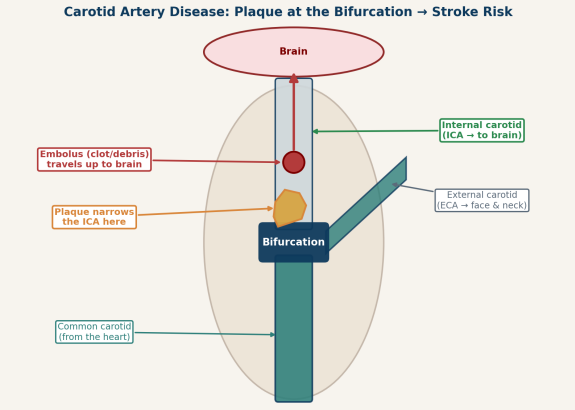
Carotid Artery Disease

Narrowed Neck Arteries, Stroke Risk, and How to Protect Your Brain

Carotid artery disease is plaque buildup in the neck arteries that supply the brain. The main danger is stroke — usually from a clot or debris breaking off, not from slow narrowing alone.



Online: https://go.riasalimd.com/carotid-guide

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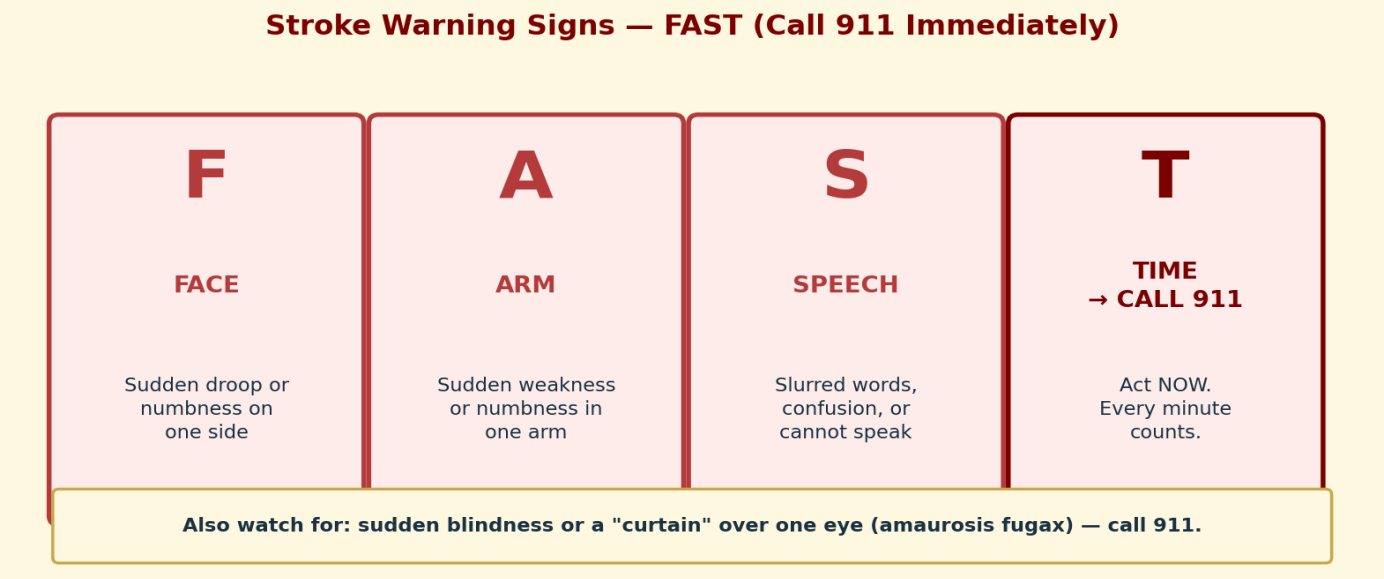
Last Updated: August 2026

Names & Terms You Will Hear

Term	Meaning
Carotid artery disease	Plaque buildup in the neck arteries that carry blood to the brain.
Carotid stenosis (narrowing)	Narrowing of a carotid artery. Graded mild, moderate (50–69%), severe (70–99%), or near-blocked.
Atherosclerosis (plaque buildup)	Cholesterol deposits inside artery walls. The same process causes heart attacks and leg artery disease.
TIA (mini-stroke)	A brief stroke-like episode. It resolves within 24 hours. A TIA is a warning. Treat it as an emergency.
Stroke (ischemic)	Brain damage from blocked blood flow. About 85% of strokes are ischemic. Carotid disease is a common cause.
Amaurosis fugax	Sudden brief blindness in one eye. Often described as a gray curtain falling. Caused by a clot from the carotid artery. Treat it like a TIA.
Carotid bruit	A rushing sound heard with a stethoscope over the neck. It is caused by turbulent flow through a narrowed artery.
CEA (carotid endarterectomy)	Surgery to remove plaque from inside the carotid artery. It is the long-standing standard of care.
CAS (carotid stenting)	A metal mesh tube placed inside the artery via a catheter to hold it open. The catheter usually enters from the groin.
TCAR (transcarotid revascularization)	A newer stenting technique. It uses a small neck incision and temporarily reverses blood flow to protect the brain during stent placement.
Carotid duplex ultrasound	A painless scan using sound waves to measure plaque and artery narrowing in the neck.
NASCET method	The standard way to measure narrowing on imaging. It compares the narrowest point to the normal artery just below.

Term	Meaning
Revascularization	Any procedure to restore blood flow through a narrowed carotid artery. Includes CEA, CAS, and TCAR.
Asymptomatic carotid stenosis	Significant narrowing found on imaging with no prior stroke or TIA on that side. Often found by chance.



FAST Stroke Warning Signs: Face droop, Arm weakness, Speech difficulty all mean it is Time to call 911. Also watch for sudden blindness in one eye (amaurosis fugax). A TIA that resolves is still an emergency — call 911 and go to the ER.

Recognize a Stroke or TIA — Act FAST

- FAST: Face droop or numbness on one side. Arm weakness on one side. Speech slurred, confused, or absent. Time — call 911 right away. Do not drive yourself.
- Also call 911 for: sudden blindness or a gray curtain over one eye, sudden severe headache unlike any before, or sudden double vision or loss of balance.
- A TIA looks exactly like a stroke but resolves. It is still an emergency. Stroke risk is up to 15% in the 90 days after a TIA. The highest risk is in the first 48 hours.
- Time is brain. The clot-busting drug tPA (alteplase) must be given within 4.5 hours. Some thrombectomy procedures can work up to 24 hours. Every minute of delay matters.
- At the ER, the team will do a brain CT scan and carotid imaging. Do not wait to see if symptoms come back.

TIA Is a Stroke Emergency — Do Not Wait

A TIA resolves on its own. But stroke risk in the next 48 hours is very high. Studies show:

• 10–15% chance of a disabling stroke within 90 days of a TIA.
• The highest-risk window is the first 24–48 hours.
• Quick evaluation — brain scan, carotid scan, cardiac monitor — cuts the 90-day stroke risk by over 80%.

What to do: Call 911 or go to the ER for any stroke symptom, even if it fully resolves. Tell the team it could be a TIA. Do NOT wait to call your doctor's office.

Carotid Artery Disease?

- The carotid arteries run up each side of the neck. They supply about 80% of the blood to the brain. Each carotid splits into two branches at the bifurcation. The internal carotid (ICA) goes to the brain. The external carotid (ECA) goes to the face and neck.
- Carotid artery disease means cholesterol-rich plaque has built up inside the artery wall. This happens most often at the bifurcation. Blood flow there is naturally turbulent, so plaque tends to collect.
- The main danger is NOT that the narrowing slows blood flow. The main danger is an embolus — a piece of plaque or clot that breaks off. It travels up the ICA into the brain. It can block a smaller artery and cause a stroke.
- A clot that travels to the retinal artery causes brief blindness in one eye. This is called amaurosis fugax. The retinal artery is a branch of the ICA. Treat this as a TIA and call 911.
- Carotid disease is often silent. Many people learn about it from an imaging scan. The scan may be done for a neck bruit, heart disease, or a routine screen. There are no symptoms beforehand.
- The key question driving treatment is: symptomatic or asymptomatic? Symptomatic means the narrowing has already caused a stroke or TIA on that side.
- About 15–20% of ischemic strokes are caused by carotid disease. It is one of the most preventable causes of stroke. Good medical therapy — and, in some patients, a procedure — can greatly lower the risk.

Carotid Stenosis Severity (NASCET Method) and Treatment Direction

Grade	Stenosis	What It Means	Typical Action
Normal	< 50%	Normal carotid duplex; atherosclerosis may still be present	Medical therapy; cardiovascular risk control
Mild	50–69%	Plaque present; annual duplex surveillance recommended	Intensive medical therapy; no CEA/CAS
Severe	70–99%	High stroke risk if symptomatic; revascularization evaluated	Symptomatic: CEA/CAS; Asymptomatic: often meds
Near-Occl.	99–100%	Near or total occlusion; revascularization benefit may be lost	Multidisciplinary vascular team decision

Carotid Stenosis Severity Chart (NASCET Method). Grades range from normal to near-blocked. Color shows the typical treatment path. Prior stroke or TIA changes the treatment decision at every grade.

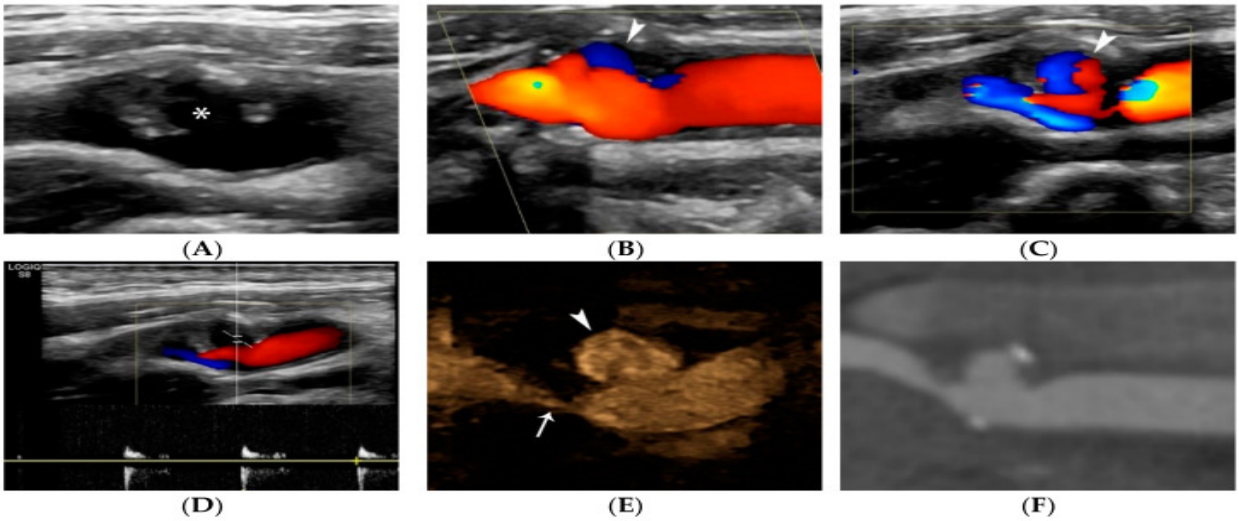
Why It Matters

- Stroke is the fifth leading cause of death in the US. It is a leading cause of long-term disability. About 795,000 Americans have a stroke every year.
- A TIA is a powerful warning. The risk of a full stroke is about 10–15% in the 90 days after a TIA. The highest risk is in the first 48 hours. Treat a TIA as an emergency — not something to watch.
- After a stroke or TIA from carotid disease, the risk of another stroke is high without treatment. Intensive medical therapy — and in some patients, surgery or a stent — can cut that risk by 50% or more.
- Even silent carotid disease raises cardiovascular risk. It signals plaque throughout the body. The same process affects the heart arteries and the leg arteries at the same time.
- Treatment is individual. Not every narrowed carotid needs a procedure. The risk of a procedure must be weighed against the natural history of the narrowing.
- Smoking, high blood pressure, high cholesterol, and diabetes are the main drivers. Controlling these slows or stops plaque growth. This is part of treatment for every patient.

Risk Factors

Some patients are more likely to develop this condition. Knowing your risk helps your care team take extra precautions.

Risk Factor	Why It Increases Risk
Smoking (current or past)	The strongest modifiable risk factor. Tobacco injures artery walls and speeds plaque buildup throughout the body.
High blood pressure	Sustained pressure damages the artery lining. Cholesterol deposits more easily as a result. Blood pressure matters most at the bifurcation, where turbulence is highest.
High LDL cholesterol	LDL is the main building block of plaque. All patients with carotid disease need a high-intensity statin — not just those with high cholesterol at diagnosis.
Diabetes	High blood sugar damages artery walls and speeds atherosclerosis. Diabetes nearly doubles the stroke risk in carotid disease.
Age (65 or older)	Carotid disease is rare under age 50. It is found in about 5–8% of adults over 65.
Family history of stroke or heart disease	A parent or sibling with stroke or early coronary artery disease raises your risk of carotid plaque.
Prior heart attack, coronary artery disease, or PAD	All three share the same root cause — plaque throughout the body. Finding one raises the chance of finding carotid disease.
Male sex	Men develop carotid disease about 5–10 years earlier than women. After age 75, rates are similar.
Chronic kidney disease	Kidney disease speeds atherosclerosis. Patients with CKD have higher rates of carotid narrowing and stroke.



A real carotid duplex ultrasound from a 57-year-old man with a severely narrowed internal carotid artery. (A) Grayscale image showing the plaque with an ulcer crater (asterisk). (B, C) Color Doppler showing abnormal reversed blood flow at the ulcer edge — the classic "yin-yang" sign. (D) Pulsed-wave Doppler showing the back-and-forth flow pattern at the ulcer. (E, F) B-Flow ultrasound and CT angiography confirming the same narrowing. This is exactly the kind of scan your vascular team reviews to grade stenosis and plan treatment. Image: Alexandratou et al., J Clin Med 2022 (CC BY 4.0).

Treatment Options

- **Medical therapy — required for every patient:** High-intensity statin (atorvastatin 40–80 mg or rosuvastatin 20–40 mg) to lower LDL below 70 mg/dL. Antiplatelet therapy — aspirin 81 mg or clopidogrel 75 mg daily. Blood pressure target below 130/80 mmHg. Stop smoking. Control diabetes. Medical therapy alone is the right strategy for most patients without prior symptoms.
- **Antiplatelet therapy:** Aspirin or clopidogrel is standard for all patients. After a TIA or minor stroke, taking both aspirin and clopidogrel for 21 days lowers the risk of another stroke. This is shown in the POINT and CHANCE trials.
- **Who may need a procedure (CEA, CAS, or TCAR):** Patients with a prior stroke or TIA and narrowing of 50% or more. Also some patients with 70% or more narrowing who have no symptoms, low surgical risk, and an experienced surgical team (stroke/death risk below 3%). Your doctor will weigh these factors with you.
- **CEA — carotid endarterectomy (plaque removal surgery):** A surgeon opens the neck and removes plaque directly from the artery. This is the gold standard. The best evidence comes from the NASCET and ACAS/ACST trials. Stroke or death risk is about 2–3% at high-volume centers.
- **CAS — carotid stenting (transfemoral):** A catheter from the groin places a mesh stent to hold the artery open. A filter catches debris during the procedure. In the CREST trial, CAS had a slightly higher stroke rate than CEA in patients over age 70. CAS is used for patients at high surgical risk — such as prior neck surgery, radiation, or severe heart disease.
- **TCAR — transcarotid artery revascularization:** A newer approach. A small neck incision gives direct access to the carotid artery. Blood flow is briefly reversed so debris flows away from the brain — not toward it. The ROADSTER-2 trial showed a 30-day stroke/death rate of 1.4%. TCAR is used for high-surgical-risk patients who need stenting.
- **Vascular team approach:** Complex cases need a team discussion. Vascular surgery, interventional cardiology, and neurology weigh your anatomy, age, symptoms, and center experience together. No single approach fits every patient.

Carotid Revascularization Options — Who It's For, How It Works, Key Risk

Procedure	Who It's For	How It's Done	Peri-Proc. Stroke/Death
CEA (carotid endarterectomy)	Symptomatic 50% or higher stenosis; asymptomatic 70% or higher if low surgical risk, age under 80	Neck incision; plaque surgically removed from artery wall; 1–2 day hospital stay	~2–3% symptomatic; ~1–3% asymptomatic (NASCET/ACAS)
CAS (transfemoral stenting)	High surgical risk (prior neck surgery, radiation, severe cardiac disease); age <70 preferred	Catheter from groin; mesh stent placed; embolic filter used; same-day to overnight	~4–5% age >70; ~2–3% age <70 (CREST trial)
TCAR (transcarotid revascularization)	High surgical risk patients needing stenting; hostile neck anatomy	Small neck incision + flow reversal to protect brain; stent placed; 1 day hospital stay	~1.4% (ROADSTER-2 trial)
Medical therapy alone	Asymptomatic stenosis <70%; all asymptomatic patients on CREST-2 protocol; very elderly	Statin + antiplatelet + BP control + lifestyle; no procedure	No procedural risk; lifelong cardiovascular risk reduction

Medical Therapy Comes First — For Almost Every Patient

- High-intensity statin — atorvastatin 40–80 mg or rosuvastatin 20–40 mg. Lowers LDL below 70 mg/dL. Stabilizes plaque and reduces artery wall inflammation. Every patient with carotid disease should be on one.
- Antiplatelet therapy — aspirin 81 mg or clopidogrel 75 mg daily. After a TIA or minor stroke, taking both for 21 days lowers early repeat stroke risk.
- Blood pressure target: below 130/80 mmHg. Uncontrolled blood pressure is the top modifiable cause of stroke. ACE inhibitors and ARBs are preferred for most patients.
- Stop smoking. Nicotine tightens blood vessels and promotes plaque rupture. Quitting is the single most effective lifestyle change for carotid disease.
- Medicine alone now works as well as a procedure for many people without symptoms. The CREST-2 trial is testing this directly in patients with 70% or more narrowing and no prior stroke.

CEA vs CAS vs TCAR — Choosing the Right Procedure

- CEA (surgery to remove plaque) is the gold standard. It has the strongest long-term trial evidence — NASCET, ECST, ACAS, and ACST-1. Preferred for most patients under 70 who are good surgical candidates.
- CAS (stenting from the groin) is a good option for patients at high surgical risk — prior neck surgery, radiation, or heart conditions that raise anesthesia risk. In the CREST trial, CAS and CEA had similar 4-year stroke rates. But CAS had more strokes during the procedure in older patients.
- TCAR (transcarotid revascularization) adds a safety step: blood flow is briefly reversed so debris goes away from the brain during stenting. The ROADSTER-2 trial showed a 1.4% stroke/death rate. TCAR is now used widely for high-risk patients who need stenting.
- Shared decision-making: there is no single right answer. Your vascular team — surgeon, interventional cardiologist, and neurologist — will weigh your anatomy, age, symptoms, and center experience.
- After any procedure: duplex ultrasound at 1 month, 6 months, and once a year to check for re-narrowing. Continue statin and antiplatelet therapy long-term.

Cross-Links to Companion Guides

Carotid disease shares risk factors with other heart and vascular conditions. These guides may also help:

• Peripheral Artery Disease (go.riasalimd.com/pad-guide) — same plaque process in the leg arteries.
• Hypertension (go.riasalimd.com/htn-guide) — the top modifiable cause of stroke.
• Understanding Cholesterol (go.riasalimd.com/cholesterol-guide) — statin therapy and LDL targets.
• Smoking and the Heart (go.riasalimd.com/smoking-heart-guide) — how to quit and why it matters.

Comfort Measures at Home (No Medication Needed)

These simple steps support healing and ease symptoms. Use them alongside any medication your doctor prescribes.

- Stop smoking. This one change does more to slow carotid plaque than any other lifestyle step. Ask your doctor about quit aids such as varenicline, bupropion, or nicotine replacement.
- Eat a heart-healthy diet. The Mediterranean or DASH pattern works well. Focus on vegetables, fruits, whole grains, legumes, and fish. Limit saturated fat, trans fat, and salt.
- Aim for 150 minutes of moderate activity each week. Brisk walking, cycling, and swimming all work. Exercise lowers blood pressure, improves cholesterol, and cuts stroke risk on its own.
- Check your blood pressure at home. Target is below 130/80 mmHg. Home readings help your doctor adjust medicines quickly.
- Control your blood sugar. Target your HbA1c as directed by your doctor. High blood sugar damages artery walls and speeds plaque growth.
- Limit alcohol. No more than 1 drink per day for women or 2 per day for men. Too much alcohol raises blood pressure.
- Take all medicines as prescribed. This includes statins and antiplatelet drugs. Stopping them suddenly raises stroke risk.

Risks, Benefits, and Alternatives

Every choice has trade-offs. Use this table to start the shared decision conversation.

Option	Risks	Benefits	Alternatives
Medical therapy (statin + antiplatelet + BP control)	Statin: rare muscle ache; very rare liver issue. Aspirin: stomach irritation or bleeding. Clopidogrel: bruising, rare bleeding. BP medicines: dizziness at the start.	Lowers stroke and heart attack risk by 20–30%. Slows plaque growth. Required for all patients. No procedural risk.	Lifestyle only (less effective). Switch antiplatelet type. Adjust statin dose.
CEA (carotid endarterectomy)	Stroke or death risk about 2–3% at experienced centers. Wound infection. Temporary neck pain. Rare nerve injury — hoarseness or tongue weakness. Usually resolves.	Cuts repeat stroke risk by more than 50% for symptomatic narrowing 70% or more (NASCET). Long-lasting results. Most durable option for suitable patients.	Medical therapy alone for low-risk or asymptomatic patients. CAS if surgical risk is high. TCAR if high risk and anatomy needs stenting.
CAS (transfemoral stenting)	Stroke rate slightly higher than CEA in patients over 70 (CREST trial). Access-site bruise. Contrast dye. Re-narrowing in 5–10% over 3–5 years.	Less invasive than surgery. No neck incision. Recovery is same day to overnight. Good option for patients at high surgical risk.	CEA if age is over 70 and anatomy is suitable. TCAR for high-risk patients who need stenting. Medical therapy alone if procedure risk outweighs benefit.

Option	Risks	Benefits	Alternatives
TCAR (transcarotid rev ascularization)	Small neck incision needed. Same stent risks as CAS. Temporary flow reversal rarely tolerated if the other carotid artery is blocked.	Flow reversal protects the brain during stenting. ROADSTER-2 showed stroke/death rate of 1.4% — among the lowest for carotid stenting. Good for high-surgical-risk patients.	CEA if the patient is a good surgical candidate. Transfemoral CAS if TCAR anatomy is not suitable.

Common Misconceptions

Myth	Reality
MYTH: A blockage in my neck means I will have a stroke from slow blood flow.	FACT: The main danger is an embolus — a clot or plaque piece that breaks off and travels to the brain. It blocks a smaller artery and causes a stroke. The narrowing itself rarely starves the brain of blood. This is why even moderate narrowing can cause a stroke without warning. Medical therapy to stabilize plaque is the key first step.
MYTH: If a blockage is found, I must have surgery or a stent.	FACT: Most people with carotid narrowing — even severe narrowing of 70–99% — are treated with medicine alone. That means a statin, antiplatelet therapy, and blood pressure control. The CREST-2 trial is testing whether modern medical therapy works as well as surgery in people without symptoms. Surgery or a stent is for those with recent symptoms or low procedural risk and large narrowing.
MYTH: A stent is always safer than surgery.	FACT: In patients over age 70, carotid stenting (CAS) has a slightly higher stroke rate than surgery (CEA). This was shown in the CREST trial. The best choice depends on age, anatomy, prior neck surgery or radiation, and center experience. There is no option that is always safer.
MYTH: A TIA that resolves is not serious — I can wait and see my doctor next week.	FACT: A TIA is a medical emergency. Stroke risk is about 10–15% in the 90 days after a TIA. The highest risk is in the first 24–48 hours. Call 911 for any stroke symptom — even if it fully resolves. Do not wait.
MYTH: A normal carotid ultrasound means I will not have a stroke.	FACT: Many strokes come from the heart or from small vessels deep in the brain — not from the carotid arteries. A clear carotid ultrasound is reassuring. But it does not rule out all causes of stroke. Your doctor may also check your heart rhythm and order a brain MRI.

Myth	Reality
MYTH: Aspirin alone is enough to treat carotid disease.	FACT: Aspirin is just one part of treatment. A high-intensity statin is equally important. It stabilizes plaque and lowers stroke risk. Blood pressure control is also essential. Good treatment means all three together — not just aspirin.

Possible Complications

Knowing what can go wrong helps you spot problems early. Most complications are uncommon, especially with treatment.

Where / What	What Can Happen
Stroke — the primary complication	Carotid plaque can send a clot to the brain at any time. Risk is highest in the weeks after a TIA. Medical therapy and, in some patients, a procedure can greatly lower this risk.
TIA (mini-stroke)	A brief episode with stroke-like symptoms that fully resolves. A TIA is not harmless. It is the clearest warning that a stroke may be coming soon. Treat every TIA as a stroke until proven otherwise.
Amaurosis fugax (retinal artery embolism)	A clot from the carotid artery reaches the retinal artery. This causes sudden brief blindness or a gray curtain over one eye. It is a TIA of the eye. It carries the same urgent stroke risk.
Stroke risk during a procedure (CEA/CAS/TCAR)	The main risk of any carotid procedure is stroke during or just after it. At high-volume centers, this risk is about 2–3% for CEA, slightly higher for CAS, and about 1.4% for TCAR (ROADSTER-2 trial).
Re-narrowing after stenting (restenosis)	The stented artery can narrow again over time — in about 5–10% of patients by 3–5 years. This is usually silent and found on a follow-up ultrasound. Re-treatment is rarely needed.
Nerve injury after CEA	Nerves near the carotid artery can be stretched during surgery. This can cause a temporary voice change, tongue deviation, or lip weakness. It usually resolves over weeks to months.
Plaque throughout the body	Carotid disease signals plaque in other arteries too. Heart attack and other vascular events are real long-term risks. Lifelong risk-factor control and cardiology follow-up are essential.

Points to Know

If you remember nothing else, remember these key points.

- The main danger of carotid disease is a clot — a piece of plaque that breaks off and blocks a brain artery. It does not work by slowly starving the brain of blood.
- Know FAST: Face droop, Arm weakness, Speech problems — Time to call 911. Also call 911 for sudden blindness in one eye. A TIA that resolves is still an emergency.
- Medical therapy is the foundation for all patients — even those who have a procedure. Take a high-dose statin, an antiplatelet drug, and blood pressure medicine. Stop smoking.
- Most people with severe carotid narrowing (70–99%) and no symptoms are treated with medicine — not surgery or a stent. The decision depends on symptoms, anatomy, age, and your surgeon's risk rate.
- For narrowing of 50% or more with prior stroke or TIA, a procedure plus medicine lowers repeat stroke risk much more than medicine alone.
- Stenting is not always safer than surgery. In patients over 70, CEA (surgery) has a lower stroke rate than transfemoral stenting (CAS). Choose based on your full picture.
- After any carotid procedure, you will need follow-up ultrasounds — usually at 1 month, 6 months, then yearly. These check that the repair is still open.
- Leg artery disease (PAD) and heart artery disease often go with carotid disease. Treating one means treating them all.

When to Call Us - and When to Call 911

If you are not sure, call. We would rather hear from you twice than miss a real problem.

- **Call 911 right away:** any FAST symptom — sudden face droop or numbness on one side, arm or leg weakness on one side, trouble speaking or understanding speech, sudden severe headache, or sudden vision loss. Do NOT drive yourself.
- **Call 911 right away:** sudden blackout or gray curtain over one eye — even if vision comes back in seconds. This is a TIA of the retinal artery. It carries high stroke risk. Act now.
- **Call your doctor today:** any new neurologic symptom that has fully resolved — tingling on one side, brief confusion, or sudden weakness that passed. A resolved TIA is still an emergency.
- **Call your doctor this week:** new dizziness with unsteadiness, coordination problems, or brief double vision that came on suddenly and then resolved.
- **Schedule an appointment:** you have a carotid bruit and have never had a carotid duplex ultrasound scan.
- **Schedule an appointment:** you have coronary artery disease, leg artery disease (PAD), or prior stroke and have never had carotid imaging. Plaque often affects more than one area.

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Trusted Resources

The links below are the trusted resources Dr. Ali used to write this guide and that he recommends you visit for more information. Each is a clickable link in the digital version and a Short.io tracked URL on the printed version.

- AHA — Carotid Artery Disease - American Heart Association overview including FAST stroke recognition and carotid disease basics
- Cleveland Clinic — Carotid Artery Disease - Detailed patient education covering symptoms, diagnosis, treatment options, and recovery
- Mayo Clinic — Carotid Artery Disease - Comprehensive patient guide with risk factors, symptoms, and treatment descriptions
- NIH MedlinePlus — Carotid Artery Disease - NIH curated resource page with plain-language overview and links to additional resources
- AHA/ASA Stroke Symptoms — FAST - American Stroke Association stroke warning signs — FAST and BE-FAST mnemonics
- American Stroke Association — TIA - TIA information and why a 'mini-stroke' requires emergency evaluation
- Vascular Cures — Carotid Artery Disease - Patient advocacy group with resources for carotid disease patients
- AHA Hands-Only CPR - If a person collapses from a stroke-related emergency — learn hands-only CPR in 1 minute

Sources Used to Build This Guide

Every recommendation in this guide is grounded in one or more of the studies, guidelines, or trusted resources below. Short links are tracked so Dr. Ali can see which references patients are reading; nothing personally identifying is captured.

- NASCET Investigators — Beneficial effect of carotid endarterectomy in symptomatic patients *[Trial]*
  Landmark RCT establishing CEA benefit in symptomatic 70–99% stenosis; defines NASCET measurement method
- ECST Collaborative Group — MRC European Carotid Surgery Trial *[Trial]*
  European counterpart to NASCET confirming CEA benefit for high-grade symptomatic carotid stenosis
- ACAS — Endarterectomy for asymptomatic carotid artery stenosis (JAMA 1995) *[Trial]*
  Established modest CEA benefit for asymptomatic ≥60% stenosis in low-surgical-risk patients
- ACST-1 — Prevention of disabling and fatal strokes by successful carotid endarterectomy (Lancet 2004) *[Trial]*
  Confirmed long-term CEA benefit for asymptomatic ≥70% stenosis; basis for current asymptomatic guidelines
- CREST — Carotid revascularization endarterectomy versus stenting trial (NEJM 2010) *[Trial]*
  Head-to-head CEA vs transfemoral CAS; higher peri-procedural stroke with CAS in older patients (>70 yrs)
- CREST-2 — Carotid revascularization and medical management for asymptomatic carotid stenosis (ongoing) *[Trial]*
  Modern RCT testing intensive medical therapy alone vs CEA/CAS in asymptomatic ≥70% stenosis; results pending
- ROADSTER-2 — Transcarotid artery revascularization with dynamic flow reversal (J Vasc Surg 2020) *[Trial]*
  Pivotal study for TCAR; 30-day stroke/death 1.4% — lower than historical transfemoral CAS in high-surgical-risk patients
- AHA/ASA Guideline for Prevention of Stroke in Patients With Stroke and TIA (2021) *[Guideline]*
  AHA/ASA secondary stroke-prevention guideline — medical therapy, CEA/CAS indications, antiplatelet regimens
- SVS Clinical Practice Guidelines for Management of Extracranial Carotid Disease (2022) *[Guideline]*
  Society for Vascular Surgery guidelines covering TCAR, CAS, CEA patient selection and technique recommendations
- USPSTF — Screening for Asymptomatic Carotid Artery Stenosis (2021) *[Guideline]*
  USPSTF D recommendation against routine population screening; context for who should vs should not be screened
- Cleveland Clinic — Carotid Artery Disease *[Patient Education]*
  Authoritative plain-language patient overview for cross-checking scope and framing
- Mayo Clinic — Carotid Artery Disease *[Patient Education]*
  Plain-language patient education cross-check for symptoms, risk factors, and treatment descriptions
- AHA — Carotid Artery Disease *[Patient Education]*
  AHA patient-facing overview; used for community-education framing and FAST stroke warning language
- NIH MedlinePlus — Carotid Artery Disease *[Patient Education]*
  NIH curated resource; plain-language description and trusted-resources list

About This Guide

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Version: 2026-08-15

Reviewer note: Reviewed against Cleveland Clinic, Mayo Clinic, and AHA carotid artery disease guides. This guide adds: NASCET, ECST, ACAS, ACST, CREST, CREST-2, and ROADSTER trial data; embolus vs. slow-flow mechanism explained; TCAR named alongside CEA and CAS; color-coded stenosis chart; FAST panel with amaurosis fugax; TIA emergency callout; procedure comparison table with stroke/death rate numbers.

Disclaimer

This guide is for educational purposes only and does not replace medical advice from your physician. Recommendations may not apply to every patient. Always follow the specific instructions of Dr. Ali and your care team. In an emergency call 911 or go to the nearest emergency department.

Take This Guide With You

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