

## Treatment and Prevention of Stroke Using Aspirin

In the United States, strokes are a common cause of death. For those who experience a stroke and survive, many individuals find themselves suddenly disabled.

Any time an individual experiences symptoms that could indicate she or he is experiencing a stroke, those symptoms should be taken seriously and should be considered to be a medical emergency (Box 1). Most strokes are ischemic strokes. This means that a blood clot blocks a blood vessel in the brain. This blockage prevents blood and oxygen from getting to cells on the other side of the clot. Within minutes of blood flow stopping, brain cells begin to die. "Mini-strokes" also called transient ischemic attacks (TIAs), occur when the blood supply to the brain is briefly interrupted.

Since the underlying cause of most strokes is a blood clot, drugs that disrupt clot formation are commonly used as treatments and to prevent stroke recurrences (Box 2). The most common of these drugs is aspirin. Most doctors prescribe aspirin first for stroke management because it is in-



expensive and it does not usually require laboratory tests to monitor for side effects.

While most people think of aspirin as a treatment for pain or fever, it also possesses anti-clotting actions at blood cells called platelets.

### BOX 1. SUDDEN ONSET OF THE FOLLOWING SYMPTOMS COULD INDICATE A STROKE

- Numbness or weakness of the face, arm or leg (especially on one side of the body)
- Confusion, trouble speaking or understanding speech
- Trouble seeing in one or both eyes
- Difficulty walking, dizziness, loss of balance or coordination
- Severe headache with no known cause

### BOX 2. COMMON DRUG TREATMENTS USED IN STROKE MANAGEMENT

- Aspirin
- Clopidogrel (also known as Plavix)
- Dipyridamole
- Warfarin (also known as Coumadin)

Based on "Aspirin Dosing for the Prevention and Treatment of Ischemic Stroke: An Indication-Specific Review of the Literature" by Alexander Ansara, Sarah Nisly, Sally Arif, Julia Koehler, and Sarah Nordmeyer, *The Annals of Pharmacotherapy*, May 2010, <http://dx.doi.org/10.1345/aph.1M346>. For Our Patients is provided by *The Annals* to help explain the latest research and information relating to your medications. These summaries are for informational purposes only and are not a substitute for professional advice from your personal medical provider. If you have questions about this material, you should discuss it with your physician or pharmacist. This summary may be reproduced without permission for not-for-profit educational purposes only. Any other use must be approved by the publisher. © Copyright 2010, Harvey Whitney Books Company, hwbooks.com. FOPG4 DOI 10.1345/fop.1M346

Specifically, aspirin can prevent platelets from clustering, sticking together, and forming clots in blood vessels. Full effects of aspirin on platelet aggregation can be apparent in less than 30 minutes after taking the drug.

Many different researchers have investigated the use of aspirin in different stroke situations. The drug has been studied as a way to prevent a first stroke, prevent a second stroke in people who have already had one, prevent a stroke in people who have had a heart attack, prevent a stroke in those who have irregular heart rhythms (atrial fibrillation), prevent a stroke in people with clogged carotid arteries (blood vessels in the neck that carry blood to the head), and as a treatment for strokes within hours of symptoms beginning. Some studies have found aspirin to be beneficial in stroke management, other studies have not.

### SHOULD I TAKE ASPIRIN?

Many people wonder if they should take a daily aspirin. Based upon the results of many different studies, it seems that the answer to that question may vary from person to person, depending on the specific situation. For example, men do not seem to gain any benefit from taking aspirin to prevent an initial stroke. However, women over 45 years of age may benefit. People who have already had a first stroke may prevent another stroke from occurring if they take aspirin each day. Similarly, people who have a heart attack may benefit from taking aspirin each day to protect themselves from another heart attack; however, studies have not found aspirin to prevent strokes in these patients. In people with irregular heart rhythms who cannot take warfarin (a blood thinner), aspirin can protect from a stroke, especially in those who are older than 75 years of age or have high blood pressure, diabetes, or heart failure. Aspirin can also reduce the incidence of strokes in people who have clogged arteries, including those who have had the arteries cleaned out with surgical procedures. Doctors will often prescribe aspirin for patients within a few hours of arriving at the hospital after having a stroke, especially if they are not candidates for other “clot-busting” drugs. When used for preventative purposes, the benefits that aspirin may provide involve a decreased risk of having a stroke, as well as a decreased risk of death or disability if one does occur.

In the many studies that have investigated benefits of aspirin, widely different doses (30 mg to 1300 mg daily) of the drug have been tested. At higher doses (325 mg or more), the side effects of aspirin may limit its usefulness. Aspirin can cause bleeding complications, especially due to damage in the stomach, and this is more common at higher doses. The table below lists the lowest doses of aspirin that are recommended for patients with different medical needs. Keep in mind, while these are the lowest doses that have been found effective, some people might need higher doses of aspirin, and other people who have stomach ulcers or other bleeding risks might need to use lower doses. If you believe that taking aspirin regularly could be beneficial for you, talk to your doctor. Your healthcare provider can help you assess the risks and the possible benefits. She or he can also help you select the most appropriate dosage based upon your particular risk factors.

**TABLE 1. MINIMUM EFFECTIVE DOSES OF ASPIRIN USED FOR STROKE MANAGEMENT**

Medical Use	Minimum Effective Dose
Prevention of first stroke in men	Not effective
Prevention of first stroke in women	100 mg every other day
Prevention of a second stroke	50 mg daily
Prevention after a heart attack	75 mg daily*
Prevention for people with irregular heart rhythms	325 mg daily
Prevention for people with clogged carotid arteries	75-81 mg daily
Treating a stroke	160 mg daily

\*This dose was shown to prevent a second heart attack, but did not decrease the risk of having a stroke

### FOR MORE INFORMATION

American Heart Association  
[www.americanheart.org/downloadable/heart/1196965757160\\_AnticoagandAntiplat.pdf](http://www.americanheart.org/downloadable/heart/1196965757160_AnticoagandAntiplat.pdf)

Mayo Foundation for Medical Education and Research  
[www.mayoclinic.com/print/daily-aspirin-therapy/HB00073/METHOD=print](http://www.mayoclinic.com/print/daily-aspirin-therapy/HB00073/METHOD=print)

Office of Disease Prevention and Health Promotion  
<http://healthfinder.gov/prevention/PrintTopic.aspx?topicID=10>