

Anatomy & Physiology

The carotid artery supplies blood flow to the brain through the anterior and posterior circulation. The front (anterior) circulation comes from the Internal Carotid Artery and is the most vital artery that we scan in the carotid. The majority of life threatening plaque occurs in the internal carotid artery. The back (posterior) circulation, comes from the vertebral arteries. We don't image the vertebral arteries in this course, but if you'd like more information, we offer a 2-day course that includes additional training with the vertebral artery, external carotid artery and subclavian artery - all part of the AODM Carotid Ultrasound exam.

The Nussbaumer Method: A 10 second ultrasound screening that evaluates the Internal Carotid Artery as well as the Common Carotid Artery and the External Carotid Artery - taught in this free course.



Introduction to Diagnosis with Ultrasound



Disclaimer: This guide is for ultrasound awareness and educational purposes only. It is not a substitute for medical diagnosis or advice. Consult a licensed medical professional for evaluation and treatment.

Criteria

ADOM CRITERIA

Internal Carotid Artery

If ~100cm/second abdominal aorta then:

Grade I | Systole: <140cm/s

Grade II | Systole: >140cm/s, but <270cm/s

Grade III | Diastole: >100cm/second

Grade IV | Diastole: >150cm/second

Grade V | Occlusion (no flow)

Why ADOM Criteria Makes a Difference

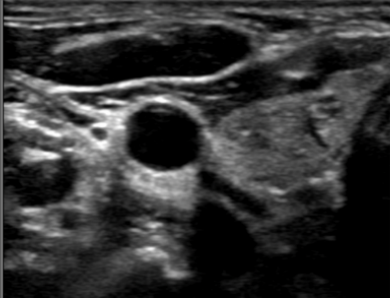
Each person's baseline velocity is intrinsically different. By adding the extra measurement of the mid abdominal aorta prior to each carotid ultrasound, a more precise evaluation of the carotid can be done. If the aorta is systemically higher (or lower) adjustments to the criteria can be considered, as long as the aorta is within normal limits. **ADOM Criteria = Precision Diagnosis**

Carotid



Cerebrovascular Ultrasound

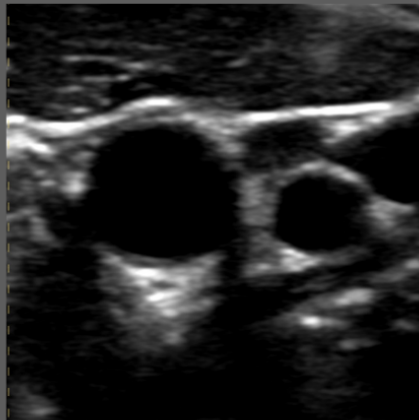
The Nussbaumer Method - Carotid



In a transverse plane, rest the linear probe on top of your clavicle. You should see the circle in the center on the ultrasound screen. This is a cross sectional image of your Common Carotid Artery.

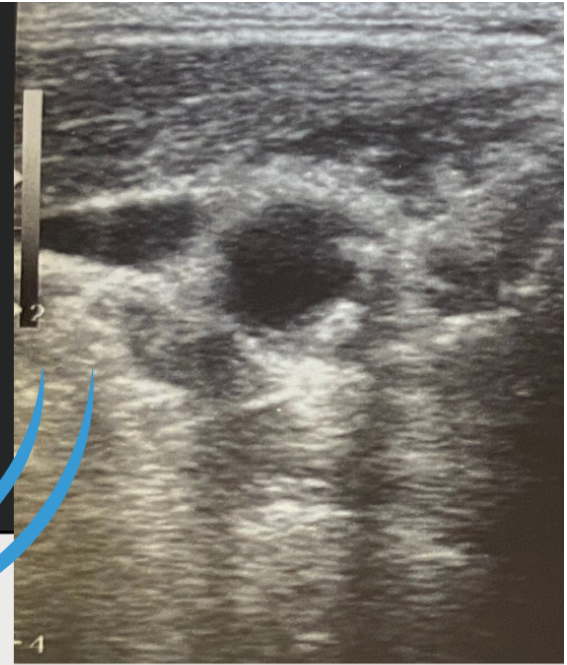
In 10 seconds, gently glide the transducer towards the jaw, keeping the circle in the center until the common carotid artery bifurcates.

The larger vessel is the Internal Carotid Artery. The smaller vessel is the External Carotid Artery.



Learn more about the carotid

#adomacademy



Pathology

Before we pick up the ultrasound probe, we have to know what what we might see.

In the carotid artery we look for:

- **Plaque** - all different kinds of plaque including soft plaque, which is harder to see because it is dark gray in color, fibrous plaque, which is easier to see because it is a lighter gray, and calcific plaque, which is the easiest to see because it is bright white with shadowing.
- **Tears (Dissections)** - which are rare, but easy to see because of the unique appearance of the layer of the artery tearing off the wall..
- **Intimal Thickening**, which is the inner layer of the artery that can be thickened in cardiovascular disease and sometimes can be a sign of heart disease. ([Ask ADOM about how to tell if it's heart disease](#))

