

## Carotid Artery Disease: Underwriting Issues

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There are approximately 500,000 new strokes and 200,000 recurrent strokes in the United States every year. **Between 20-30% of these strokes are caused by a blockage (called stenosis) in the carotid artery system.** This newsletter looks at the underwriting issues for applicants who are discovered to have carotid artery stenosis.



**Reference Item:** The American Heart Association booklet **Heart Disease and Stroke Statistics -- 2003** Update can be downloaded here:  
<http://www.americanheart.org/presenter.jhtml?identifier=1928>

The common carotid artery runs from the base of the neck towards the skull. There is one artery on each side. At about the angle of the jaw it divides into 2 branches: the **external carotid artery (ECA)** which supplies blood to the face, nose and throat and the **internal carotid artery (ICA)** which supplies blood to the eye and part of the brain



**Reference Item:** See this link for an overview of the carotid artery system:  
[http://www.enh.org/encyclopedia/presentations/100124\\_1.asp](http://www.enh.org/encyclopedia/presentations/100124_1.asp)

**Disease of the ICA is a common cause of TIAs (transient ischemic attacks or “mini-strokes”) and strokes.** This is usually the result of blockage that builds up in the ICA and then ruptures, causing blood clots to travel up stream to the brain.

The risk factors for carotid artery disease are the same as for coronary artery disease:

- **Smoking**
- **Hypertension**
- **Hyperlipidemia**
- **Diabetes**
- **Obesity**
- **Older age**
- **Male gender**

These risk factors identify individuals who would most benefit from screening for carotid disease.



**Reference Item:** **Individuals with coronary artery disease have a high incidence of strokes.** The reverse is also true, with stroke victims having a marked increase in the cardiac events (i.e. heart attack).

## Detecting Carotid Disease

The build up of blockage of the carotid arteries is “silent” (i.e. without symptoms). The goal is to discover these potentially deadly lesions prior to a TIA or stroke. This is accomplished two ways:

- **Physical examination** - Using the “bell” end of the stethoscope, the health care provider listens for a sound over both sides of the front portion of the neck that is called a “bruit.” Bruit is a French word for noise and is caused by turbulence of the blood flow through the damaged

carotid artery.



**Reference Item:** The loudness of the bruit is not related to the severity of the actual blockage. In addition, carotid bruits require that heart valve disease (i.e. aortic valve disease) be ruled out. Abnormal sounds of disease heart valves can actually echo up through the neck and cause the bruit.

- **Duplex Ultrasound** This noninvasive test offers two important pieces of information: the size and consistency of blockages and “peak flow velocities” of blood flow over the blockages. Peak flow velocities have proven to be a useful way to predict the presence of significant blockage in the ICA. In general, the higher peak velocity, the greater the probability of a significant blockage (i.e. >200 cm/sec).

## Treating Carotid Disease

Treatment of blockages of the carotid arteries is based on severity of the stenosis and the presence or absence of symptoms.

In individuals without symptoms and blockages of 60% or less, medical therapy alone is appropriate. This involves the use of an anticoagulant, which may include:

- Aspirin
- Coumadin (warfarin)
- Plavix (clopidogrel)
- Ticlid (ticlopidine)
- Persantine (dipyridamole)

In clients with severe blockages, the treatment of choice has been **endarterectomy**. A carotid endarterectomy is a surgical procedure in which a surgeon removes fatty deposits from one of the carotid arteries to improve blood flow and reduce the risk of stroke.

See this link for diagram of the surgery:

<http://www.nlm.nih.gov/medlineplus/ency/imagepages/18059.htm>

See this link for an excellent overview on the appropriate use of carotid endarterectomy:

<http://www.hosprract.com/issues/2000/11/cebarn.htm>



**Reference Item:** Endarterectomy is three times as effective as medical therapy alone in reducing stroke in individuals whose blockages are 70-95% and have symptoms.

An emerging alternate to carotid endarterectomy is **carotid angioplasty and stenting**. The question remains of how and when to use the procedure in both the symptomatic and asymptomatic individual.

## Underwriting Q & A

**Q: What if an applicant has a carotid bruit, but has not had a duplex ultrasound?**

**A:** Most underwriters will want the duplex ultrasound before they make an offer on the case. In addition, they will take a close look at the applicant’s medical history for both risk factors and any evidence of symptoms (i.e. TIA).

**Q: Will applicants who have moderate carotid bruit (i.e. 50% or less), no symptoms and are taking aspirin be rated?**

**A:** This will depend on the overall cardiac risk factor profile. With a non-smoker with normal blood pressure, normal cholesterol levels and normal weight, some carriers may consider a standard offer, especially if they have a Table-3 to standard program.

**Q: What about a client with a history of a TIA who is on Coumadin and has a 70% blockage of the ICA?**

**A:** In applicants with known blockages of the carotid artery and a history of an “event” (i.e. TIA), the underwriting is more challenging. The first step is to complete the TIA questionnaire in

RiskTutor. This will help quantify the risk from an underwriting perspective.

**Q: How soon after endarterectomy can applicants be underwritten?**

**A: This is usually between 3-6 months. The primary focus of underwriting will be the cardiac risk factors, symptoms or events (i.e. TIA or stroke) and other medical problems.**