

New guidelines offer power to prevent stroke

Healthy habits and appropriate treatments help prevent stroke, according to graded, evidence-based recommendations issued today by the American Heart Association and its division, the American Stroke Association.

Stroke is the third leading cause of death and a major source of disability in the United States. Every year about 700,000 people in the United States suffer a stroke, resulting in nearly 158,000 deaths. From 1993–2003, the stroke death rate fell 18.5 percent, but the actual number of stroke deaths declined only 0.7 percent, according to 2006 association statistics.

“Stroke remains a major public health problem. Its human and economic toll is staggering,” said Larry B. Goldstein, M.D., the guidelines’ lead author and chair of the association’s Stroke Council.

The estimated direct and indirect cost of stroke in 2006 is \$57.9 billion.

“Stroke can be prevented and we are learning more about ways of accomplishing that,” said Goldstein, professor of medicine (neurology) and director of the Duke Center for Cerebrovascular Disease at Duke University Medical Center in Durham, N.C.

The guidelines addressed risks that can’t be altered and those that can be influenced.

Non-modifiable risk factors

Risk factors that can’t be changed include age, gender, race/ethnicity and family history. Older people, men, African Americans, and people with a family history of stroke are generally at greater risk than others.

The writing committee also cited low birth weight as a potential non-modifiable risk factor. Some studies have found that adults who weighed about 5.5 pounds (2,500 grams) or less at birth have double the risk of stroke as adults who weighed about 8 pounds (4,000 grams) or more at birth. However, the reason for this relationship remains uncertain.

“We are facing potential cutbacks in maternal health and nutrition programs. In addition to their public health benefits, it makes sense to invest in programs aimed at improving the health of women during pregnancy,” Goldstein said. “Dividends may pay off decades later by potentially reducing the chances of stroke – and all the health costs that go with it – later in life.”

Modifiable risk factors

In the guidelines, modifiable risk factors are categorized as “well-documented” or “less well-documented or potentially modifiable.”

The guidelines reiterate some well-known prevention measures such as controlling high blood pressure, not smoking, avoiding exposure to secondhand smoke, being physically active and treating disorders that increase the risk of stroke such as atrial fibrillation (a type of irregular heartbeat), carotid artery disease and heart failure.

The guidelines suggest physicians consider using a risk assessment tool such as the Framingham Stroke Profile to assess patients’ risk.

“It is important to identify patients at high risk of stroke because research shows that many strokes can be prevented if those individuals modify their risk factors,” Goldstein said.

Some new recommendations for “well-documented” stroke risk factors include:

- Refer patients with rare genetic causes of stroke for genetic counseling,
- Treat high-risk diabetic patients with statins,
- Increase intake of potassium and reduce salt intake to lower blood pressure in people with hypertension,
- Start transcranial Doppler (TCD) ultrasound screenings for children with sickle cell disease at age 2 and consider transfusion therapy for those found to be at high stroke risk,
- Evaluate adult sickle cell patients for known stroke risk factors and manage them according to stroke prevention guidelines.

The “less well-documented or potentially modifiable” risk factors have less clear-cut epidemiological evidence or lack randomized clinical trials documenting stroke risk reduction. Included in that category is the metabolic syndrome — a clustering of metabolic disorders that may increase the risk of artery plaque buildup (abdominal obesity, high triglycerides, low HDL-cholesterol or “good” cholesterol, high blood pressure, insulin resistance, high blood levels of fibrinogen or C-reactive protein). Other interventions that may lower stroke risk are limiting alcohol use, not using illicit drugs and avoiding the use of oral contraceptives in women who smoke.

A new recommendation among the potentially modifiable risk factors is evaluating people for sleep apnea. This disorder is marked by extremely loud snoring, daytime sleepiness and is associated with an increased risk of stroke. Sleep apnea sufferers stop breathing several times a night, rousing to gulp in air in a pattern that disrupts normal sleep.

“We know that treating sleep apnea is associated with a reduction of blood pressure,” Goldstein said. “And although we don’t have direct evidence that treating sleep apnea will reduce stroke risk, the feeling is that it will. But that is not yet supported by randomized trials.”

The guidelines suggest that physicians question bed partners and patients — particularly those with abdominal obesity and hypertension — about sleep disorder symptoms.

Other risk factors such as inflammation, infection and migraine are all mentioned in the guidelines as areas in which research is evolving.

The guidelines also recommend low-dose aspirin to prevent a first stroke in women whose risk is sufficiently high for the benefits to outweigh the risks associated with long-term aspirin use. The evidence is not strong enough to recommend aspirin in men at high risk of stroke. Men at high cardiovascular risk can also benefit from treatment with aspirin for primary prevention, Goldstein said.

“Stroke is a life-changing event that not only affects the person who may be disabled, but the entire family and other caregivers as well,” he said, noting that its devastating toll prompted aggressive efforts to educate physicians, other medical personnel and their patients.

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Primary stroke prevention at-a-glance

What can be done to reduce the risk of stroke:

Consumers:

- Have regular screenings for high blood pressure (at least every two years in adults and more frequently in minorities and the elderly) and control high blood pressure.
- Don't smoke and eliminate exposure to secondhand smoke.
- Maintain tight control of blood pressure if you have diabetes. If you have diabetes and other risk factors, talk to your physician about taking statins.
- Reduce sodium intake (no more than 2.3 grams a day), and increase potassium intake (at least 4.7 grams a day) to lower blood pressure in people with hypertension; eat a diet high in fruit, vegetables, low-fat dairy products and low in saturated and total fat.
- Lower total cholesterol to acceptable levels.
- Lose weight, which can lower blood pressure.
- Be physically active (moderate-intensity) for at least 30 minutes a day.

Physicians:

- Treat cardiovascular diseases that increase the stroke risk such as coronary heart disease, heart failure and peripheral artery disease.
- Consider anticoagulants or antithrombotics for high-risk patients with atrial fibrillation.
- Consider prescribing statins for patients with diabetes and other stroke risk factors.
- For asymptomatic patients with severe carotid blockage, consider recommending prophylactic carotid endarterectomy surgery by a surgeon with a low complication rate.
- Beginning at age 2, screen children with sickle cell disease with transcranial Doppler ultrasound and consider transfusion therapy for those at elevated stroke risk.
- Evaluate adult sickle cell patients for stroke risk factors and manage them according to the general guidelines in this statement.
- Do not prescribe hormone therapy (with estrogen, with or without progestin) for primary prevention of stroke.

Other things that can be done that *will probably* reduce stroke risk:

Consumers:

- If you drink alcohol, limit your intake to no more than two drinks a day for men and one drink a day for nonpregnant women.
- Do not use illicit drugs.
- Do not take oral contraceptives if you are a woman who smokes or has a history of blood clots.
- Look for signs of sleep-disordered breathing (loud snoring, excessive daytime sleepiness, repeatedly gasping for breath during sleep); see a specialist for further evaluation.

Physicians:

- Treat the components of the metabolic syndrome (clustering of abdominal obesity, high triglycerides, low HDL-cholesterol, high blood pressure, insulin resistance).
- Consider low-dose aspirin therapy for women at high risk of stroke..