary outcome at different time points. For the primary analysis, a two-sided P value of less than 0.05 was considered to indicate statistical significance. All other analyses are reported with 95% confidence intervals. The widths of the confidence intervals were not adjusted for multiplicity, so the intervals should not be used in place of a hypothesis test.

The model assumption of proportional hazards was assessed with the use of Schoenfeld residuals tests. In the few cases in which the assumption of proportional hazards did not hold, the difference (and 95% confidence interval) in restricted mean survival time at 6 years between participants who underwent screening

Table 2. Baseline Characteristics of the Participants.*

Characteristic	Control Group (N=29,843)	Invited Group (N=16,768)	Unscreened Invited Participants (N=6297)	Screened Invited Participants (N=10,471)
Mean age — yr	68.8±2.6	68.8±2.6	68.9±2.7	68.7±2.6
Education after primary school — no. (%)				
None	7849 (26.3)	4331 (25.8)	2057 (32.7)	2274 (21.7)
<3 yr	15,265 (51.2)	8577 (51.2)	3009 (47.8)	5568 (53.2)
≥3 yr	6676 (22.4)	3828 (22.8)	1201 (19.1)	2627 (25.1)
Missing data	53 (0.2)	32 (0.2)	30 (0.5)	2 (0.1)
Currently working — no. (%)	7577 (25.4)	4288 (25.6)	1327 (21.1)	2961 (28.3)
Non-Danish ethnic group — no. (%)	1235 (4.1)	641 (3.8)	341 (5.4)	300 (2.9)
Prescriptions within 1 yr before randomization — no. (%)				
Antiplatelet agents	7617 (25.5)	4191 (25.0)	1695 (26.9)	2496 (23.8)
Anticoagulant agents	2589 (8.7)	1444 (8.6)	600 (9.5)	844 (8.1)
Lipid-lowering agents	11,458 (38.4)	6261 (37.3)	2289 (36.4)	3972 (37.9)
Antihypertensive agents	15,787 (52.9)	8759 (52.2)	3418 (54.3)	5341 (51.0)
Antidiabetic agents	3777 (12.7)	2167 (12.9)	1039 (16.5)	1128 (10.8)
Reason for hospital admission within 5 yr before randomization — no. (%)				
Stroke	1531 (5.1)	751 (4.5)	346 (5.5)	405 (3.9)
Ischemic heart disease	1230 (4.1)	638 (3.8)	233 (3.7)	405 (3.9)
Peripheral artery disease	647 (2.2)	374 (2.2)	192 (3.0)	182 (1.7)
Aortic aneurysm	450 (1.5)	279 (1.7)	130 (2.1)	149 (1.4)

* Plus-minus values are means ±SD. Percentages may not total 100 because of rounding.

and those who did not is reported as an alternative to hazard ratios. In a sensitivity analysis for all outcomes other than death from any cause, the competing risk of death was taken into account. Subdistribution hazard ratios and 95% confidence intervals were computed with the use of the method of Fine and Gray. Quality of life was analyzed as the absolute difference in the change in EQ-5D scores from baseline to the first follow-up and from baseline to the second follow-up.¹¹

RESULTS

PARTICIPANTS

From September 2014 through September 2017, a total of 46,611 men underwent randomization. There was a natural delay in the updating of information in the Danish National Central Person Registry, and among the men who under-

went randomization, 85 (0.2%) had died or emigrated during the period between the extraction of data on eligible participants from the registry and randomization. Thus, the final population consisted of 46,526 men (29,790 in the control group and 16,736 in the invited group). In the latter group, 10,471 men underwent screening (62.6%) (Fig. S1).

Apart from more men with previous stroke and use of lipid-lowering drugs in the control group, there were no material between-group differences in baseline characteristics (Table 2). Table S2 shows the clinical characteristics stratified according to age group.

Positive findings detected in the participants who underwent screening included the following: a coronary-artery calcium score above the age- and sex-specific median score; ascending aortic, aortic arch, descending aortic, infrarenal abdominal aortic, and iliac aneurysms; atrial

fibrillation; peripheral artery disease; hypertension; diabetes mellitus; and hypercholesterolemia. These findings are summarized in Table S1.

OVERALL RISK OF DEATH

After a median follow-up of 5.6 years, a total of 2106 men (12.6%) in the invited group and 3915 men (13.1%) in the control group had died (hazard ratio, 0.95; 95% confidence interval [CI], 0.90 to 1.00; $P=0.06$) (Table 3 and Fig. 1). The cumulative incidence of death at 5 years was 10.6% among the participants who underwent screening and 10.9% among those who did not. Subgroup analyses suggested a difference according to age, with a lower incidence of death from any cause among men in the invited group who were younger than 70 years of age, but not among older men. There were no appreciable differences according to other subgroups (Fig. 2 and Table S3).

SECONDARY OUTCOMES

Results with respect to the secondary outcomes are shown in Table 3. The hazard ratio for stroke in the invited group, as compared with the control group, was 0.93 (95% CI, 0.86 to 0.99); for myocardial infarction, 0.91 (95% CI, 0.81 to 1.03); for aortic dissection, 0.95 (95% CI, 0.61 to 1.49); and for aortic rupture, 0.81 (95% CI, 0.49 to 1.35). The hazard ratio for the composite outcome of death, stroke, or myocardial infarction (defined post hoc) was 0.93 (95% CI, 0.89 to 0.97).

EXPLANATORY VARIABLES

The initiation of preventive medication with antiplatelet agents and lipid-lowering agents was more common in the invited group than in the control group, whereas prescription of anticoagulant, antihypertensive, and antidiabetic agents was similar in the two groups (Table S4). The adherence to prescribed medications was also similar in the two groups (Table S5). Elective repair of aortic aneurysm was more common in the participants who underwent screening, mainly because of elective repair of abdominal aortic aneurysms.

SAFETY AND ETHICAL OUTCOMES

There were no significant differences between the invited group and the control group in safety outcomes, including incident cancer (in 19.8% and 20.3% of the participants, respectively). Se-

vere bleeding appeared to be slightly more common in the invited group (6.8% and 6.3%, $P=0.06$) (Table S6). There was no apparent harm of screening with respect to quality of life (Table S7). Findings with respect to overdiagnosis and overtreatment are included in Figure S2.

DISCUSSION

In this population-based, randomized trial, older men who were invited to undergo comprehensive cardiovascular screening did not have a significantly lower risk of death than a control group after a median 5.6-year follow-up. However, the 95% confidence interval suggests that the plausible results range from no reduction in risk to a 10% reduction, so a clinically important benefit cannot be ruled out.

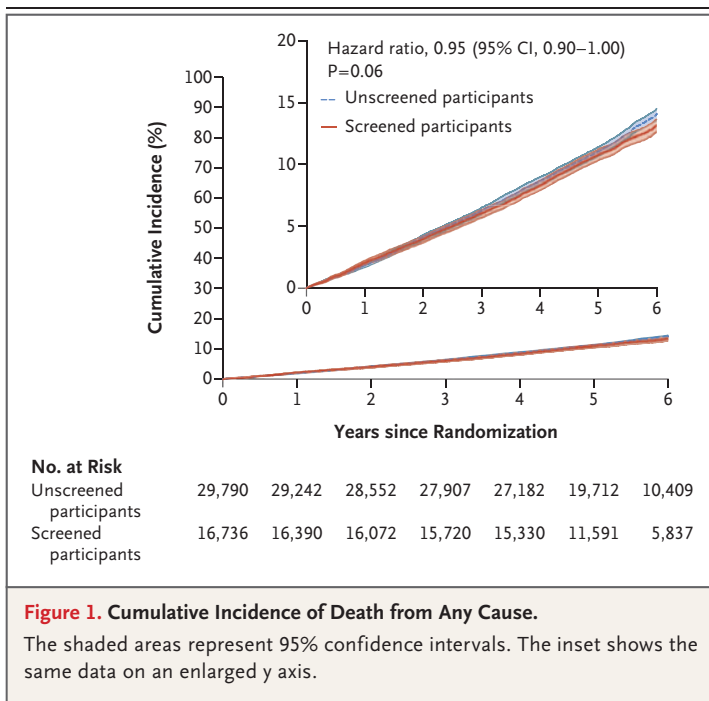
Results of subgroup analyses suggest the possibility of a greater benefit of screening among participants in the younger age group (65 to 69 years of age). As compared with men in the older age group, men in the younger age group underwent screening more frequently, were less likely to have a known history of cardiovascular disease, and may have been more likely to benefit from screening (and from subsequent preventive treatment) owing to their lower baseline use of such treatments, including antiplatelet agents and statins, and the greater prevalence of smoking and higher weight and diastolic blood pressures among these participants. However, this subgroup was one of multiple subgroups assessed, without adjustment for multiplicity, and further study is needed to confirm these findings.

Our trial is limited by the inclusion of men only. In a pilot study involving 1016 women and 1044 men, we found a much lower prevalence of clinically significant findings on screening in the women, especially with respect to high coronary-artery calcium scores.¹² This finding, combined with the lower incidence of cardiovascular disease among the women, made us focus on men. Additional study of cardiovascular events among these women is under way, although power is limited. Increasing the age range for eligibility in women (e.g., 70 to 79 years) would have been expected to increase the prevalence of abnormal findings and to substantially decrease the percentage of participants who underwent screening.

Table 3. Primary and Secondary Outcomes.*

Outcome	Control Group (N = 29,843)		Invited Group (N = 16,768)		Hazard Ratio (95% CI)	P Value
	Participants with Event no. (%)	Median Yr at Risk (IQR)	Events/1000 Person-Yr	Participants with Event no. (%)	Median Yr at Risk (IQR)	Events/1000 Person-Yr
Primary outcome: death from any cause						
All participants	3915 (13.1)	5.6 (4.8–6.2)	24.7	2106 (12.6)	5.6 (4.9–6.2)	23.5
65–69 yr of age	1997 (6.7)	5.6 (4.8–6.2)	20.9	1014 (6.0)	5.7 (5.0–6.2)	18.7
70–74 yr of age	1918 (6.4)	5.4 (4.7–6.1)	30.3	1092 (6.5)	5.4 (4.7–6.1)	30.7
Secondary outcomes						
Stroke	2228 (7.5)	5.4 (4.7–6.1)	14.5	1169 (7.0)	5.4 (4.7–6.2)	13.4
Ischemic stroke	1568 (5.3)	5.4 (4.7–6.2)	10.1	786 (4.7)	5.5 (4.8–6.2)	8.9
Hemorrhagic stroke	248 (0.8)	5.6 (4.8–6.2)	1.6	157 (0.9)	5.6 (4.9–6.2)	1.8
Unspecified stroke	658 (2.2)	5.6 (4.7–6.2)	4.2	354 (2.1)	5.6 (4.8–6.2)	4.0
Acute myocardial infarction	833 (2.8)	5.6 (4.7–6.2)	5.3	431 (2.6)	5.6 (4.8–6.2)	4.9
Aortic dissection	54 (0.2)	5.6 (4.8–6.2)	0.3	29 (0.2)	5.6 (4.9–6.2)	0.3
Aortic rupture	48 (0.2)	5.6 (4.8–6.2)	0.3	22 (0.1)	5.6 (4.9–6.2)	0.3
Major amputation	143 (0.5)	5.6 (4.8–6.2)	0.9	85 (0.5)	5.6 (4.9–6.2)	1.0

* For age-stratified and secondary outcomes, the widths of the confidence intervals were not adjusted for multiplicity, so the intervals should not be used in place of a hypothesis test. IQR denotes interquartile range.



In our previous VIVA trial involving 50,156 men who were 65 to 74 years of age,⁵ we found that screening for abdominal aortic aneurysm, peripheral artery disease, and hypertension was associated with a significant 7% relative reduction in the overall risk of death. In addition to the more comprehensive screening that we offered in the current DANCAVAS trial, there are other notable differences with the VIVA trial.⁵ Among the participants who were invited to undergo screening, preventive action was initiated in 36.5% of the participants in the current trial, as compared with 3.3% in the VIVA trial. Although this action might have been expected to result in greater benefit in participants who were invited to undergo screening, preventive action was initiated in the current trial in a large number of participants with less advanced atherosclerotic lesions (coronary-artery calcium score above the age- and sex-specific median score) than in the VIVA trial. Moreover, a lower percentage of men who were invited to undergo screening in the current trial underwent screening than the percentage in the VIVA trial (63% and 75%, respectively).

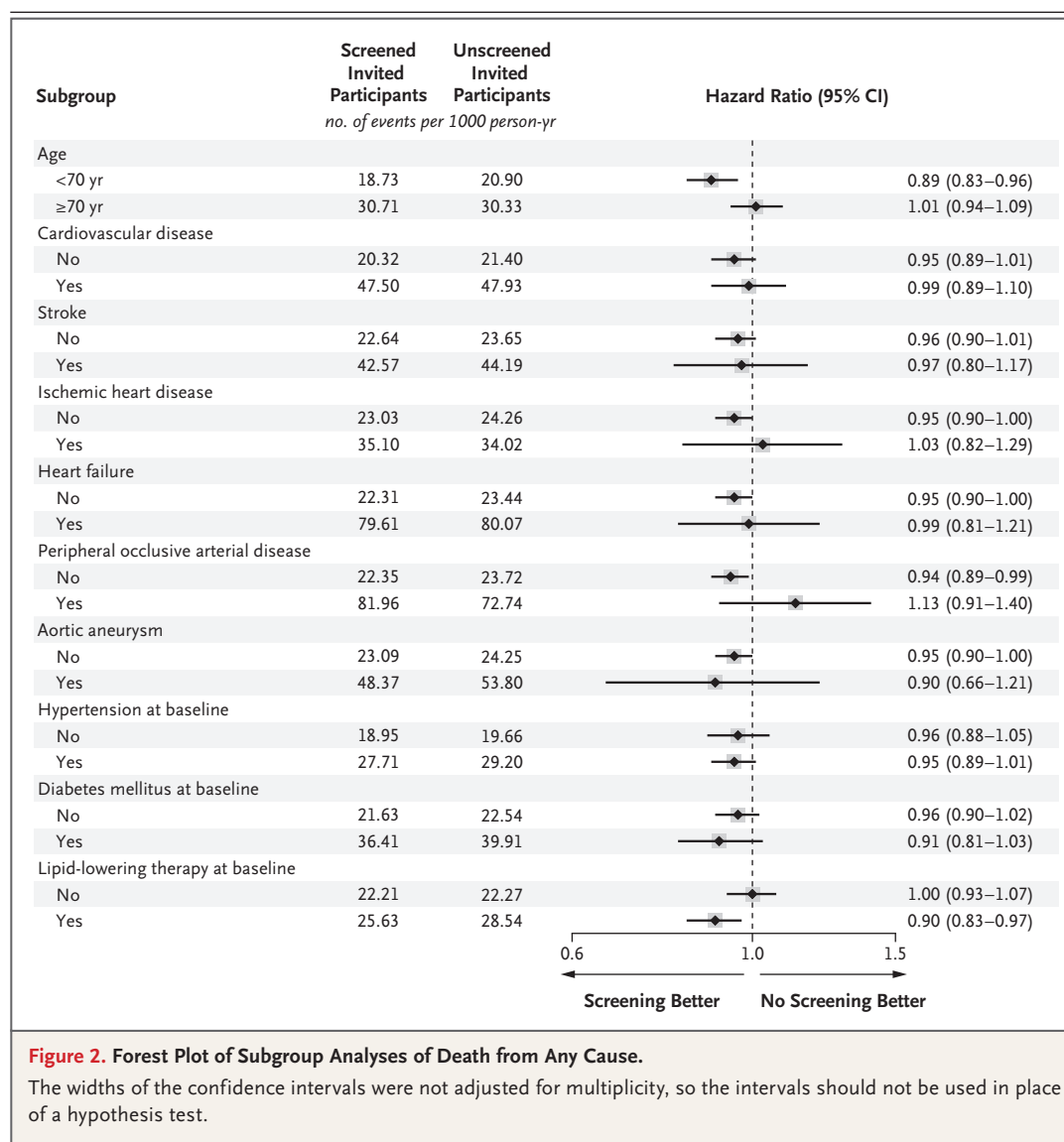
Potential harms of screening must also be

considered in the evaluation of a screening program. We observed a slightly higher incidence of bleeding events in the invited group (in whom antiplatelet agents were more commonly prescribed) than in the control group (in 6.8% and 6.3%, respectively). These antiplatelet agents were also discontinued more frequently in the participants in the invited group, but data are not available on the reasons for discontinuation. Recent evidence suggests that antiplatelet agents are ineffective in primary prevention¹³ in older persons and those with asymptomatic peripheral artery disease,¹² and thus they would no longer be considered to be indicated in many participants to whom they were prescribed in this trial. We also observed a slightly higher incidence of postoperative death after open surgical repair in the invited group.

It was not possible to determine the individual benefits of screening for each of the seven conditions or to identify subgroups of participants who were likely to preferentially benefit from a given screening test. Our finding of no material differences between the trial groups in the prescription of anticoagulant, antihypertensive, and antidiabetic agents but apparent differences in the prescription of statins and antiplatelet agents and in aortic repair suggests that screening and intervention for coronary-artery calcification and aneurysms were particularly likely to lead to preventive action.

By design, our trial assessed the effects of being invited to undergo screening, rather than the effects of actual screening. Because only 62% of the men who were invited to undergo screening underwent screening, the results underestimate the effects of actual screening. We did not look specifically at results in the participants who underwent screening owing to concerns regarding selection bias and to the recognized higher risk among persons who are nonadherent to recommended interventions.

Other limitations should be noted. The trial included men between 65 and 74 years of age who were living in Denmark. It remains unclear whether these results would also apply to women, other age groups, non-White persons, or persons living in countries with different health care systems. Treatment was provided by the primary physicians of the participants in both groups; all



citizens in Denmark have access to such treatment free of charge. The benefit of screening would be expected to vary depending on access to care and to the extent of use of appropriate preventive treatment in routine primary care. Furthermore, we previously found that the detection of incident cardiovascular disease was high in a similar control group; this indicates that the Danish health care system is relatively efficient in detecting disease when the chance appears, which might not be the same in other systems.¹⁴ Moreover, the current follow-up was a median of 5.6 years, but the trial was powered on the basis

of a planned 10 years of follow-up; longer-term follow-up is ongoing.

In this population-based, randomized trial, at a median follow-up of more than 5 years, an invitation to undergo comprehensive cardiovascular screening did not significantly reduce the incidence of death from any cause.

Supported by the Southern Region of Denmark, the Danish Heart Foundation, and the Danish Independent Research Councils.

Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

A data sharing statement provided by the authors is available with the full text of this article at NEJM.org.

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