

## Recommendations on screening for abdominal aortic aneurysm in primary care

### POPULATION

The recommendations for screening for abdominal aortic aneurysm (AAA) apply to asymptomatic adults aged 65 years and older.

### BURDEN OF ILLNESS

It is estimated that each year 20,000 Canadians are diagnosed with an AAA and that 1,244 die from an AAA. Male sex is an important risk factor for development of AAAs; the prevalence of AAA among men aged 65 to 80 is 4 to 6 times higher than in women of the same age. Smoking is associated with formation as well as dilation and rupture of AAAs. Other risk factors for the development of an AAA include advanced age and family history of AAA. Coronary artery disease, atherosclerosis, hypercholesterolemia and hypertension have weaker associations with increased risk of AAA, while patients with diabetes appear less likely to develop AAA.

### RECOMMENDATIONS

**Recommendation 1:** We recommend one-time screening with ultrasound for abdominal aortic aneurysm for men aged 65 to 80. (Weak recommendation; moderate quality of evidence)

**Recommendation 2:** We recommend not screening men older than 80 years of age for abdominal aortic aneurysm. (Weak recommendation; low quality of evidence)

**Recommendation 3:** We recommend not screening women for abdominal aortic aneurysm. (Strong recommendation; very low quality of evidence)

### BASIS OF RECOMMENDATIONS

Moderate-quality evidence indicated AAA screening for men 65 to 80 years of age will yield modest reductions in AAA-related mortality, AAA rupture and rates of emergency interventions. Although some elective procedures will result from identification of AAAs which would not have ruptured, in the judgement of the Canadian Task Force on Preventive Health Care (CTFPHC) this possible harm is outweighed by the reduced risk of AAA-related mortality, rupture and emergency procedures.

In balancing the overall benefits and harms of screening, the benefits of screening men 65 to 80 years of age outweigh the harms, and therefore, the recommendation is in favour of screening men in this age group. The recommendation is *weak* because of uncertainty around the impact of declining rates of AAA, which reduces confidence in the magnitude of the benefit from screening. A weak recommendation in favour of screening highlights the need for shared-decision-making with patients.

Despite evidence showing increased risk of AAA among smokers, the CTFPHC did not make a separate recommendation on screening this population because there is no evidence on outcomes of screening smokers for AAA.

For men over 80 years of age the potential benefit of screening is reduced because they are more likely to experience medical conditions that increase their risk of adverse events from elective procedures to repair an AAA. The recommendation is *weak* because uncertainty remains due to low-quality evidence around the magnitude of the effect of screening men over 80 years. A weak recommendation suggests primary care providers discuss patient preferences around screening with healthy men over 80 years of age for whom an elective procedure to repair an AAA would pose less risk.

Women have very low rates of AAA and greater risk of mortality following an AAA procedure which reduces the likelihood of benefit from screening. The recommendation is *strong* as risk of developing an

AAA is much lower for women and, given the potential lack of benefit, AAA screening would consume resources that could otherwise be used for interventions with demonstrated effectiveness.

The CTFPHC will continue to carefully monitor scientific developments in screening for abdominal aortic aneurysm that may impact on these recommendations.

#### **CONSIDERATIONS FOR IMPLEMENTATION**

Male sex, family history and increasing age have all been associated with increased risk of AAA. Smokers have a higher risk of AAA than never smokers, current smokers have a higher risk of developing AAA than former smokers, and those who smoke more than 20 cigarettes a day have a higher risk of AAA than those who smoke less. Current smoking has a modest impact on growth of an AAA and doubles the risk of rupture. Therefore, clinicians may consider smoking history during discussions on screening for AAA, and healthy patients who have ever smoked may be more interested in being screened.

There is some evidence that increasing cardiac failure, renal impairment, chronic obstructive pulmonary disease, peripheral vascular disease, cerebrovascular disease, ischemic heart disease and diabetes are associated with greater risk of mortality following elective repair of an AAA. It is important that men from 65 to 80 years of age with chronic health conditions such as these are aware of their particular risks from elective repair of an AAA before deciding to be screened. In contrast, men over 80 years of age who do not have these conditions may elect to be screened.

Long-term outcomes following endovascular repair and conventional surgery for AAA are similar, but endovascular repairs are less invasive and have lower peri-operative mortality rates. Although no randomized screening trials have been conducted with endovascular repair for screen detected cases, patients may be more inclined to choose screening where this type of repair is available.