

Post CVA Management

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Disclosures

- **Grants/Research Support:** Allergan, Amgen, Ipsen, Servier
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- **Steering Committees:** REFLEX, MOBILITY, Allergan 116
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- **Investments:** None
- **Guideline Committees:**
 1. CHEP
 2. Canadian Cardiovascular Society
 3. Canadian Best Practice Recommendations for Stroke Care –
 1. Co Chair Prevention Guidelines 2014-2020
 2. Committee Member Rehabilitation Guidelines 2012 -2014
 3. Steering Committee 2018-

All data presented in this presentation may be
found at:

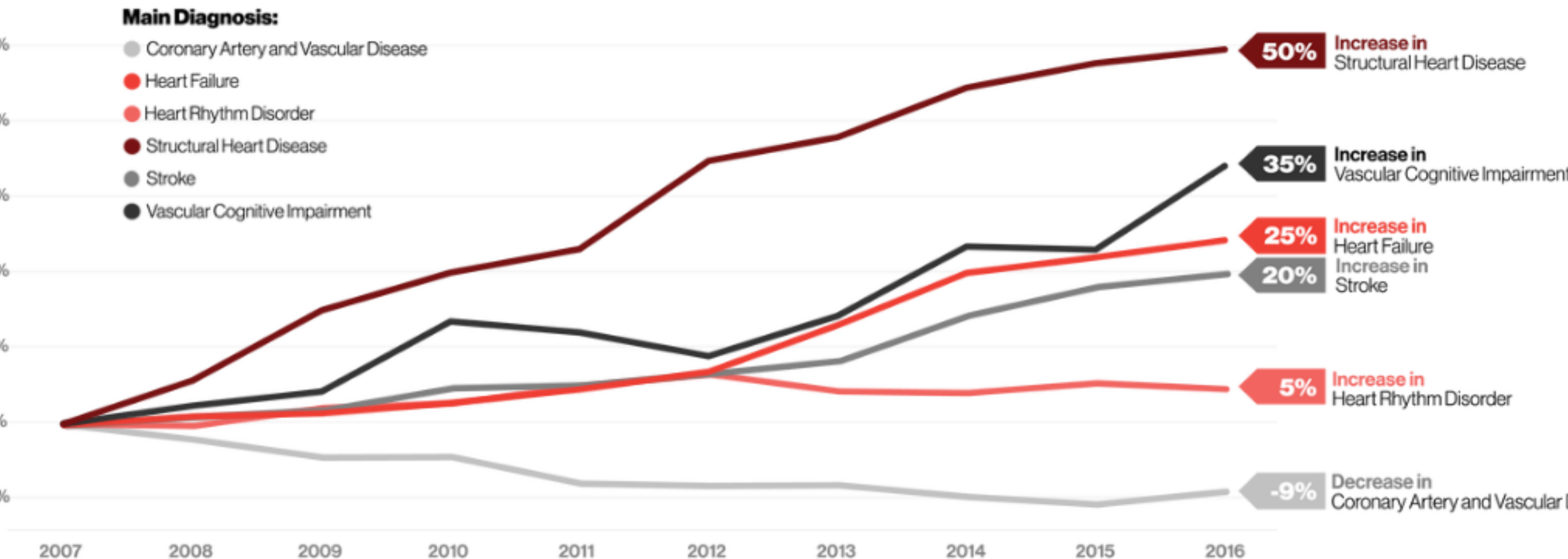
www.strokebestpractices.ca

The new guidelines will be published in the International Journal of stroke
in February of 2021

Introduction

- There are 62,000 strokes in Canada each year.
- 1 in 3 strokes after age 65 is attributed to PAF
- 80% of people survive stroke.
- There are more than 400,000 Canadians living with long-term disability from stroke and this will almost double in the next 20 years.
- There are eight million caregivers across Canada, providing at least \$25 billion of unpaid care every year

Trends in hospitalization over the past decade in Canada



Source Data: Heart & Stroke's analysis of data from the Canadian Institute for Health Information's Discharge Abstract Database for 2007-2017
Data from Quebec, Yukon and Nunavut were not available in this data.



What if I do not experience all of the FAST signs?

Not everyone will experience all of the signs of stroke. If you experience any of the FAST signs, call 9-1-1 immediately.

Face is it drooping?
Arms can you raise both?
Speech is it slurred or jumbled?
Time to call 9-1-1 right away.

Act **F A S T** because the quicker
you act, the more of the person you save.

Q Acute Stroke Review in 3 slides - thrombolysis

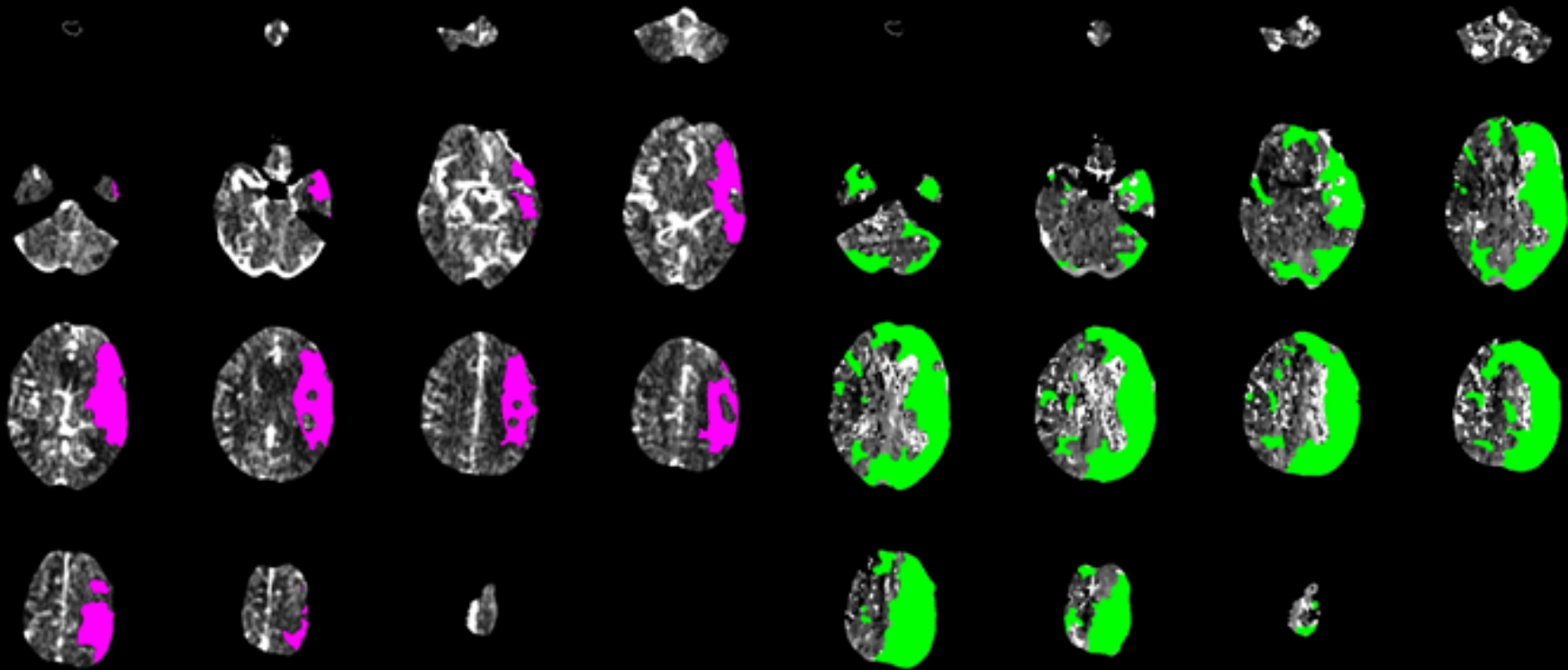
- IV alteplase may be administered for acute ischemic stroke in patient's presenting within:
 - A. 3 hours of symptom onset
 - B. 4.5 hours of symptom onset
 - C. 6 hours of symptoms onset
 - D. 4.5 hours of symptom onset and in select patients > 4.5 hours

Q Acute Stroke Review in 3 slides - thrombectomy

Mechanical thrombectomy for acute ischemic stroke is recommended in select patients presenting within:

- A. 3 hours from symptom onset
- B. 4.5 hours from symptom onset
- C. 6 hours from symptom onset
- D. 6 hours from symptom onset and in select patient up to 16 hours

CBF/Tmax Mismatch



CBF<30% volume: 163 ml

Tmax>6.0s volume: 520 ml

Mismatch volume: 357 ml
Mismatch ratio: 3.2

RAPID
Not for primary diagnosis.

Tmax Thresholds

Q

TIA/Minor stroke management

- Patients with symptoms of TIA or Minor Stroke are at highest risk for having a recurrent stroke within:
 1. 24 hours
 2. 48 hours
 3. 72 hour
 4. 1 week
 5. 1 month

Stroke rates following TIA

- The risk of recurrent stroke after a transient ischemic attack has been reported as 12 to 20 percent within 90 days, and the risk is “front-loaded”, with half of the strokes occurring in the first two days following initial symptom onset.
- The seven-day risk of stroke following a transient ischemic attack can be as high as 36 percent in patients with multiple risk factors
- A recent study by the TIARegistry.Org group reported updated rates that were less than half that expected from historical cohorts and could be explained by better and faster implementation of secondary stroke prevention strategies in this cohort through rapid-access TIA clinics

Q

Investigations following a TIA/Stroke

Following a Stroke or TIA which of the following investigations should be ordered.

- A. CT Head, Carotid Doppler and trans thoracic echocardiogram.
- B. CT Head, CTA of the Carotids, 24 hour cardiac monitoring.
- C. CT Head, CTA COW and Carotids, 24 hour cardiac monitoring and lipid profile.
- D. CT Head, CTA COW and Carotids, 24 hour cardiac monitoring and lipid profile and a trans thoracic echocardiogram.

Food for thought

- In individuals where no etiology of stroke is found and investigation to not help confirm a cause. Consideration for prolonged cardiac monitoring (30 day loop recorder, REVEAL device) should be considered.
- Symptoms suggestive of a cardioembolic event include:
 - Wedge shaped infarct
 - Multiple infarct
 - Stroke involving loss of cortical functions: language, speech, sensory extinction.
- In these patients prolonged cardiac monitoring has a yield of 25% of detecting PAF

Q Antiplatelet agent use following TIA/Stroke

Following a TIA or a non hemorrhagic minor stroke patients should be placed on :

- A. ASA 81mg
- B. ASA160 mg
- C. Loading dose of Plavix 300-600mg and ASA 160mg followed by ASA 81 mg and Plavix 75 daily x 21 days
- D. ASA 81 mg and Ticagrelor 180mg loading dose followed by 90mg BID for 21 days.
- E. C or D

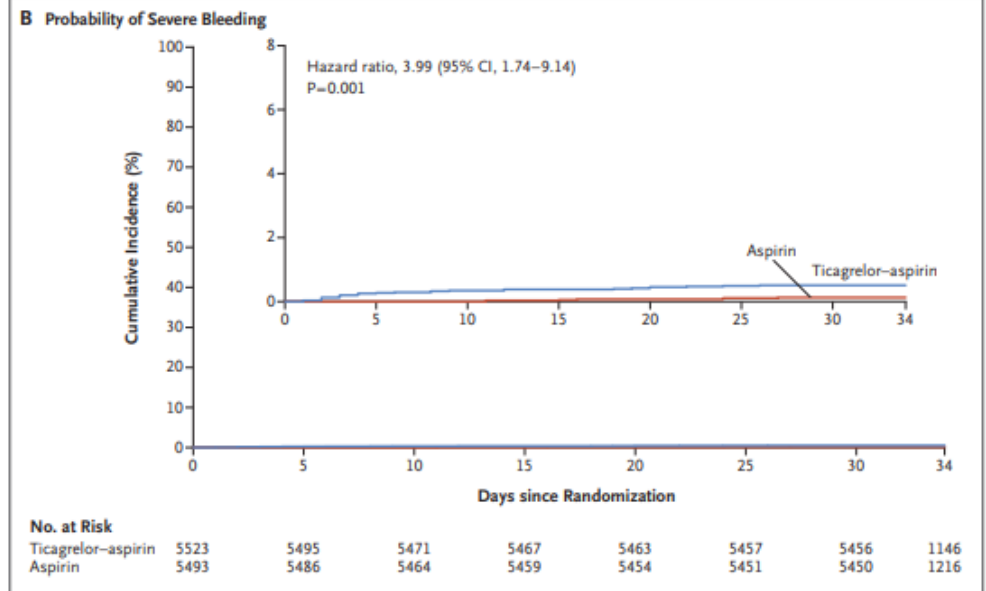
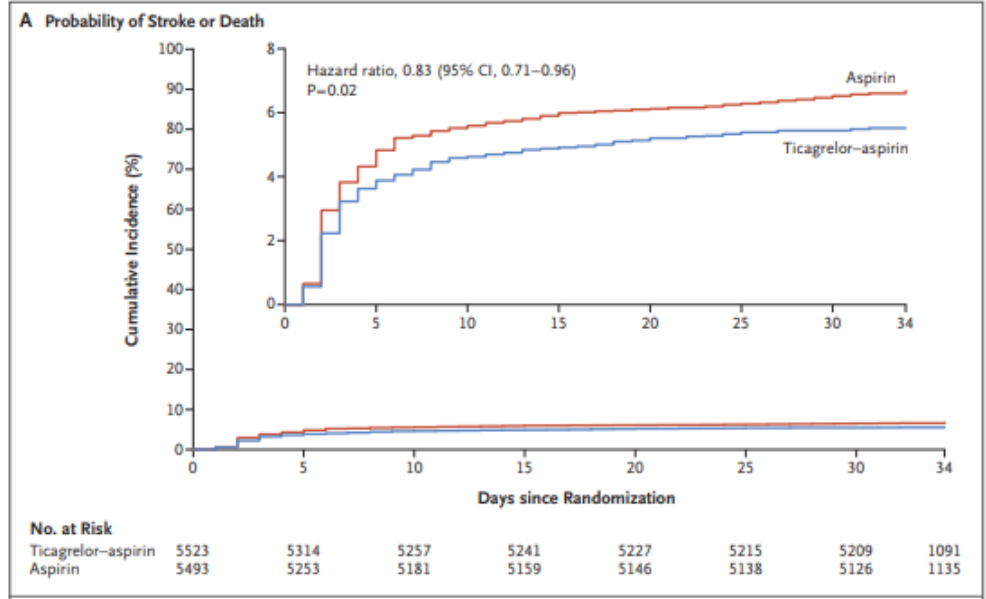
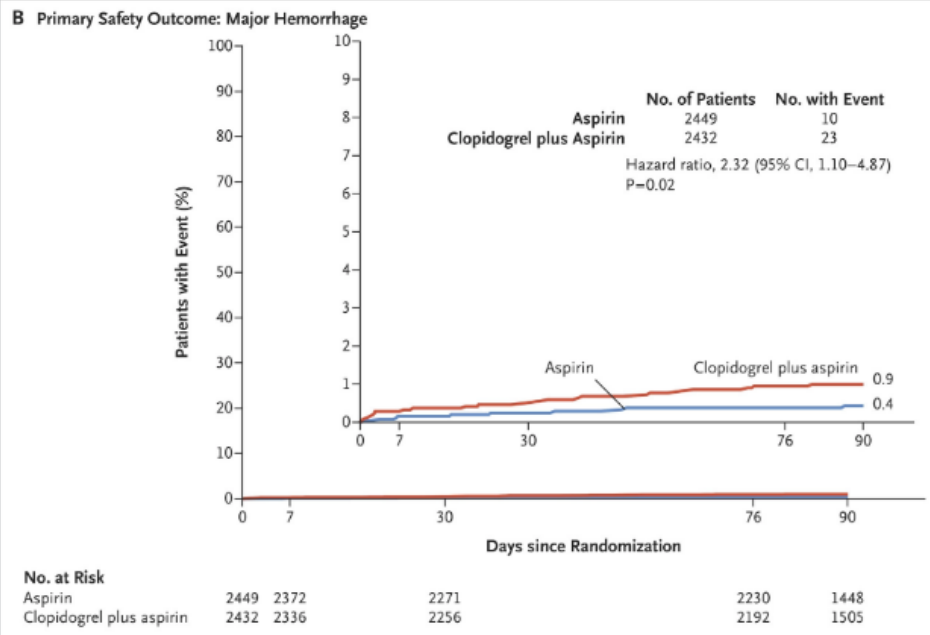
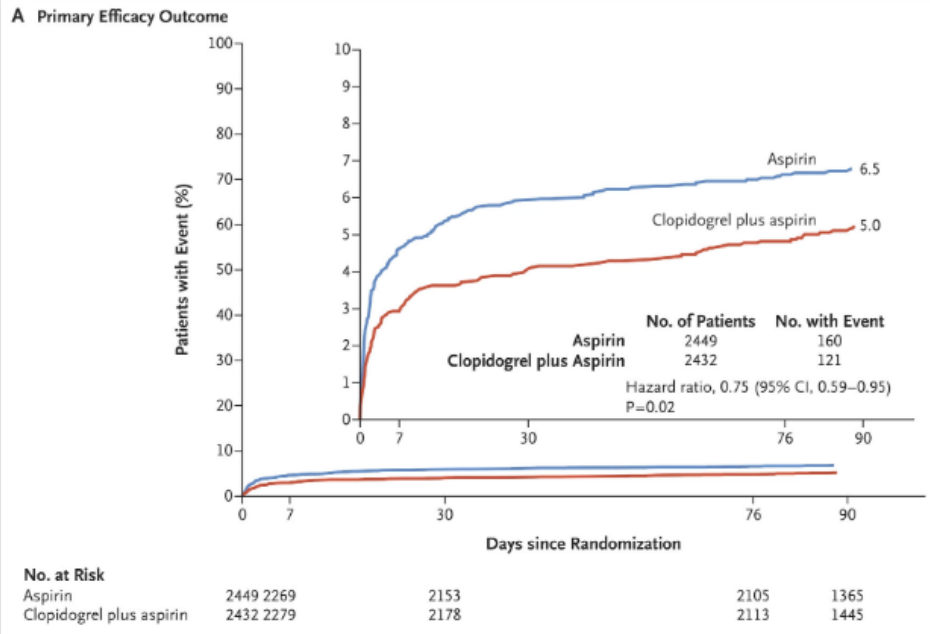


Figure 2. Cumulative Incidence of the Primary and Safety Outcomes.
In each panel, the inset shows the same data on an enlarged y axis.

Q

BP goals post stroke

Mr Smith has a stroke. He is not diabetic. His goal BP for secondary prevention is:

- A. <140/80 mmHg
- B. <130/80 mmHg
- C. <120/80 mmHg

His Brother Mr. Smith has a lacunar stroke. He is diabetic. His goal BP for secondary prevention is:

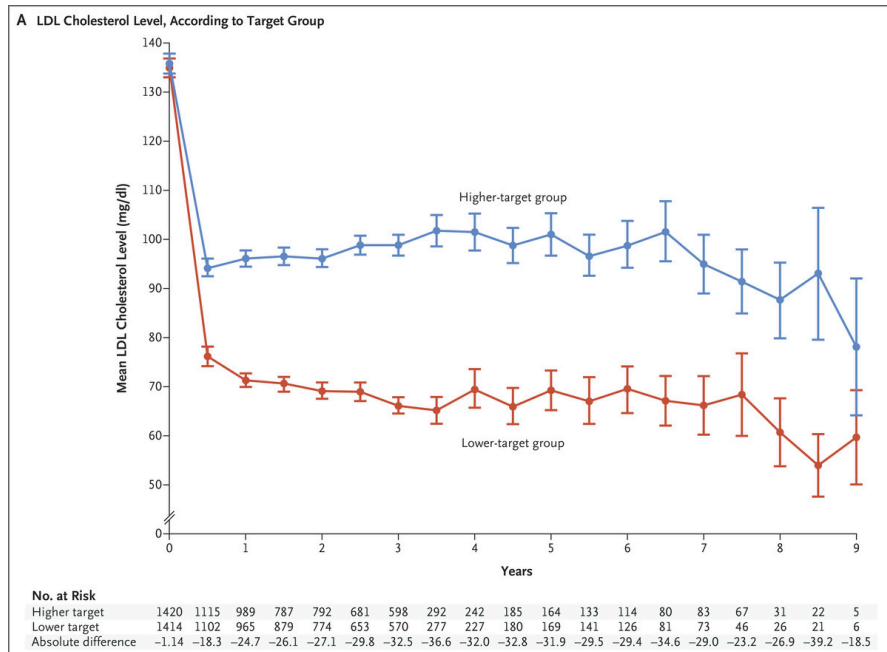
- A. <140/80 mmHg
- B. <130/80 mmHg
- C. <120/80 mmHg

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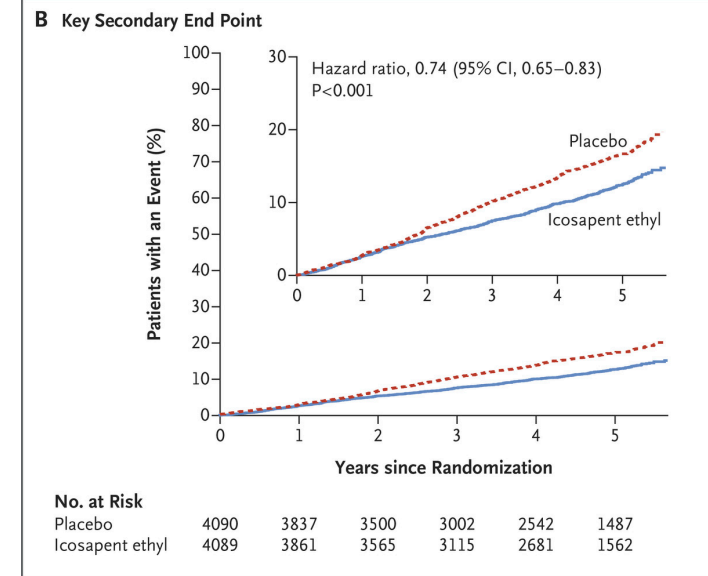
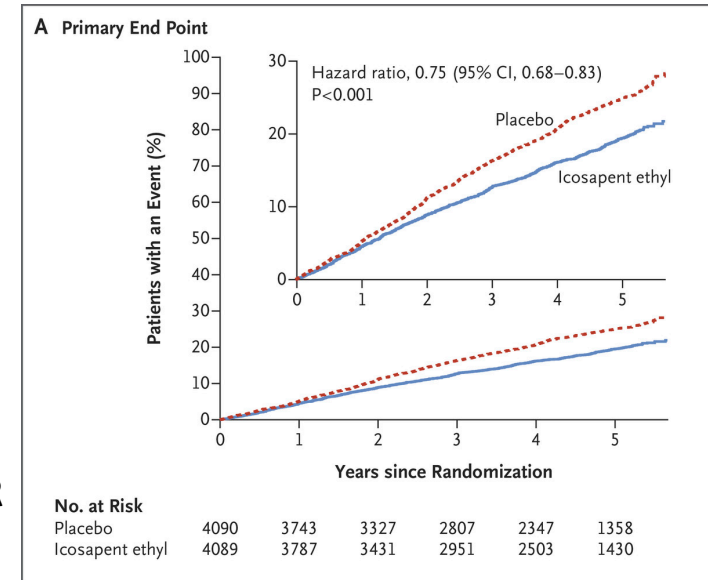
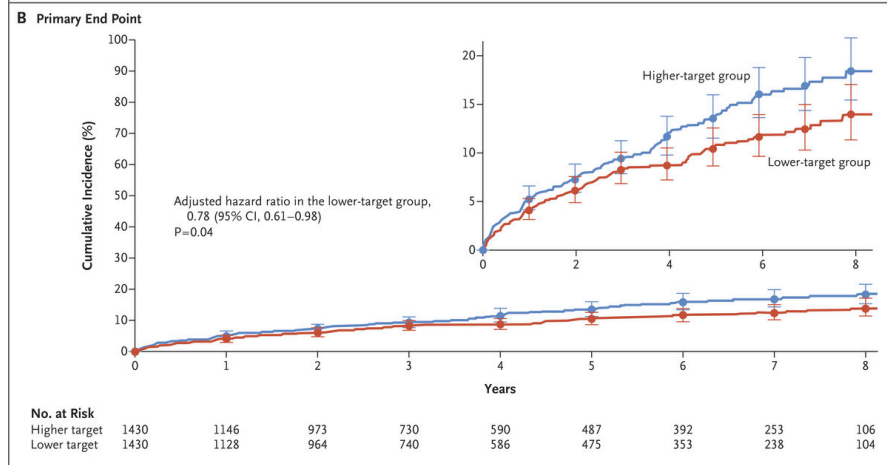
Lipid management

- Following an ischemic stroke the target LDL is:
 - A. <2.0 mmol/L
 - B. <1.8 mmol/L
 - C. <1.3 mmol/L
 - D. <2.0 mmol/L or a $>50\%$ reduction in LDL cholesterol from baseline.

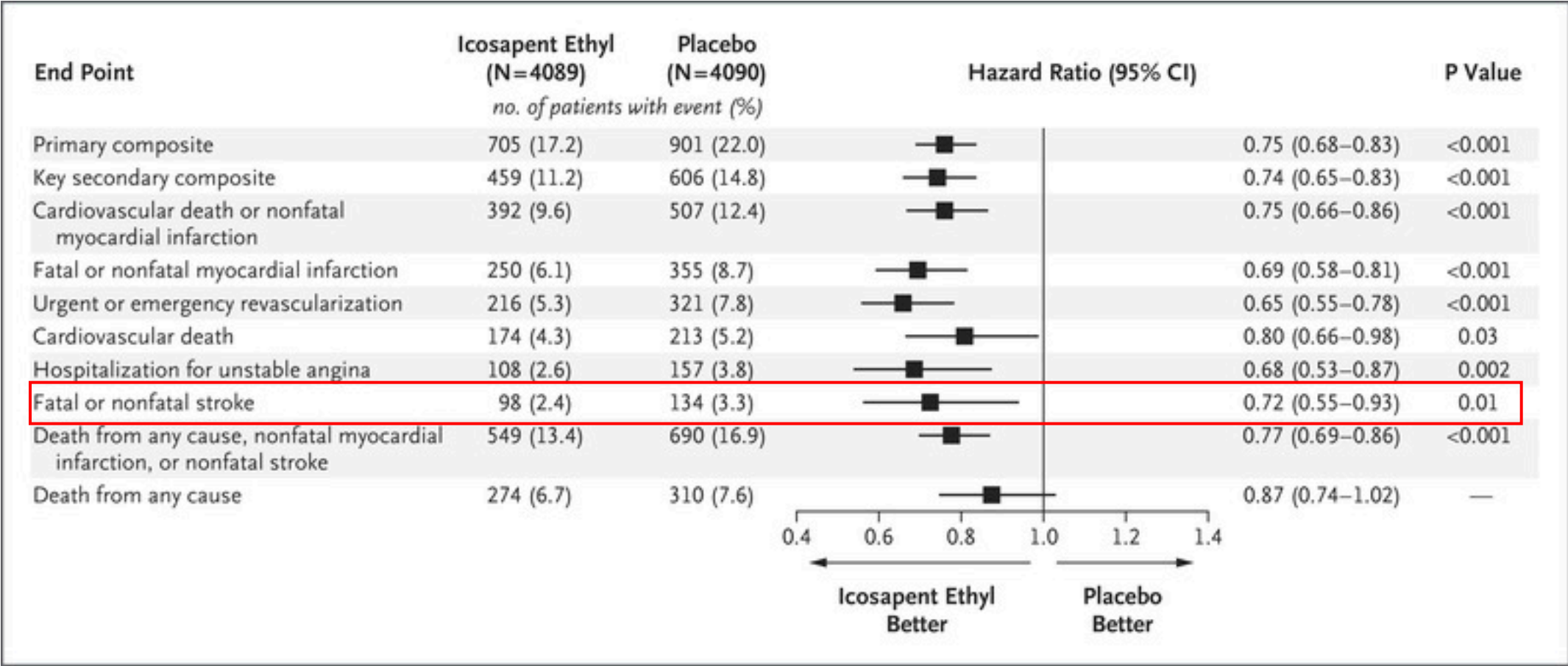
2 new trials to be aware of however



- SPARCL
1. 16% RR risk stroke
 2. 33% RR with carotid stenosis
 3. LDL < 1.8 mmol/l 28% RR
 4. Metanalysis: 20% reduction for every 1.0mmol per litre in LDL.



Cardiovascular Risk Reduction with Icosapent Ethyl for Hypertriglyceridemia



Patients with cardiovascular disease or diabetes and other RF, on statin therapy, fasting triglycerides of 1.52 to 5.63 mmol/L & a LDL of 1.06 to 2.59 mmol/L

PAF and anticoagulation: Similarities and Relevant Differences

	Apixaban (Eliquis)	Dabigatran (Pradaxa)	Edoxaban (Lixiana)	Rivaroxaban (Xarelto)
Mechanism of action	Direct Factor Xa inhibitor	Direct thrombin inhibitor	Direct Factor Xa inhibitor	Direct Factor Xa inhibitor
Oral bioavailability	~50%	~6.5%	62%	80-100%
Food effect	No	No	No	Yes (needs to be taken with food)
Pro-drug	No	Yes	No	No
Renal clearance	~27%	85%	50%	36%
Mean half-life (t_{1/2})	~12 h	11-17 h	10-14 h	5-13 h
T_{max}	3-4 h	0.5-2 h	1-2 h	2-4 h
Recommended daily dose	5 mg BID	150 mg BID	60 mg QD	20 mg QD

- Canadian Stroke Best Practice & CCS Guidelines recommend Direct oral anticoagulants (DOACS) over Warfarin for the prevention of stroke in patients with Atrial Fibrillation

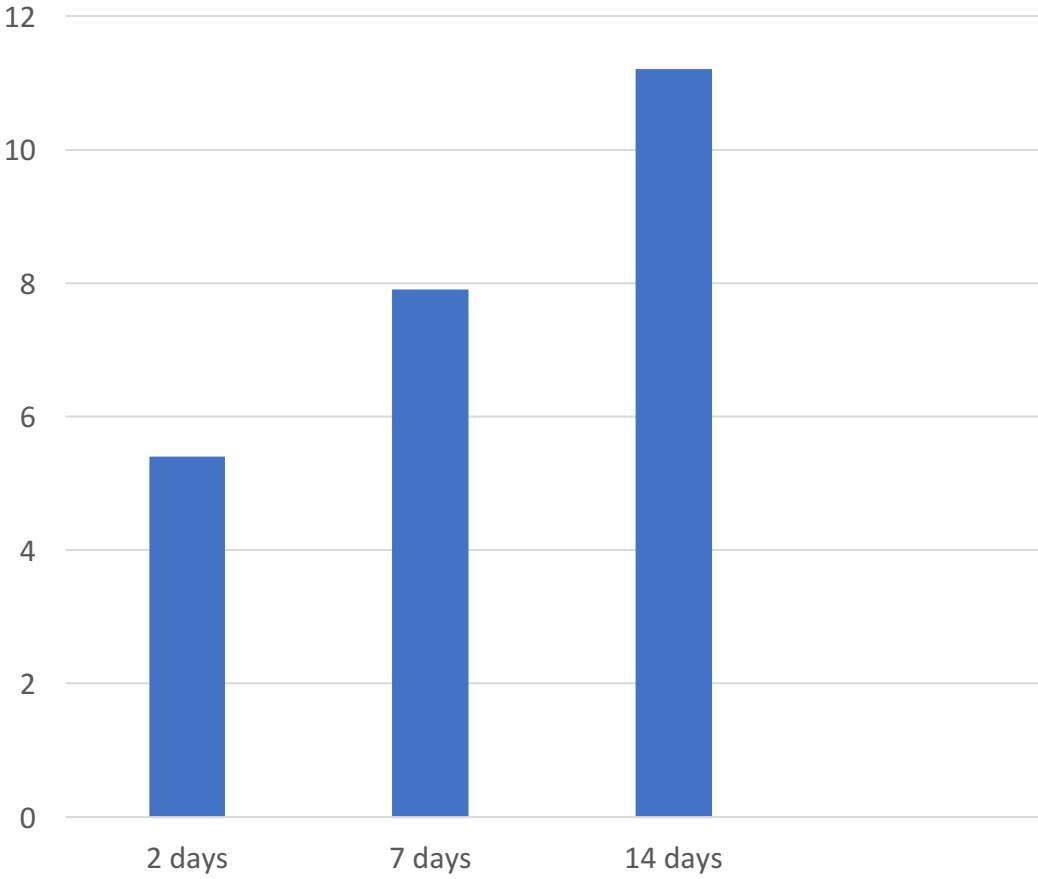
Recurrent stroke on anticoagulation:

Do the following

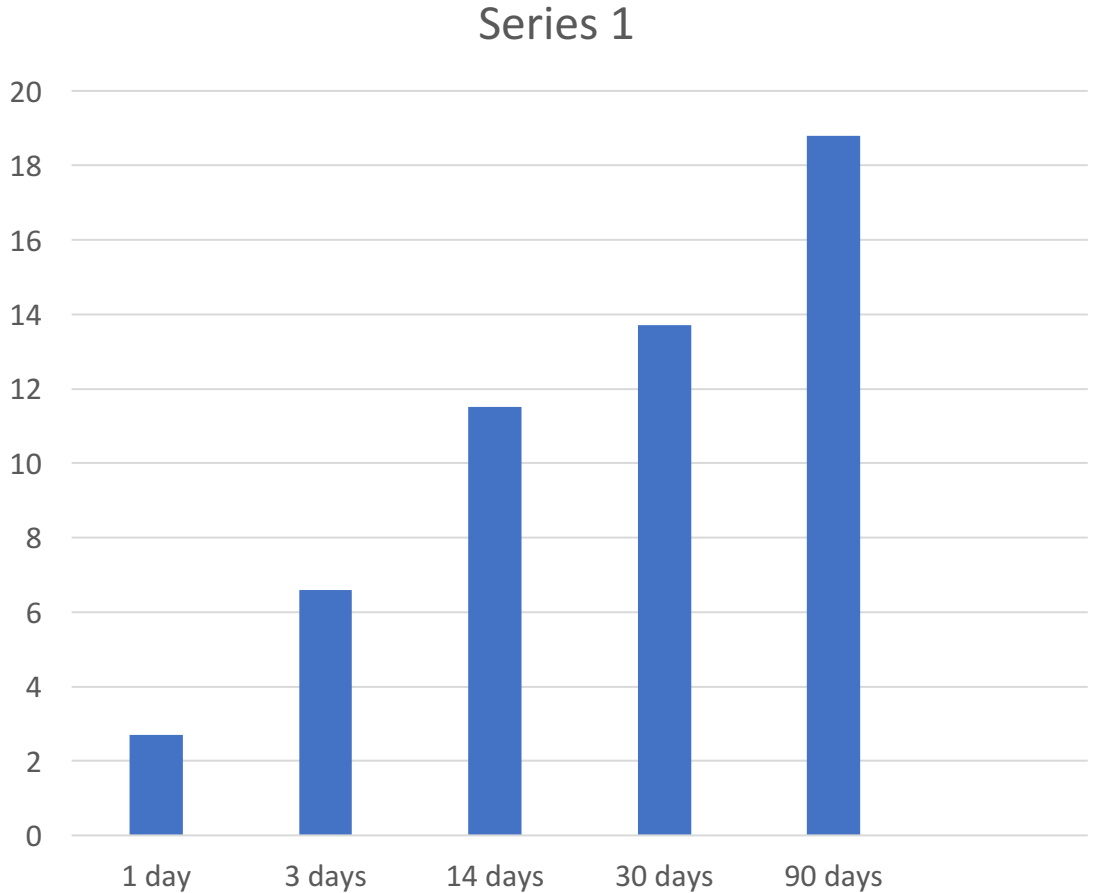
- A. Address medication nonadherence
- B. Ensure correct DOAC dosing or warfarin INR control
- C. Avoid DOAC drug-drug interactions
- D. Investigate for and treat other potential stroke etiologies
- E. Assure all vascular risk factors have been addressed.

There is no evidence that adding ASA helps and will increase bleeding risk

Timing of Revascularization for CEA



ANYSCAPE study Stroke. 2013;8(4):220-7



Neurology. 2016;86(6):498-504

Q

Exercise

Screening for aerobic training should be initiated after a cerebrovascular event (stroke or TIA) when the patient is medically stable. Current guidelines suggest that aerobic exercise be done:

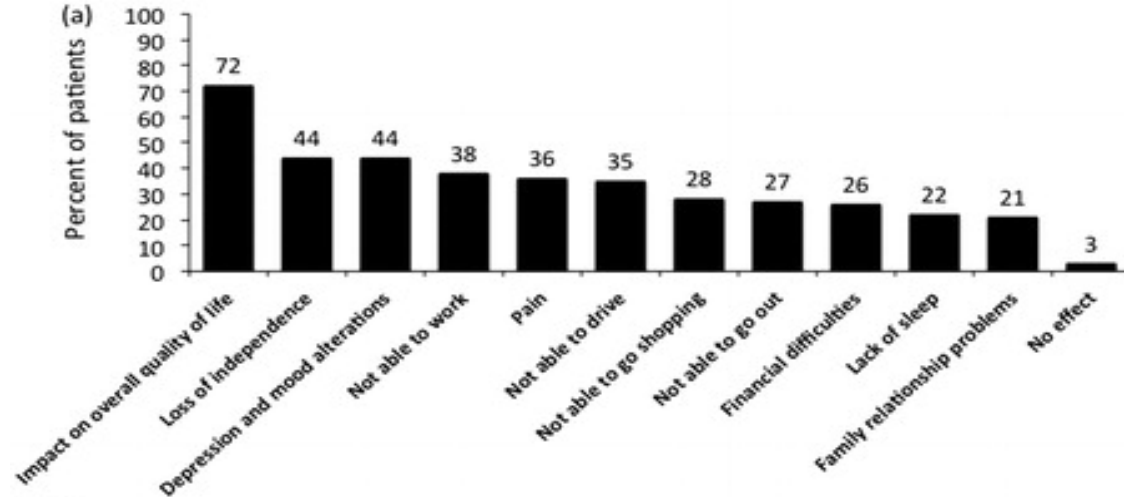
- A. Three 60 minute sessions per week
- B. Seven 10 minute sessions per week
- C. 4-7 sessions per week to accumulate at least 150 minutes
- D. 4-6 sessions per week to accumulate at least 200 minutes

Q

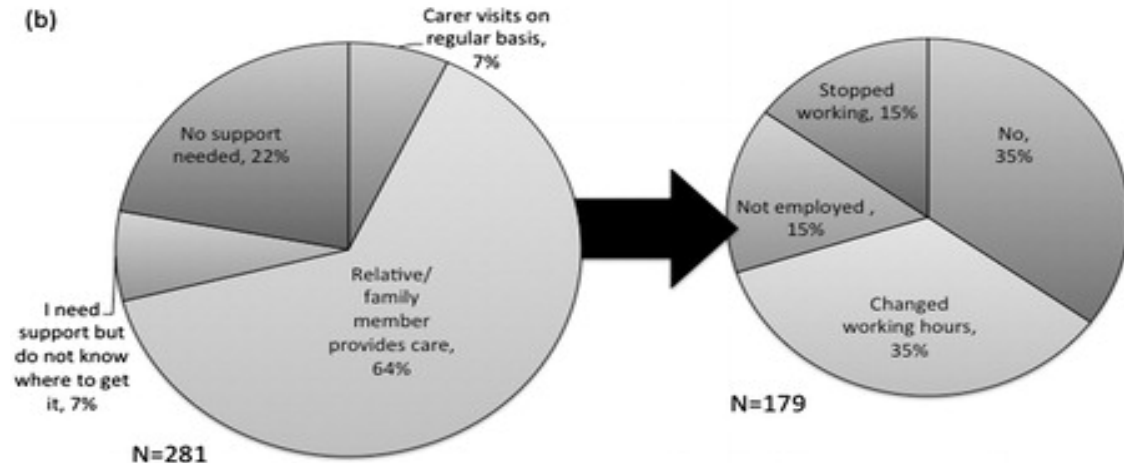
Spasticity

- The development of spasticity in need of treatment after 3 months from stroke is:
 - A. 1 - 2%
 - B. 10 -15%
 - C. 15 – 20%
 - D. 20 -25%
 - E. Spasticity does not develop once a patient has left rehabilitation.

Impact of spasticity on daily life (a) and patient daily life (b) impact on family carers.



N=281



Q. What kind of support are you receiving for daily life activities?

Q. Did they need to give up their job to support you?

Common Postures of Spasticity

Picture Guide: Upper Limb

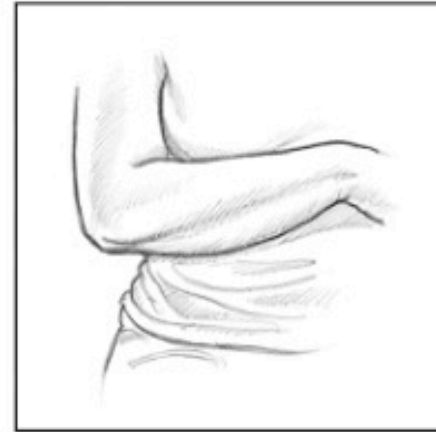
Adducted shoulder
with internal rotation



Flexed elbow



Pronated forearm



Flexed wrist



Flexed fingers



Thumb-in-palm



Clenched fist



David M. Simpson, et al. PM&R, Volume 9, Issue 2, 2017, 136–148

These slides have been created independently. Some information may not be consistent with the approved Canadian product monographs.

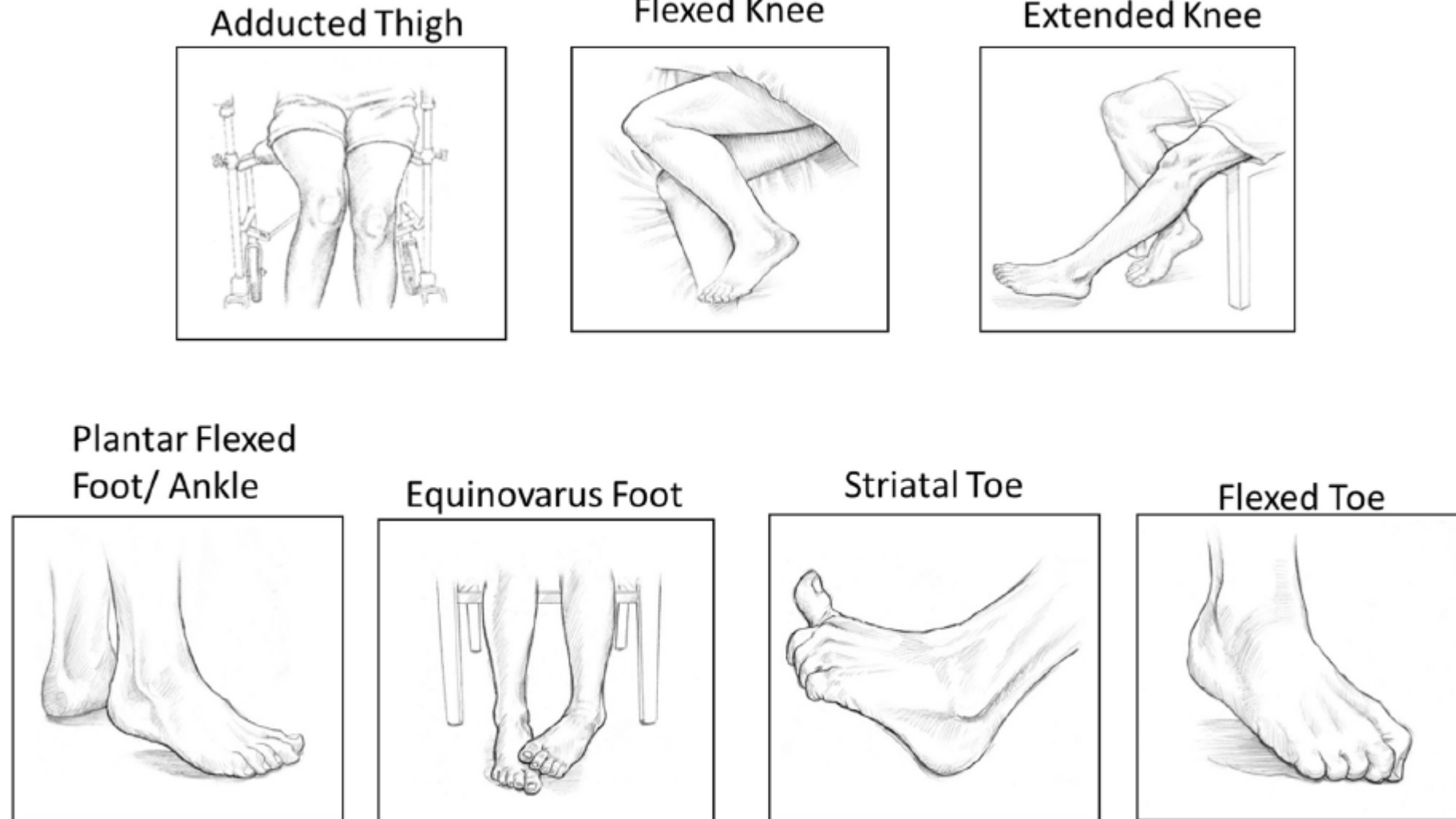


Figure 1. Common postures of spasticity.

Q What % of stroke survivors have unmet evidence based treatable needs 5-10 years post stroke?

- A. 0-10%
- B. 10-20%
- C. 30-40%
- D. 40-50%
- E. 50-75%

POST-STROKE Checklist



HEART & STROKE FOUNDATION

CANADIAN Stroke BEST PRACTICE RECOMMENDATIONS

Patient Name: _____ Date Completed: _____

COMPLETED BY: HEALTHCARE PROVIDER PATIENT FAMILY MEMBER OTHER

SINCE YOUR STROKE OR LAST ASSESSMENT

1 Secondary Prevention

Have you received medical advice on health-related lifestyle changes or medications to prevent another stroke?

NO

Refer patient to primary care providers for risk factor assessment and treatment if appropriate, or secondary stroke prevention services.

YES

Continue to monitor progress

2 Activities of Daily Living (ADL)

Are you finding it more difficult to take care of yourself?

NO

Continue to monitor progress

YES

Do you have difficulty:
 dressing, washing, or bathing?
 preparing hot drinks or meals?
 getting outside?
 If **Yes** to any, consider referral to home care services; appropriate therapist; secondary stroke prevention services.

3 Mobility

Are you finding it more difficult to walk or move safely (i.e., from bed to chair)?

NO

Continue to monitor progress

YES

Are you continuing to receive rehabilitation therapy?
 No. Consider referral to home care services; appropriate therapist; secondary stroke prevention services.
 Yes. Update patient record; review at next assessment.

4 Spasticity

Do you have increasing stiffness in your arms, hands, or legs?

NO

Continue to monitor progress

YES

Is this interfering with activities of daily living?
 No. Update patient record; review at next assessment.
 Yes. Consider referral to rehabilitation service; secondary stroke prevention services; physician with experience in post-stroke spasticity (e.g., physiatrist, neurologist).

5 Pain

Do you have any new pain?

NO

Continue to monitor progress

YES

Ensure there is adequate evaluation by a healthcare provider with expertise in pain management.

6 Incontinence

Are you having more problems controlling your bladder or bowels?

NO

Continue to monitor progress

YES

Consider referral to healthcare provider with experience in incontinence; secondary stroke prevention services.

SINCE YOUR STROKE OR LAST ASSESSMENT

7 Communication

Are you finding it more difficult to communicate?

NO

Continue to monitor progress

YES

Consider referral to speech language pathologist; rehabilitation service; secondary stroke prevention services.

8 Mood

Do you feel more anxious or depressed?

NO

Continue to monitor progress

YES

Consider referral to healthcare provider (e.g., psychologist, neuropsychologist, psychiatrist) with experience in post-stroke mood changes; secondary stroke prevention services.

9 Cognition

Are you finding it more difficult to think, concentrate, or remember things?

NO

Continue to monitor progress

YES

Is this interfering with your ability to participate in activities?
 No. Update patient record; review at next assessment.
 Yes. Consider referral to healthcare provider with experience in post-stroke cognition changes; secondary stroke prevention services; rehabilitation service; memory clinic.

10 Life After Stroke

Are you finding it more difficult to carry out leisure activities, hobbies, work, or engage in sexual activity?

NO

Continue to monitor progress

YES

Consider referral to stroke support organization (local/provincial support group, Heart and Stroke Foundation of Canada Living with Stroke program); leisure, vocational, or recreational therapist.

11 Personal Relationships

Have your personal relationships (with family, friends, or others) become more difficult or strained?

NO

Continue to monitor progress

YES

Schedule next primary care visit with patient and family member(s) to discuss difficulties.
 Consider referral to stroke support organization (local/provincial support group, Heart and Stroke Foundation of Canada); healthcare provider (e.g., psychologist, counsellor, therapist) with experience in family relationships and stroke.

12 Fatigue

Are you experiencing fatigue that is interfering with your ability to do your exercises or other activities?

NO

Continue to monitor progress

YES

Discuss fatigue with Primary Care provider.
 Consider referral to home care services for education and counselling.

13 Other Challenges

Do you have other challenges or concerns related to your stroke that are interfering with your recovery or causing you distress?

NO

Continue to monitor progress

YES

Schedule next primary care visit with patient and family member(s) to discuss challenges and concerns.
 Consider referral to healthcare provider; stroke support organization (local or provincial support group, Heart and Stroke Foundation of Canada).

