Valley Vascular Surgery Associates

In affiliation with UCSF Fresno

Transcarotid Artery Revascularization (TCAR) Procedure

Speakers:

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CCFMG
Central California Faculty Medical Group

TCAR

Protection from stroke
And so much more

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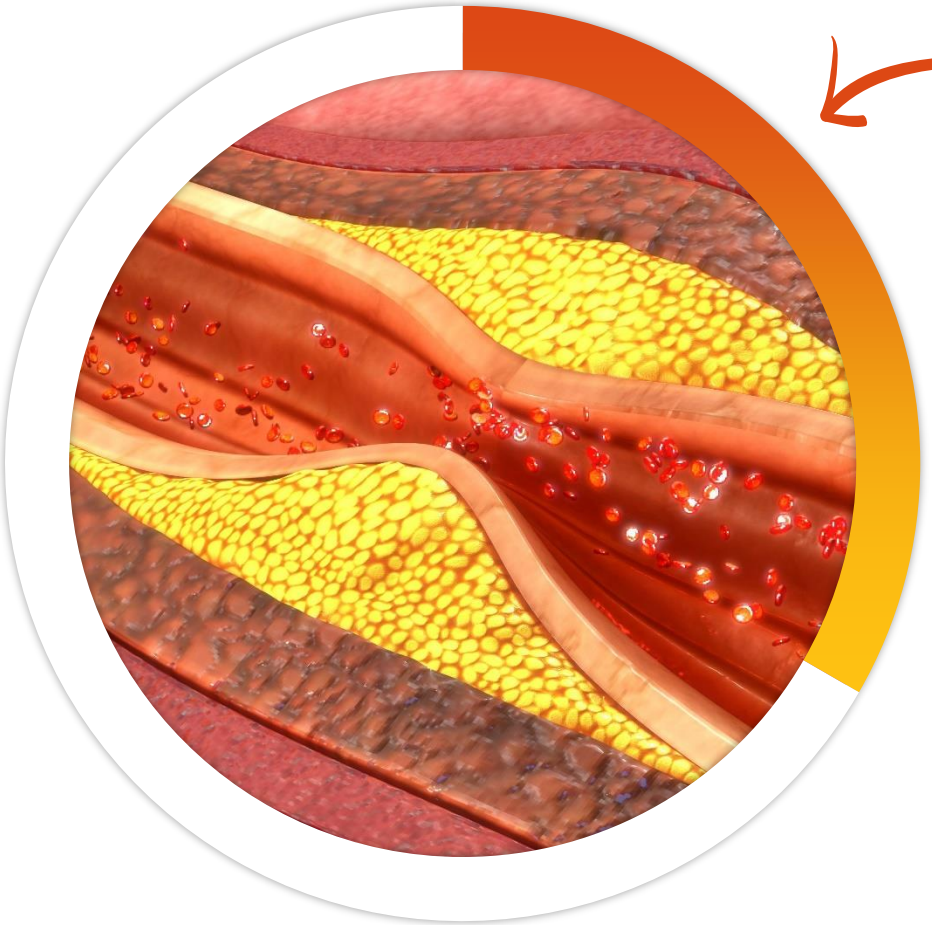

Up to **1/3**
of strokes are
from carotid origin[1]

STROKE IS A LEADING CAUSE OF
DEATH IN THE UNITED STATES

Nearly **800,000** people in the United States have a stroke every year, with about three in four being first-time strokes.[2]

1 Source: Society of Vascular Surgery's Patient-Resources, for further information and disclaimer: https://vascular.org/patient-resources/vascular-conditions/carotid-artery-disease
2 Source: https://www.ahajournals.org/doi/10.1161/STROKEAHA.114.005090

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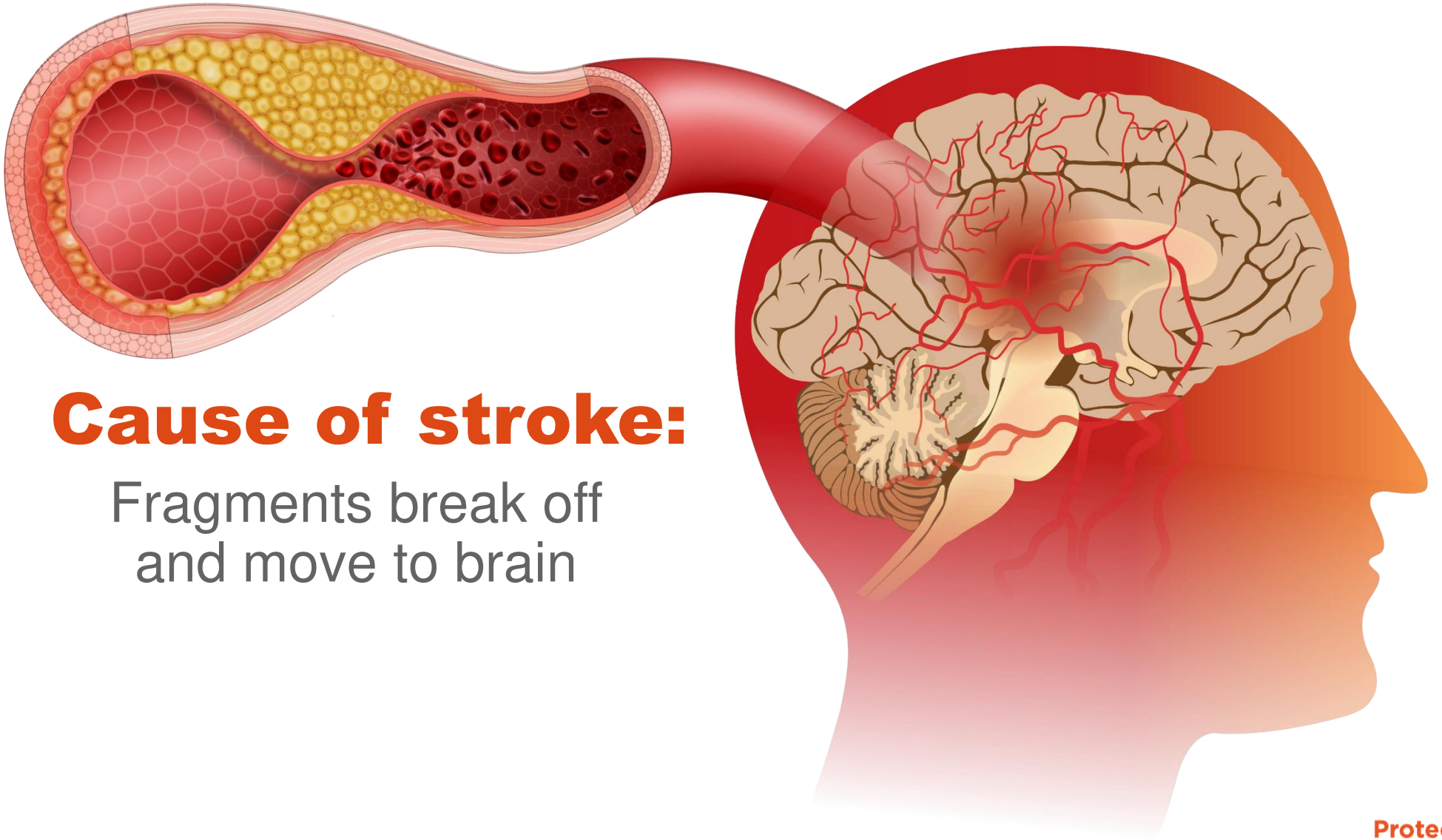
HOW DOES CAROTID ARTERY DISEASE CAUSE STROKE?



Cause of stroke:

Fragments break off
and move to brain

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Challenge of **Stroke Prevention**

Most carotid disease is **silent** – often, the first symptom a patient has is a stroke.

Incident of Stroke in the United States. Megan C Leary and Jeffrey L Saver Stroke. 2001;32:363

Challenge of **Stroke Prevention**

It is estimated that for every **symptomatic stroke**, there are nearly **fourteen 'silent' strokes** that may result in changes to cognitive function and processes.

Incident of Stroke in the United States. Megan C Leary and Jeffrey L Saver Stroke. 2001;32:363

ACC/AHA CAROTID SCREENING GUIDELINES

- Symptomatic (neurologic event)
- Carotid Bruit
- Evidence of Vascular Disease
  - Coronary artery disease
  - Peripheral artery disease
  - Aortic aneurysm
- >2 Atherosclerotic Risk Factors
  - Hypertension
  - Hyperlipidemia
  - Smoking history
  - Family history of stroke

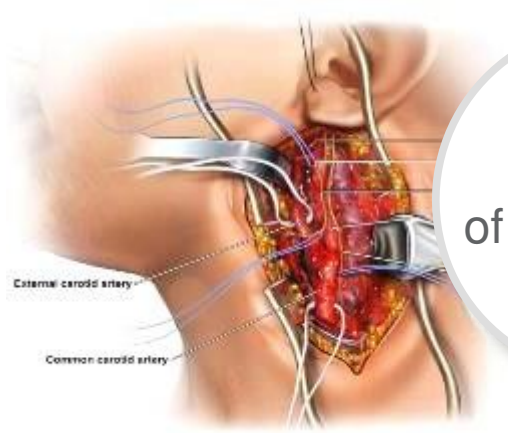
Joint Recommendations by *2011 American College of Cardiology Foundation/American Heart Association Task Force et al. - Guidelines on the management of patients with Extracranial Carotid and Vertebral Artery Disease*

SURGICAL:

Carotid Endarterectomy

(CEA)

65+ years



~83%
of procedures

SIGNIFICANT adverse events

LOW 30-day stroke risk

CREST MI[1]: 2.3% CEA vs 1.1% TF CAS

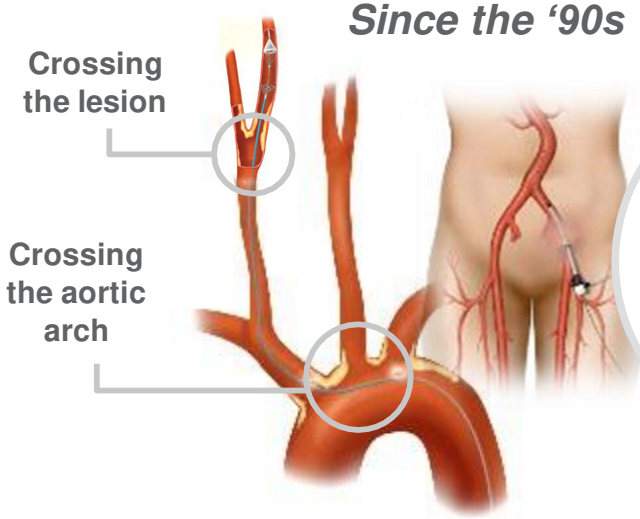
CREST CNI[2]: 2.1% CNI unresolved at 6 months (80% motor)

ENDOVASCULAR:

Transfemoral Carotid Artery Stenting

(CAS)

Since the '90s



~10%
of procedures*

LOWER adverse events

HIGHER (~2x) 30-day stroke risk

CREST 30-day All Stroke[1]: 2.3% CEA vs 4.1% TF CAS

Source: Modus Health Group *Excludes TCAR procedures
1. CREST Trial: New England Journal of Medicine 2010;363:11-23
2:. Circulation. 2012;125:2256-2264

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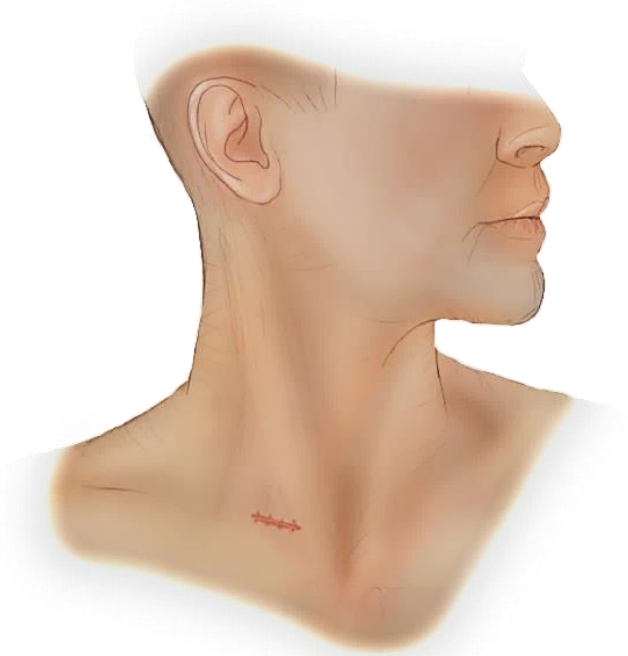
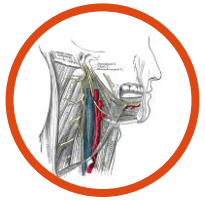
TCAR PARADIGM SHIFT: TRANSCAROTID



TCAR combines advantages from both worlds: **surgical principles** of neuroprotection and game-changing **endovascular technology**

Minimally Invasive

Avoids Aortic Arch



Avoids Cranial Nerve Plexus

High-Rate Flow Reversal Neuroprotection

Accurate stenting

Source: Schermerhorn ML, Liang P, Eldrup-Jorgensen J, et al. Association of Transcarotid Artery Revascularization vs Transfemoral Carotid Artery Stenting With Stroke or Death Among Patients With Carotid Artery Stenosis. JAMA. 2019;322(23):2313–2322. doi:10.1001/jama.2019.18441

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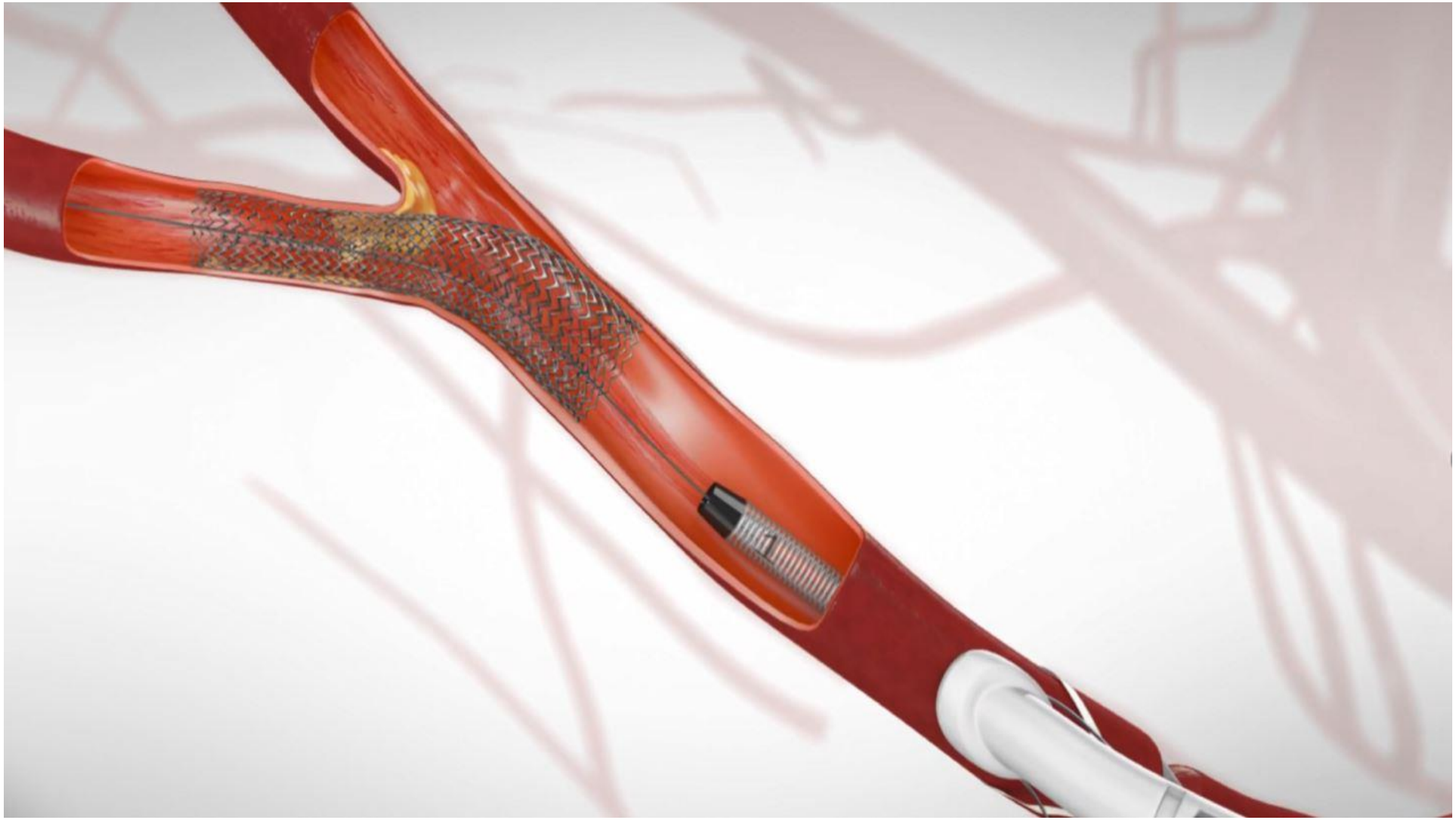
WHAT IS TCAR?



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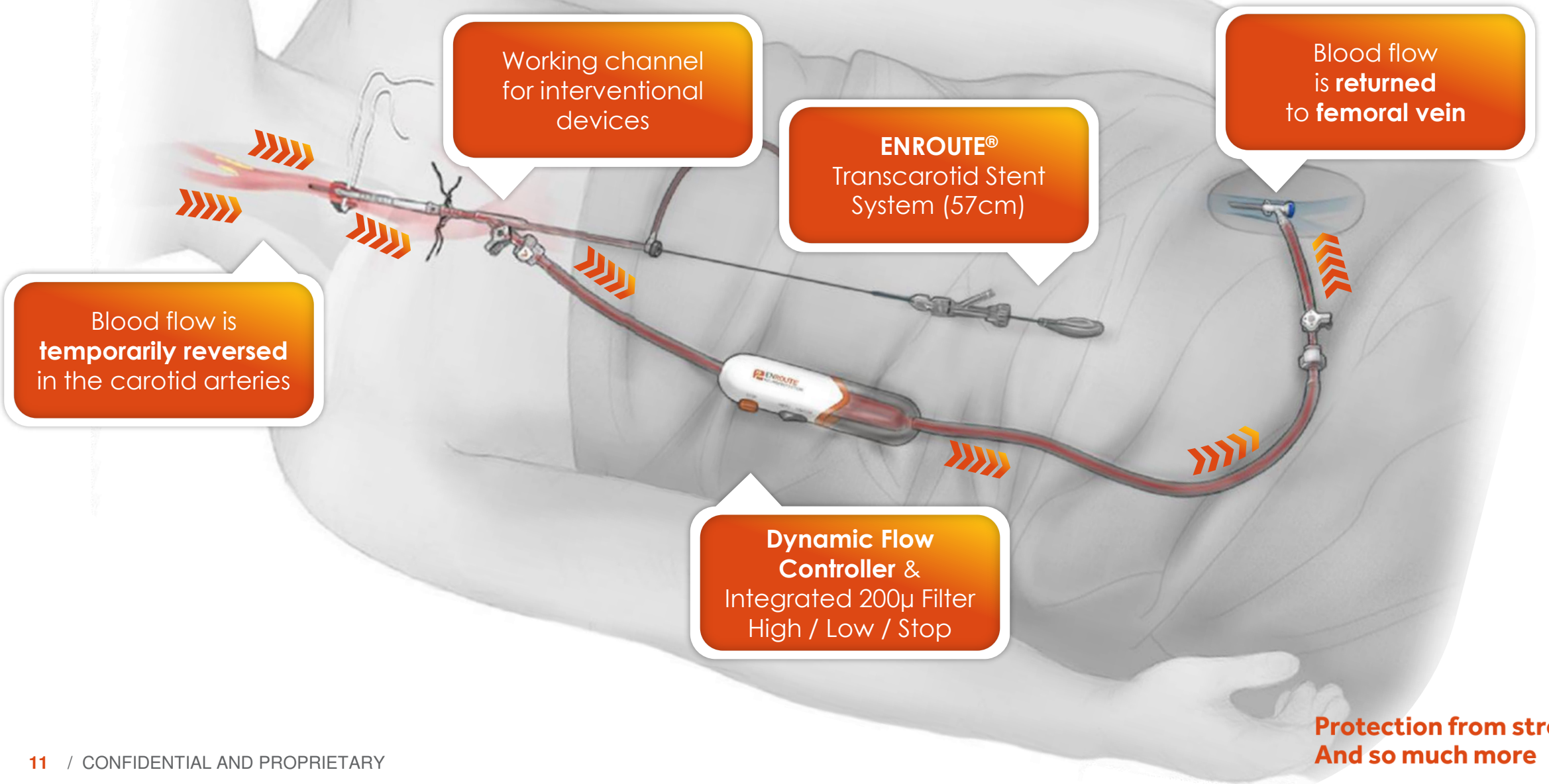
ENROUTE® TRANSCAROTID NEUROPROTECTION & STENT SYSTEM



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And so much more

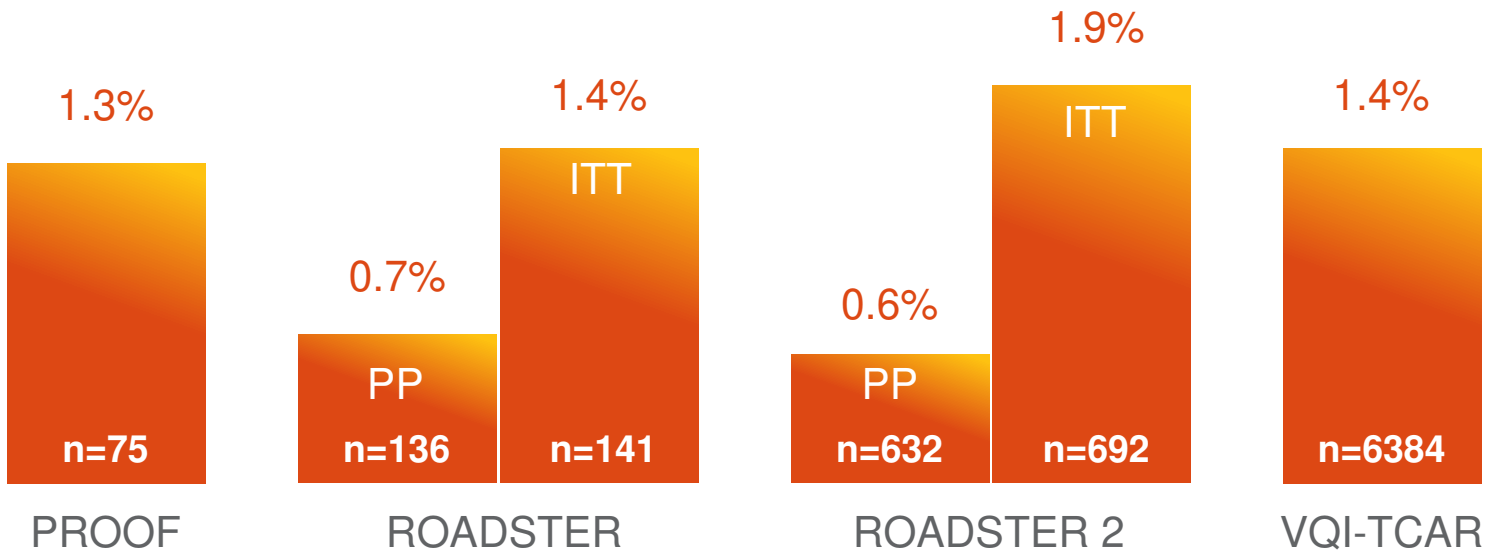
PERIPROCEDURAL STROKE RATES

Publications of TCAR & CEA

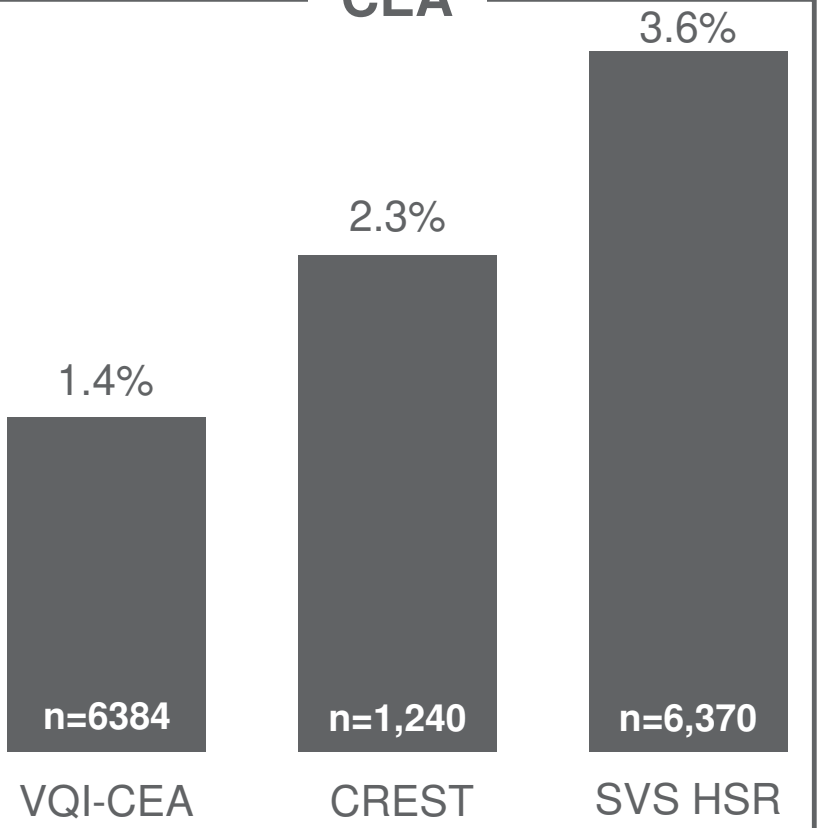
TCAR

*"The stroke rate of **0.6%** after TCAR in the Per Protocol population may be the lowest reported rate after **any carotid intervention**."*

–Stroke 2020; 51:2620–2629



CEA



PROOF: J Endovasc Ther. 2017 Apr;24(2):265-270
ROADSTER: J Vasc Surg. 2015 Nov;62(5):1227-34. The Silk Road System for Transcervical Access with Reversal of Flow to Perform TCAR: Results of the ROADSTER Trial - VEITH, 2016
ROADSTER 2: Trial Results – Stroke. 2020;51:2620–2629; Kashyap V, Schneider P.
Outcomes of TransCarotid Revascularization with dynamic flow reversal (TCAR) versus carotid endarterectomy (CEA) in the TCAR Surveillance Project – M. Malas, Annals of Surgery 2020
CREST Standard Surgical Risk: N Engl J Med. 2016 Mar 17;374(11):1011-20.
SVS Registry: J Vasc Surg. 2013 May;57(5):1318-24.

Protection from stroke
And so much more

TCAR VS TF-CAS IN THE VQI DATABASE[1]

The authors reviewed patient data **(n = 3286** matched) collected from the VQI-TSP to compare outcomes of TCAR vs TF-CAS; published in the **Journal of the American Medical Association (JAMA)**.

TCAR Safety

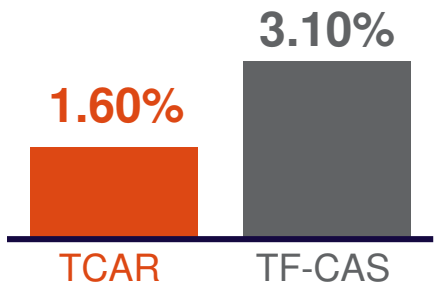
The investigators found a significant decrease in stroke, death, and stroke/death for patients who underwent TCAR

Durability and Efficiency

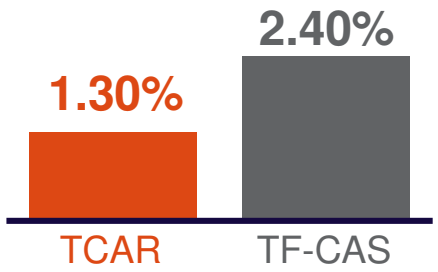
The investigators found a significant decrease in stroke or death at one year as well as procedural efficiencies with TCAR

Conclusion: TCAR had a *significantly lower* risk of stroke or death compared to TF-CAS with improved procedural efficiencies (radiation/contrast).

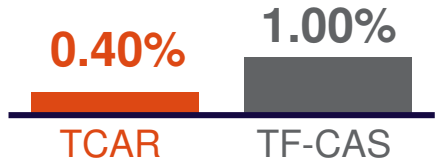
IN-HOSPITAL STROKE OR DEATH



STROKE



DEATH

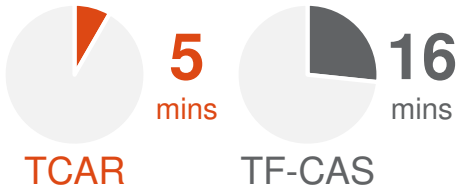


IPSILATERAL STROKE OR DEATH AT 1 YEAR

P < .001

RADIATION EFFICIENCY

Fluoroscopy Time (median)



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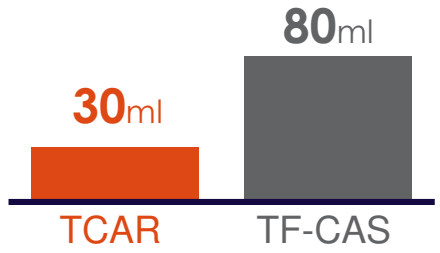
CONTRAST EFFICIENCY

Contrast Used (median)



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1. JAMA. 2019 Dec 17;322(23):2313-2322; Schermerhorn ML, Liang P, Eldrup-Jorgensen J, Cronenwett JL, Nolan BW, Kashyap VS, Wang GJ, Motaganahalli RL, Malas MB

Protection from stroke
And so much more

WHEN RECEIVING TCAR VS CEA, A PATIENT IS…

86%
Less Risk of CNI

47%
Less Risk of MI

48mins
Shorter OR Time

12%
less likely to have an extended stay past one day

Transcarotid Revascularization with Dynamic Flow reversal versus Carotid Endarterectomy in the Vascular Quality Initiative Surveillance Project - M. Malas, Annals of Surgery 2020

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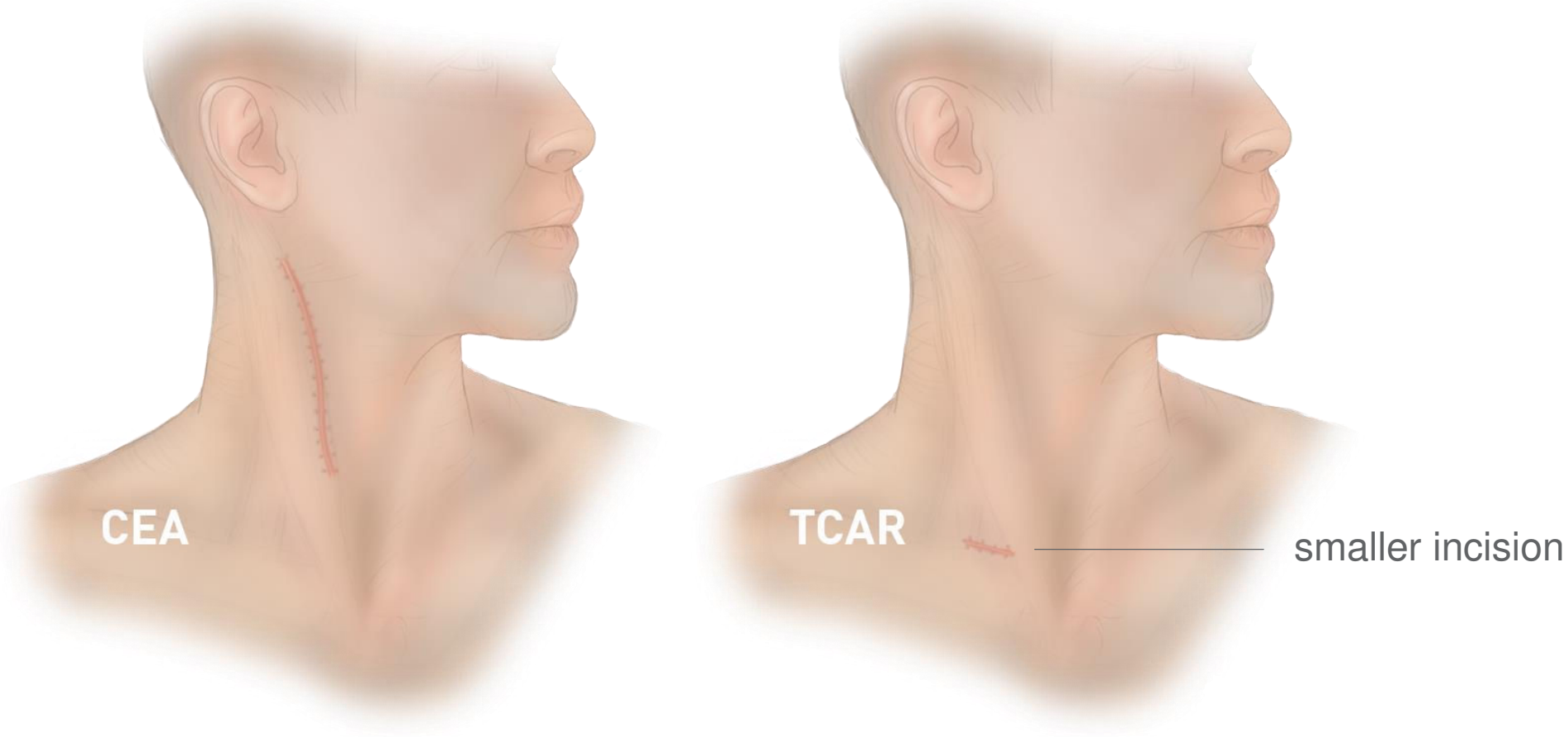
TRANSCAROTID ARTERY REVASCULARIZATION (TCAR)

A Less Invasive Way To Prevent Stroke



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STANDARD POST-PROCEDURE MEDICATIONS

Dual antiplatelet therapy and statin*

Aspirin
75-325 mg/day
continued indefinitely

Plavix® (Clopidogrel) or equivalent
75 mg/day for at least
4 weeks post-procedure

Statin
Therapeutic dose for at least
4 weeks post-procedure

Violation of medication regimen is #1 cause of MAE in TCAR

*As described in the 2011 ASA/ACCF/AHA/AANN/AANS/ACR/ASNR/CNS/SAIP/SCAI/SIR/SNIS/SVM/SVS Guideline on the Management of Patients With Extracranial Carotid and Vertebral Artery Disease: Executive Summary - https://www.ahajournals.org/doi/pdf/10.1161/CIR.0b013e31820d8d78

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PATIENT TESTIMONIAL-DR. WILSON'S STORY

Protection from stroke
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