

Update on the ACST-2 Trial: Early Outcomes and Perspectives on the Field From Across the Pond



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For the ACST-2 Investigators

Disclosures

- None

Asymptomatic carotid artery stenosis: narrowing
that has not yet caused a stroke

Might intervention prevent stroke?





To answer this, we undertook ACST-1 (1993-2008)

**3120 patients, severe stenosis eligible for CEA
randomized to:**

Immediate CEA

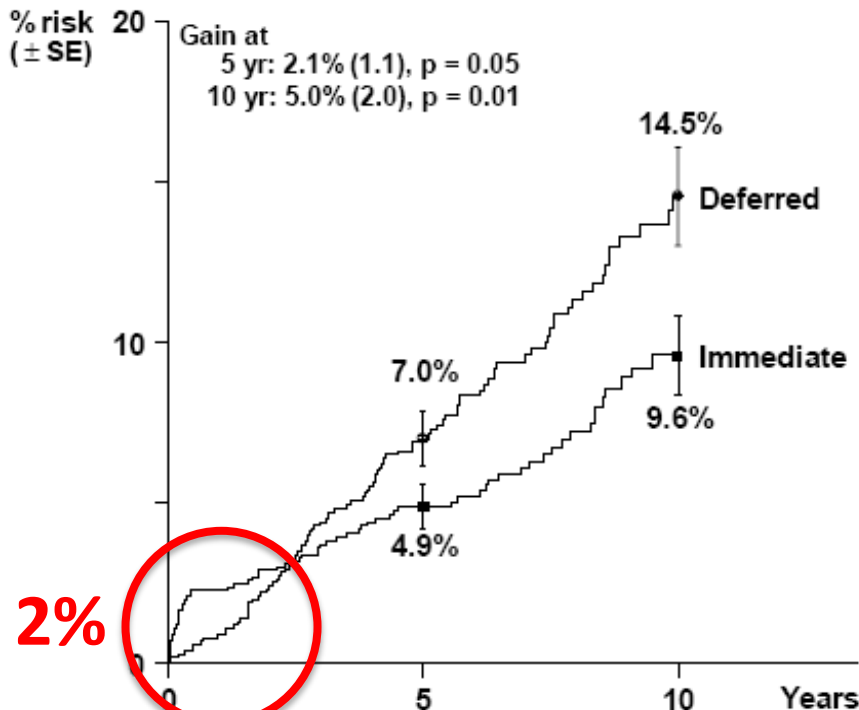
vs

**‘control’
(no CEA unless symptoms occur)**

ACST-1: Long-term (10yr) results

Carotid surgery saves strokes, despite its 2% risk (procedural risk is much reduced by statins)

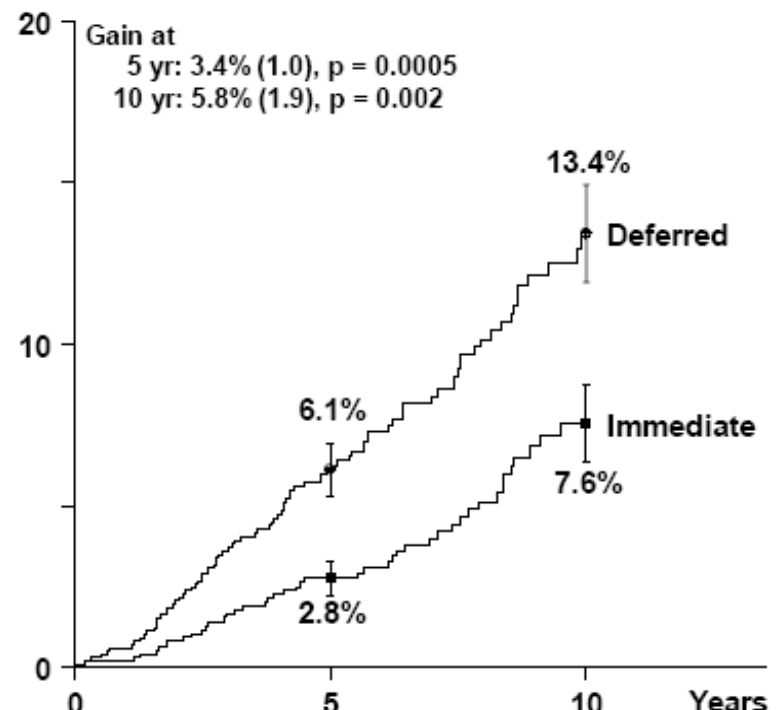
A: On statin before stroke:
stroke or perioperative death



Perioperative events/CEAs (%) + other events

Years 0-5		Years 5-10		
22/993 (2.2%)	+ 25	0/15 (0.0%)	+ 20	Immediate
9/259 (3.5%)	+ 56	2/69 (2.9%)	+ 32	Deferred

B: On statin before stroke:
non-perioperative stroke



Events/person-years

Years 0-5		Years 5-10		
25/4478 (0.6% pa)		20/2145 (0.9% pa)		Immediate
56/4483 (1.2% pa)		32/2084 (1.5% pa)		Deferred

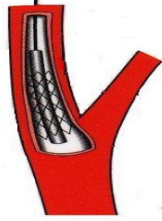
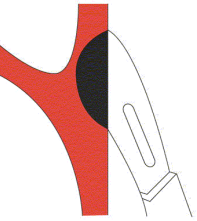
2%



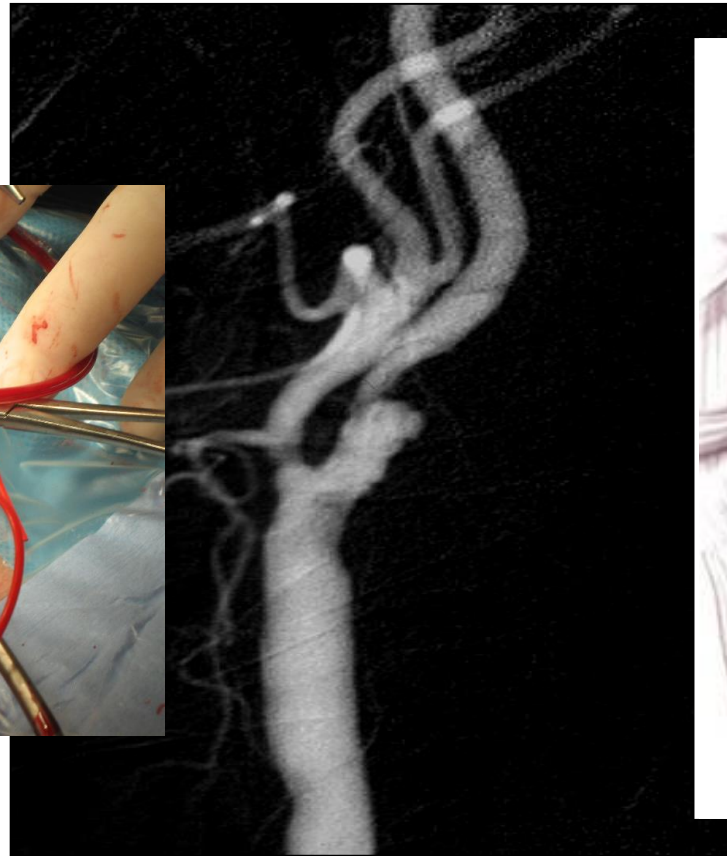
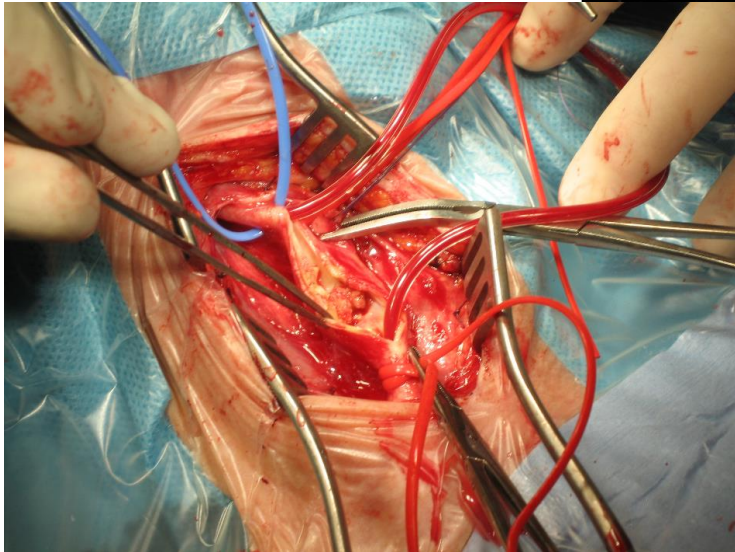
‘Asymptomatic’ - a misnomer?
– many patients in ACST-1
had previous stroke-type symptoms
or CT brain infarcts

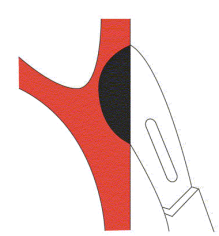
**‘Asymptomatic’ carotid stenosis patients
with previous symptoms or brain
infarction are higher risk**

**their long term stroke risk is ~50% higher
(similar to ‘recurrent stroke’ patients)**



ACST-2: Treatment for asymptomatic carotid artery stenosis: surgery or stenting?





**Stenting might be better than CEA –
no incision, quick discharge,
no cranial nerve damage...**

**patients won't want open surgery if stenting is safe
but we don't know yet....**

Recent (post CREST) guidelines clearly show the need for ACST-2

AHA Carotid Disease Management Guidelines (2011)

It is reasonable to perform CEA in asymptomatic patients who have > 70% stenosis (Evidence Level: A)

Prophylactic CAS *might* be considered in highly selected patients with asymptomatic carotid stenosis (Evidence Level: B)

Society for Vascular Surgery Carotid Guidelines (2011)

Asymptomatic > 60% stenosis should be considered for CEA (Evidence Level: A)

CAS *should not* be performed except as part of an on-going clinical trial (Evidence Level: B)

NICE Carotid Intervention Guidelines (2011)

“NICE encourages clinicians either to enter patients into the ACST-2 trial, or to submit data to the Endovascular Carotid Register”

RCP Stroke Guidelines (2012)

Surgery or stenting (CEA or CAS) for asymptomatic carotid artery stenosis should not routinely be performed unless as part of a randomised trial.

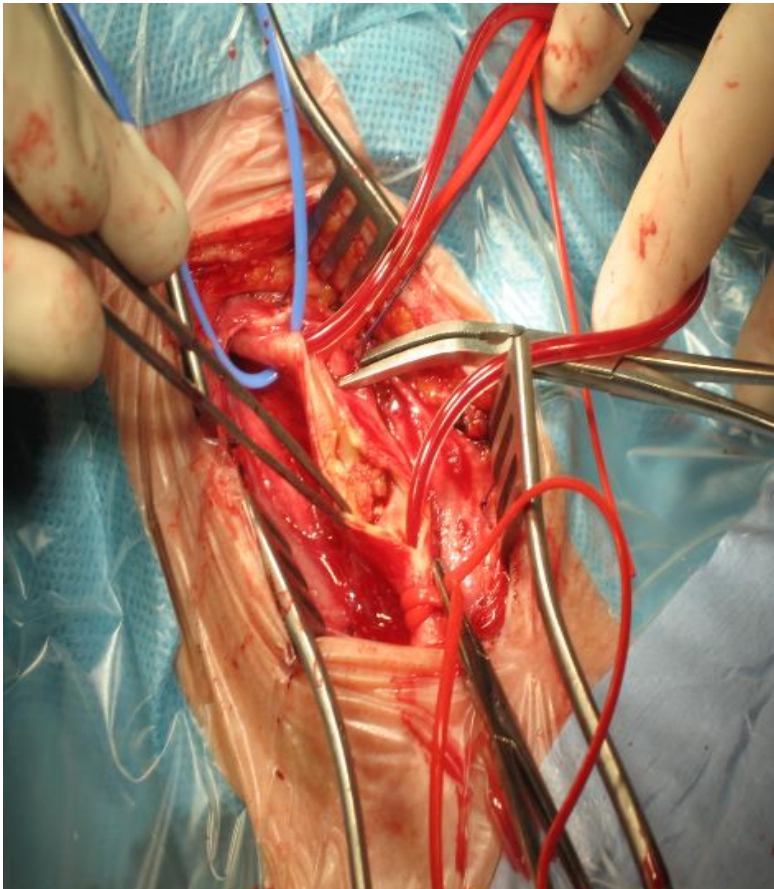
CEA vs CAS trials

Interventions for Carotid Stenosis

**- long-term evidence (as with ACST-1)
is of most importance**

... and this is changing

ICSS, SPACE - why operate for symptoms if stenting works as well or better?



...the longer term results : Lancet (2014)

4 year follow up

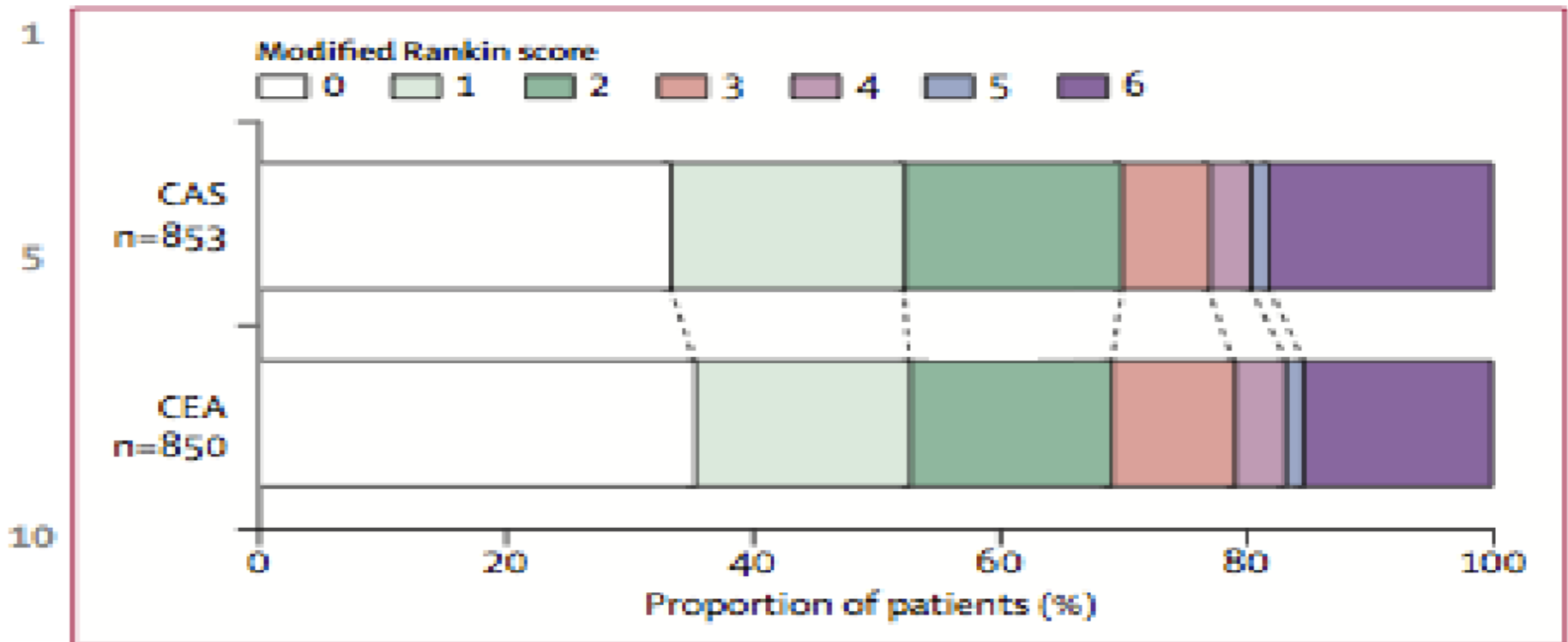
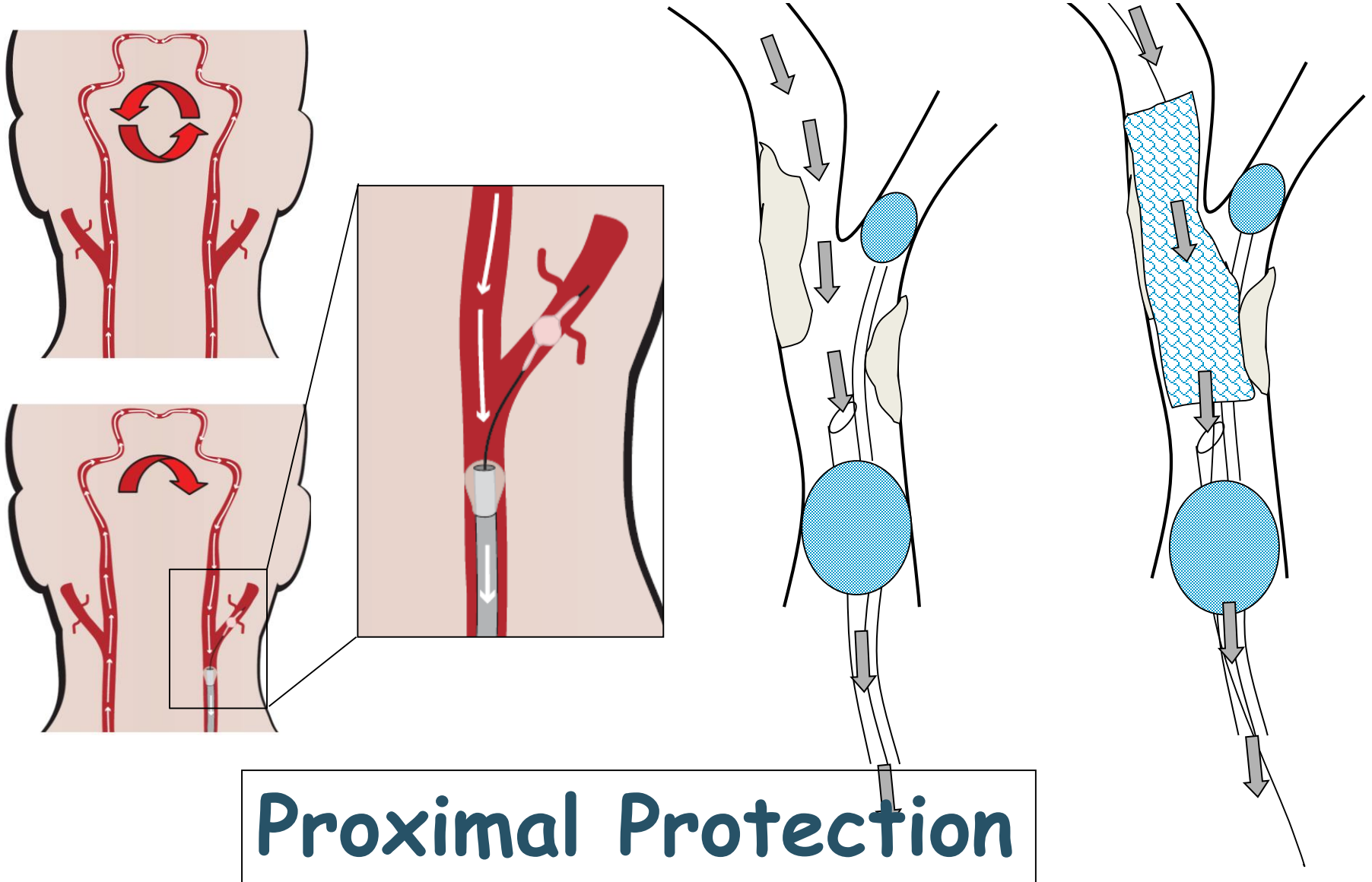
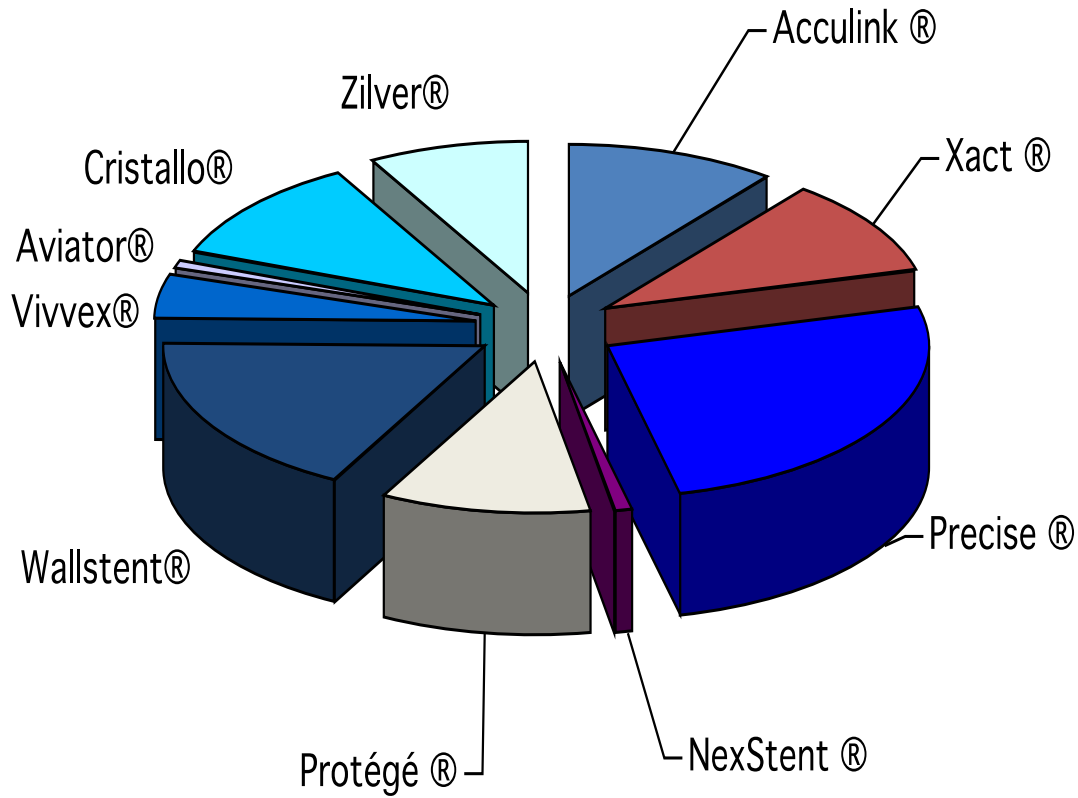
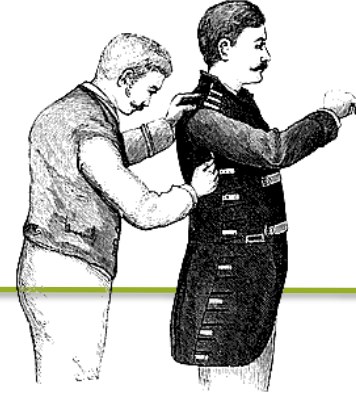
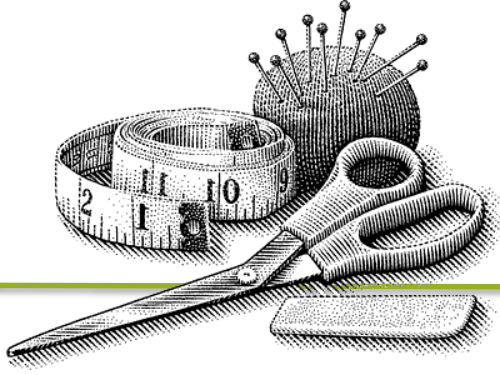


Figure 3: Functional ability measured by the modified Rankin Scale at the end of follow-up*


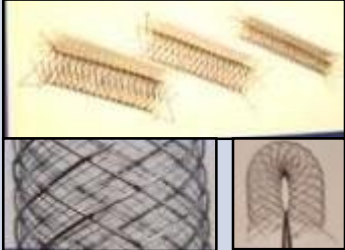

Techniques, devices, experience have all changed since the symptomatic trials...



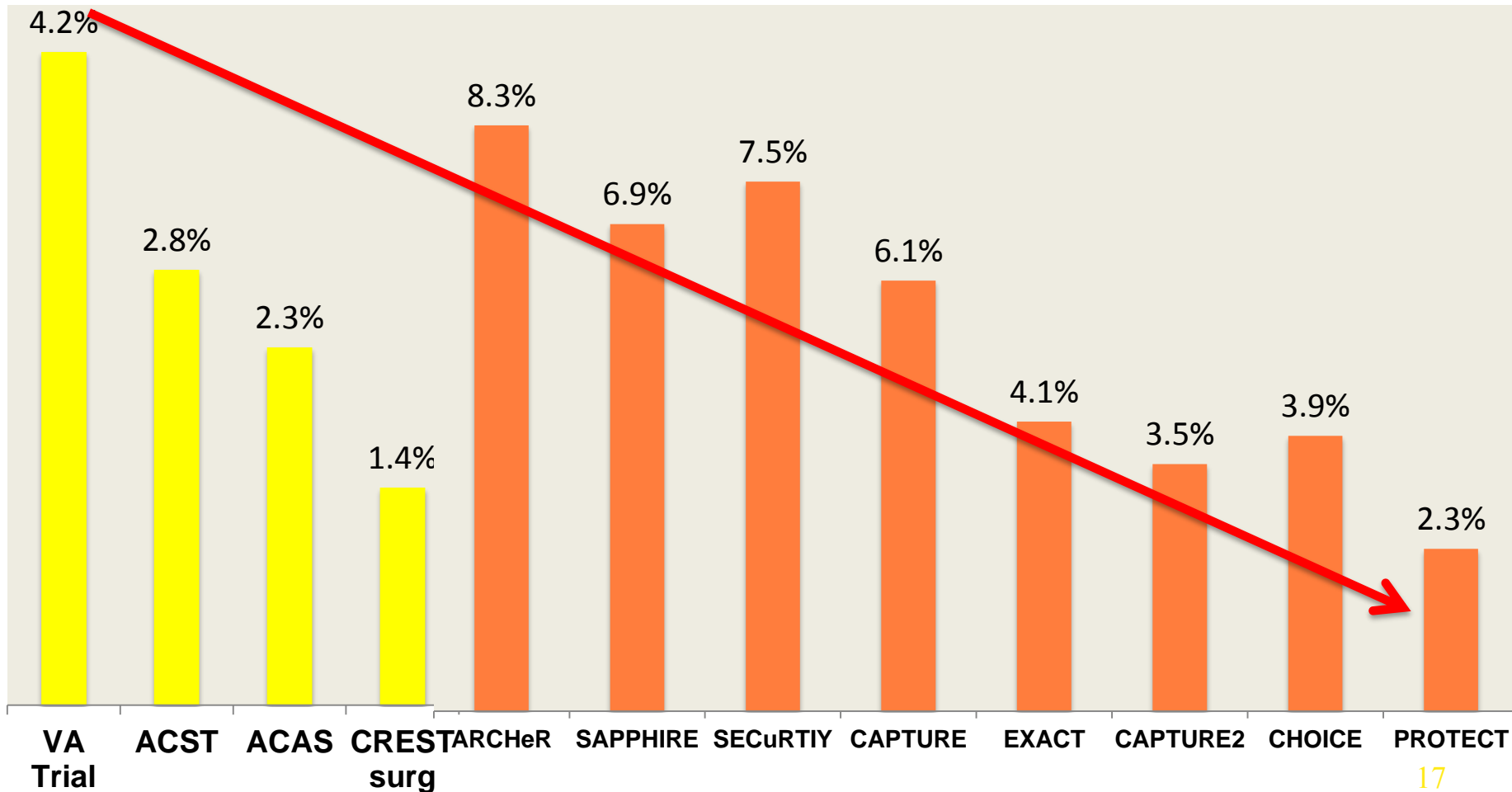
Tailored stent approach



Carotid Mesh Covered Stents

	Gore	Terumo Roadsaver	CGuard™
Design			
Aperture Size	500μ	375-500μ	150-180μ
Materials	PTFE mesh (Heparin coated) on nitinol stent	nitinol on nitinol	PET MicroNet™ on nitinol stent
(Delivery system/ Min Guide Cath)	5F/7F	5F/7F	6F/8F
Details	<ul style="list-style-type: none"> • Launched SCAFFOLD trial in Sept 2013 • PI: Bill Gray, MD • Target 351 pts • Has enrolled 100 pts. FDA has stopped trial requesting 6 mo F/U on these 100 before proceeding 	<ul style="list-style-type: none"> • Data on first 11 pts presented at LINC (Max Amor, MD) • Flexibility, plaque coverage and ability to conform to any anatomy mentioned as key benefits • Easy to recross (tapered ends) 	<ul style="list-style-type: none"> • Initial placements promising • 11 of 11 KOL's (LINC) felt our aperture size a benefit over larger • Data on MGuard MicroNet a "plus" for CGuard • Ability to dilate MicroNet at external bifurcation a potential benefit
	CONFIDENTIAL		

But procedural hazards of CEA and CAS are also improving in recent trials and registries



So.. the ACST-2 research question..

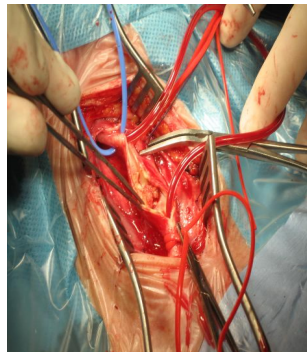
For asymptomatic patients with tight stenosis requiring intervention:

Which procedure is generally better
(in addition to good medical treatment)? :

carotid surgery (CEA)

or

carotid stenting (CAS)?



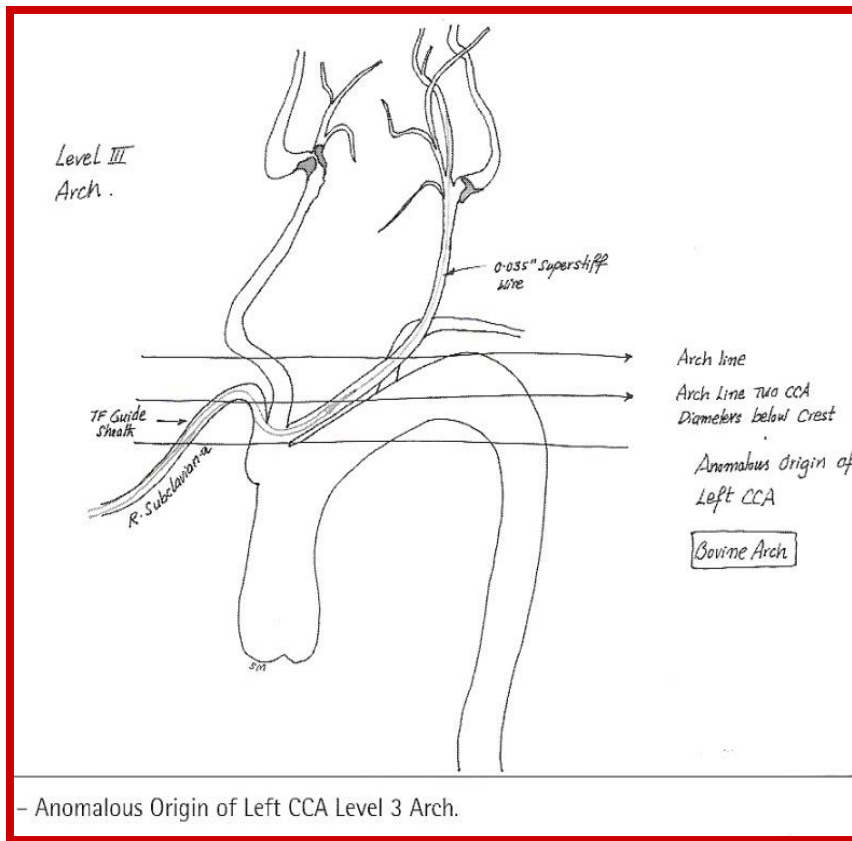
ACST-2: Experienced collaborators

207 centre/operators' experience to 2014:
(73 do both procedures)

Avoiding the old mistake of lack of experience !!!

	CEA	CAS
Total procedures	287	45,693
Median Experience [Years]	17	11
Median Procedures/operator	346	150

ACST-2 directly compares CEA vs CAS




if arch imaging
shows patients
are suitable for
both procedures
-
then randomise

Inclusion Criteria – centre-based

You decide which patients are suitable
for BOTH interventions

(then randomise)

ACST-2 - Stents and Protection Devices



<u>Stent</u>	<u>Device</u>	<u>Type</u>
Boston Wallstent (204)	Emboshield (196)	Filter
Cristallo Ideale (150)	Filterwire (154)	Filter
Abbott Xact (148)	Spider (108)	Filter
Cordis Precise (103)	Mo.Ma (108)	Prox occ
Ev3 Protégé® RX (87)	Accunet (55)	Filter
Abbott RX Acculink (85)	AngioGuard (41)	Filter
Boston Adapt (10)	Gore Flow Reversal (28)	Prox occ
ViVEXX (7)	Twin One (3) (87%)	Distal balloon

ACST-2:CEA vs CAS

Sex, Age, Co-morbidities:

Men	70%
Mean age	72 years
Ischaemic heart disease	36%
Diabetic	30%
Renal impairment	6%

ACST-2: CEA vs CAS

Stroke risk factors:

Atrial Fibrillation	6%
Age >75 yrs	39%
Previous stroke symptoms or infarct	43%

Medical Treatments:

BP drugs	85%
Lipid-lowering	86%
Anti-thrombotic	99%

- good compliance with drug therapy after joining
- direct patient feedback every year (includes drug names and doses)

ACST-2: Blinded Procedural hazards 1500 patients (≤ 30 days)

Disabling/fatal stroke or fatal MI
much lower than in symptomatic trials

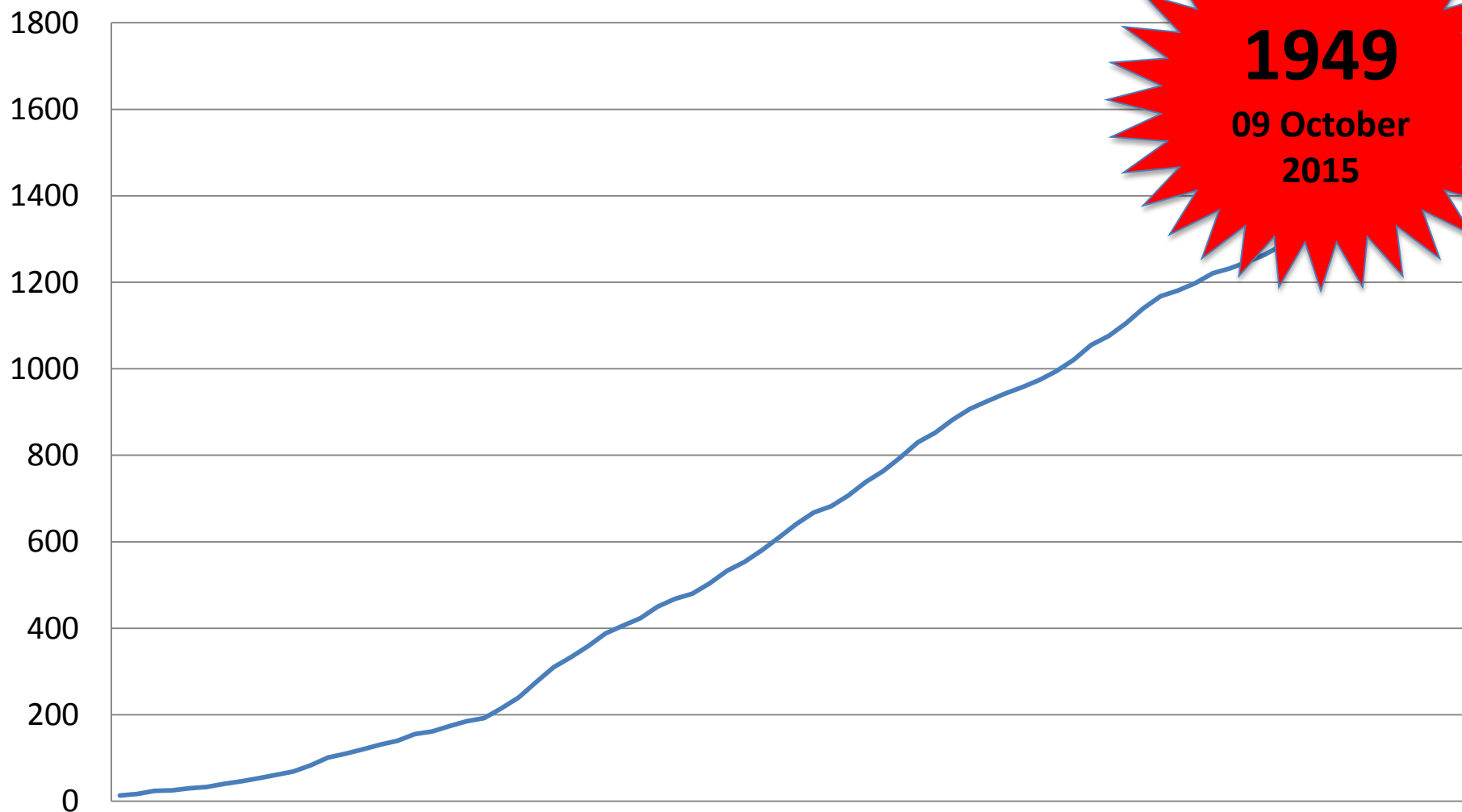
Lower than ACST-1 (CEA) 1.7%

Despite increasing age, and more risk factors for
stroke compared with ACST-1;

ACST-2 procedural risk (CEA and CAS)

1.0%

ACST-2 - Target 3600 patients – by end of 2019



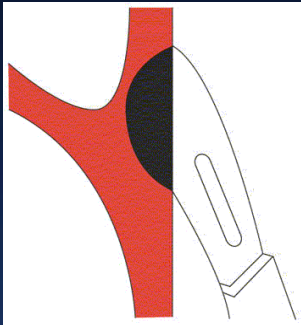
ACST-2

A very European Trial



acst-2.org

Thank You and keep enrolling



The ACST-2 Investigators

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