Screening for Carotid Artery Stenosis

The US Preventive Services Task Force (USPSTF) has recently published recommendations on screening for asymptomatic carotid artery stenosis.

What Is Carotid Artery Stenosis?
Carotid artery stenosis, also called carotid stenosis or carotid artery disease, refers to the narrowing of the major blood vessels in the neck. The carotid arteries are 2 major blood vessels (one on each side of the neck) that deliver blood to the brain. Just as with the coronary arteries of the heart, plaque can build up in the carotid arteries and cause narrowing, also called stenosis. Over time, this narrowing can lead to problems with the blood supply to the brain, which can result in a stroke.

Conditions that increase risk of carotid artery stenosis include smoking, diabetes, high cholesterol, high blood pressure, older age, and male sex.

Carotid artery stenosis can be treated with medications to lower cholesterol, control blood pressure, and control blood glucose. This is called medical therapy. In some people with severe narrowing, certain procedures or surgery can be performed to open up the artery or remove the plaque.

What Tests Are Used to Screen for Carotid Artery Stenosis?
Although screening for carotid artery stenosis in asymptomatic patients is not recommended, there are 3 types of imaging that can be used to look for carotid artery stenosis: carotid ultrasound, magnetic resonance angiography, or computed tomographic angiography.

What Is the Patient Population Under Consideration for Screening for Carotid Artery Stenosis?
This USPSTF recommendation applies to adults without a history of transient ischemic attack, stroke, or other neurologic signs or symptoms.

What Are the Potential Benefits and Harms of Screening for Carotid Artery Stenosis?
The goal of screening for carotid artery stenosis is to prevent stroke and death. However, no studies have directly looked at whether screening the general population for carotid artery stenosis decreases the rates of stroke and death. Studies that compared surgical/interventional procedures for carotid artery stenosis vs medical therapy alone have shown that additional surgery/procedures result in small or no benefit in reducing stroke or death. Because medical therapy is standard care for people with risk factors for carotid artery stenosis, if surgery/procedures offer no additional benefit, screening is not worthwhile.

In terms of potential harms, ultrasound screening in the general population can have high rates of false-positive findings, leading to unnecessary additional testing or treatment. This can lead to potentially serious adverse effects from carotid procedures or surgery, including stroke and death.

How Strong Is the Recommendation to Screen for Carotid Artery Stenosis?
Based on current evidence, the USPSTF concludes with moderate certainty that screening for asymptomatic carotid artery stenosis in the general population has no benefit and may be harmful.