



Q/ Does ultrasound screening for abdominal aortic aneurysm reduce mortality?

EVIDENCE-BASED ANSWER

A/ YES, screening reduces mortality in men, although it's unclear whether it has the same effect in women. Screening for aortic abdominal aneurysm (AAA) with ultrasound in men 65 to 79 years of age reduces AAA-specific mortality (number needed to screen [NNS] to prevent one death from AAA=769 men over 3 years).

However, a trend toward reduced all-cause mortality doesn't reach significance, possibly because of the low incidence of AAA (strength of recommendation [SOR]: A, systematic review of 4 population-based randomized controlled trials [RCTs]).

Evidence is inadequate to demonstrate benefits of screening in women.

Evidence summary

AAAs occur in 5% to 10% of men and 0.5% to 1.5% of women between 65 and 79 years of age.^{1,2} Risk factors include age, smoking, male sex, and family history.² AAAs are 3 to 5 times more likely in patients with a smoking history.² Approximately 9000 deaths annually are linked to AAAs in the United States, mostly in men older than 65 years.² Mortality after rupture approaches 80% for patients who reach a hospital and 50% for patients who undergo emergent surgery.²

Screening reduces AAA deaths in men, but not all-cause mortality

A Cochrane review assessing the use of ultrasound to screen for AAA analyzed 4 population-based RCTs involving 127,891 men and 9342 women.¹ Participants in each trial were randomly assigned to screening with ultrasound or no intervention.

The reviewers reported that screening significantly reduced mortality from AAA in men 65 to 79 years of age (odds ratio [OR]=0.60; 95% confidence interval [CI], 0.47-0.78). They found no support for decreased mortality in women (OR=1.99; 95% CI, 0.36-10.88).

The study also found no significant reduction in all-cause mortality 3 to 5 years after screening in men 65 to 79 years of age (OR=0.95; 95% CI, 0.85-1.07) or women (OR=1.06; 95% CI, 0.93-1.21), probably because of the low overall incidence of AAA.¹ For men 65 to 79 years of age, the NNS is 769 over 3 years to prevent one death.¹

■ **Limitations of the study** include disproportionate male representation because only 1 of the 4 trials in the Cochrane review enrolled women. Moreover, the analysis didn't include smoking, although smoking increases the risk of AAA 3- to 5-fold. The NNS may be significantly different for smokers than nonsmokers.^{1,2}

Recommendations

The US Preventive Services Task Force (USPSTF) recommends a one-time ultrasound screening for AAA in men between 65 and 74 years of age who have ever smoked.² The USPSTF advises against routine screening in women and concludes that insufficient evidence exists to advocate for or against routine screening in men 65 to 74 years who have never smoked.²

Yamil Miranda-Usua, MD
Eglin Air Force Base Family
Medicine Residency,
Eglin AFB, Fla

James D. Whitworth, PhD
University of West
Florida, Pensacola

Janine Tillett, MSLS, AHIP
Wake Forest University
School of Medicine,
Winston-Salem, NC

ASSISTANT EDITOR

Christopher P. Paulson, MD
Eglin Air Force Base Family
Medicine Residency,
Eglin AFB, Fla

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The Canadian Society for Vascular Surgery recommends a population-based screening program for men 65 to 75 years of age who are candidates for surgery and are willing to participate.³

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References

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