- **Manage your anger.** Angry outbursts double your stroke risk. Dr. Everson, whose study showed this, recommends identifying your anger triggers and working to stay calm so that you don’t lose your temper and send your blood pressure soaring. She suggests deep breathing, counting to 10, and walking away from potentially anger-provoking situations.

“Any therapy that promotes deep relaxation should also help prevent stroke,” says stress-management specialist Martin Rossman, M.D., co-director of the Academy for Guided Imagery in Mill Valley, California. Dr. Rossman has produced many relaxation tapes that combine music and visualization exercises. For a catalog, write the Academy for Guided Imagery at P.O. Box 2070, Mill Valley, CA 94942; 800) 726-2070; www.interactiveimagery.com.

- **Bravo for biofeedback.** For years, neurologist Frank Wilson, M.D., medical director of the Health Program for Performing Artists at UCSF, felt frustrated about conventional stroke rehabilitation techniques: “We’re pretty good at teaching stroke survivors to walk again, but we’ve been much less successful rehabilitating their hands. That’s a real problem because to live independently, you need functioning hands.” Dr. Wilson shared his problem with a computer programmer who came up with an ingenious biofeedback system for hand rehabilitation. By tapping their fingers on an electronic keyboard connected to special computer software, people working on hand rehabilitation can control the tempo of complex musical pieces. If they tap too slowly, the piece slows down and sounds distorted. If they tap too quickly, it speeds up and sounds wrong. The piece plays properly only when users tap the keyboard precisely in time with the music. A pilot study suggests that this hand-ear biofeedback works better and faster than conventional hand rehabilitation techniques.

- **Strike up the band.** Independent of its use in biofeedback, music improves stroke rehabilitation because it has an anti-depressant effect. Many stroke survivors become depressed, which makes them less willing to work at rehab. At Woodend Hospital in Aberdeen, Scotland, music therapist Heather Purdie, M.Sc., M.Mus., divided 40 stroke survivors into two groups. One received standard care, the other, 40 minutes of music therapy a day. After 12 weeks, the music-therapy group was less depressed, less anxious, and more motivated to participate in rehabilitation.

**Social Support**

- **Three cheers for cheerleaders.** Duke University researchers studied 46 people hospitalized in Durham, North Carolina, for strokes. Eight had little emotional support, 24 had a moderate amount, and 14 had a great deal. Then they correlated the stroke survivors’ social support with their recovery after six months. Those with the most support recovered significantly more quickly and fully.

- **The couple connection.** Close relationships also help reduce risk of stroke. At a risk-factors reduction program at the London School of Hygiene and Tropical Medicine in London, U.K., Stephen Pyke, M.D., worked with both individuals and couples. The people in couples were significantly more successful at reducing their blood pressure and cholesterol, and at quitting smoking.
Herbal Medicine

- **Bark up the willow tree.** Willow bark (and meadowsweet and wintergreen) contain a compound (salicin) that's a natural form of aspirin. Like aspirin, salicin helps prevent the internal blood clots that cause ischemic stroke (see below). For stroke prevention, Maryland botanist/herbalist James Duke, Ph.D., author of The Green Pharmacy, suggests drinking two to three daily cups of tea made from these herbs.

  Unfortunately, anything that interferes with blood clotting also about doubles your risk of hemorrhagic stroke, [53] which makes anticoagulant approaches to stroke prevention a little tricky. Ask your doctor if you should use an anticoagulant to prevent stroke. If you're at high risk for ischemic stroke--especially if you've already had one or a TIA--doctors usually advise anticoagulant therapy. [54]

- **Go for ginkgo.** Ginkgo (Ginkgo biloba), a relic of the Dinosaur Age, is the oldest surviving species of tree on earth. Poetically, an extract of its leaves helps the oldest people. European physicians often prescribe an extract of ginkgo leaves for stroke survivors because of studies showing that it improves blood flow through the brain. Researchers at the University of Limburg in Maastricht, the Netherlands, reviewed 40 studies of ginkgo for “cerebral insufficiency,” a pre-stroke condition of dangerously reduced blood flow through the brain. Every one showed that ginkgo extract improved blood flow, with the greatest benefit resulting from daily treatment with 120 mg for six weeks. [55]

  Ginkgo also helps treat TIA-related problems. Recall that people who have TIAs seem to recover completely. But every TIA damages some brain cells. In people who survive several TIAs, this damage increases to the point where they may develop problems with reasoning and memory (multi-infarct or vascular dementia). Ginkgo appears to help treat it. [56]

  “I consider ginkgo preventive for stroke,” says Alan Brauer, M.D., founder of TotalCare Medical Center in Palo Alto, California. “In addition to its effectiveness, it’s nontoxic.” He recommends 100 to 200 mg/day.

- **Garlic, anyone?** Garlic helps prevent ischemic stroke in three ways: It reduces blood pressure. It lowers cholesterol. And it’s an anticoagulant. [57] “If I were at risk for ischemic stroke,” Dr. Duke says, “I’d increase my use of garlic in cooking and also take garlic capsules, which are available at health food stores and many drug stores. Garlic’s close relatives--onions, scallions, leeks, chives, and shallots--have similar benefits.” [58]

**Over the Counter**
- **An aspirin a day....** If willow bark is not your cup of tea, and your doctor recommends taking an anticoagulant, you can take aspirin. Constance Johnson, M.D., a professor of neurology at Johns Hopkins University School of Medicine, calls aspirin the best-choice anticoagulant, preferring it over prescription drugs (see “Medical Measures”) because it’s almost as effective, yet much cheaper and causes fewer side effects. Among the most widely noted is a Canadian study in which low-dose aspirin reduced stroke risk 31 percent. Recommendations vary but most doctors recommend one tablet a day or one every other day. But remember: Aspirin's anti-clotting effect may increase your risk of a bleeding stroke. If you're considering using aspirin to prevent a stroke, discuss it with your doctor.

**Chinese Medicine**

- **Acupuncture.** Both the United Nations World Health Organization and the National Institutes of Health endorse acupuncture for treatment of stroke-related disabilities. And no wonder. Many studies show that it helps:
  - At the Sunnaas Rehabilitation Hospital in Nesoddtangen, Norway, 49 people who’d had strokes within the previous six weeks were given either standard rehabilitation or that plus four half-hour acupuncture sessions a week. By the end of the study, the acupuncture group regained significantly more muscle function and rated their quality of life higher.
  - Swedish researchers treated 78 stroke sufferers with either standard therapy or acupuncture. After one year, the acupuncture group showed better balance, greater mobility, and more competence in activities of daily living. They also spent significantly less time in rehabilitation (an average of 87 days vs. 161 for the control group), and were considerably more likely to be able to live at home (89 vs. 66 percent), substantially reducing nursing home costs. Two years later, the group treated with acupuncture continued to have better postural control.
  - At the Taipei Veterans Hospital on Taiwan, researchers treated 30 recent stroke sufferers with standard care. Some also received acupuncture--three sessions a week for four weeks. The acupuncture group enjoyed greater recovery.

**Medical Measures**
For stroke prevention, instead of aspirin, your doctor might prescribe other anticoagulants: dipyridamole (Persantine), ticlopidine (Ticlid), or warfarin (Coumadin). [69]

Until recently, there was no way to treat a stroke once it struck. But in the last few years, doctors have enjoyed considerable success with two novel approaches--clot-dissolving (thrombolysis) and brain-saving (neuro-protection). If a clot-dissolving drug is administered within three hours of an ischemic stroke, normal blood flow can often be restored, and risk of death and permanent disability drop about 30 percent. [70] Brain-saving drugs reduce the number of brain cells killed by the stroke. They also help minimize disability. [71]

But to gain the benefits of these new stroke treatments, you have to be treated quickly. There’s the rub: Because most Americans are not familiar with the warning signs of stroke, they don’t get themselves or their loved ones to the emergency room fast enough. [72] That’s why it’s so important to understand the warning signs of stroke (see sidebar). If someone you know exhibits any of these signs, don’t delay. Call 911 or get the person to an emergency room as quickly as possible. If it’s not a stroke, you’ll laugh about it later. But if it is, quick thinking can save a life or prevent permanent disability.

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