

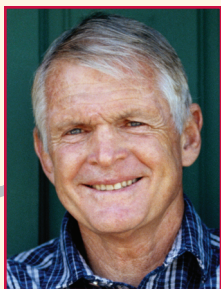
# A Quick Course in Stroke Prevention

Cerebrovascular disease remains a common neurologic problem and its incidence is likely to increase over time. It is strongly recommended that patients be aggressively investigated and the risk factors well managed. Unfortunately, many such individuals continue to be hypertensive or have high cholesterol.

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## Case Quiz

- Mitch, 56, has not been to a physician's office in "decades."
- After playing soccer with friends, he experienced a five-minute episode where he was unable to speak and his right side felt heavy. His mind felt clear and he knew exactly what he wanted to say, but the words came out garbled.
- After the five minutes, he started to recover; his recovery was complete within 45 minutes from the onset of his symptoms.
- He is overweight; most of the obesity is restricted to his trunkal region.
- Blood pressure: 180/110 mmHg.
- Total cholesterol: 6.2 mmol/L (low-density lipoprotein cholesterol: 4.1 mmol/L).
- Fasting glucose: normal.
- Electrocardiogram shows mild left ventricular hypertrophy.



Test your skills—see pages 38 and 39.

Stroke is the third most common cause of death and the leading cause of chronic disability in the Western world. Critical attention to its epidemiology has identified a number of risk factors that are commonly classified into non-treatable, non-modifiable and modifiable categories (Table 1).

### Modifiable risk factors

#### Hypertension

Hypertension remains the most important modifiable risk factor for stroke. Correction of high blood pressure (BP) significantly decreases the risk of stroke. For every five millimeter decrease in diastolic BP, there is a reduction of over 42% in the instance of stroke.

#### High cholesterol

High cholesterol by itself is not recognized as a major risk factor for stroke, but treatment with statins in a number of trials has clearly been shown to decrease the subsequent risk of not only heart disease, but of stroke as well.

**Table 1**

<b>Non-modifiable risk factors</b>	<b>Modifiable risk factors</b>
<ul style="list-style-type: none"> <li>• Age</li> <li>• Sex</li> <li>• Genetic history</li> <li>• Race</li> </ul>	<ul style="list-style-type: none"> <li>• High blood pressure</li> <li>• High cholesterol</li> <li>• Obesity</li> <li>• Sedentary lifestyle</li> <li>• Atrial fibrillation</li> <li>• Smoking</li> <li>• Hormone replacement therapy</li> <li>• Previous history of stroke/transient ischemic attack</li> <li>• Previous history of heart disease</li> </ul>

**Obesity**

Obesity, especially Metabolic Syndrome, is becoming increasingly recognized as a major risk factor for heart disease and stroke. Treatment is often multifactorial, with attention paid to diet, management of insulin resistance/diabetes and an active and healthy exercise program.

**Atrial fibrillation**

Atrial fibrillation (AF) is a common factor for embolic stroke and its incidence increases with age. Unfortunately, most patients are either not treated or under-treated with anticoagulant therapy. It is especially important to look for AF in the elderly and to treat it with anticoagulant therapy to maintain an international, normalized ratio of between 2 and 3.



**Case Quiz: Question 1**

What is your clinical diagnosis for Mitch?

- A. Transient ischemic attack
- B. Angina
- C. Migraine aura with no headache
- D. Focal seizure

(The answer is A)

**Other factors**

Other correctable risk factors that are important to investigate include:

- sedentary lifestyle,
- smoking and
- the recent use of hormone replacement therapy.

These need to be tackled aggressively to prevent further ischemic events.

**About the author...**

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Q<sub>2</sub>**Case Quiz: Question 2**

What early investigations are essential?

- A. A carotid ultrasound and computed tomography scan of the head
- B. A magnetic resonance imaging or magnetic resonance angiographic scan
- C. An electroencephalogram
- D. A cardiac echocardiograph

(The answer is A)

**Drug therapy**

Antiplatelet therapies are essential for stroke prevention in patients with non-cardiac disease. Patients with a potential cardiac source (most often AF) require lifelong anticoagulant therapy.

For patients with established carotid cerebrovascular disease, attention needs to be paid not only to the risk factors, but also to antithrombotic therapy. In patients in whom there is no known cardiac disease, therapy is most often initiated with acetylsalicylic acid (ASA), 81 mg, daily. In patients who fail ASA therapy, alternates include dipyridamole, 200 mg, twice a day, in combination with ASA, 25 mg, twice a day, or clopidogrel, 75 mg, once a day. Treatment with antithrombotic medications is long-term. Furthermore, if the patient does have significant disease in the carotid arteries, this would require further investigation and surgical management.

Q<sub>3</sub>**Case Quiz: Question 3**

Investigations show that Mitch has a 70% to 80% stenosis of his left carotid artery on the Doppler ultrasound. He also has no evidence of a stroke on his brain imaging studies.

What treatment options would be urgently required?

- A. Consultation with a neurosurgeon/vascular surgeon for an enarterectomy
- B. Starting Mitch immediately on 81 mg of acetylsalicylic acid
- C. Treating Mitch's BP to bring it down to 130/80 mmHg over the next two weeks
- D. Encouraging Mitch to exercise
- E. All of the above

(The answer is E)

## References

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