Winds of Change
Cutting edge neuroscience may influence the direction of rehab

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Stroke as a Symptom? 30
Kim Trow of Buffalo, N.Y., was diagnosed with lupus when she was 26. Her first symptom was a stroke.
YOU DON’T WANT ANOTHER HEART ATTACK OR ANOTHER STROKE TO SNEAK UP ON YOU.

PLAVIX HELPS KEEP BLOOD PLATELETS FROM STICKING TOGETHER AND FORMING CLOTS, WHICH HELPS PROTECT YOU FROM ANOTHER HEART ATTACK OR STROKE.

If you’ve had a heart attack or stroke, the last thing you need is another one sneaking up on you. PLAVIX may help. PLAVIX is a prescription medication for people who have had a recent heart attack or recent stroke, or who have poor circulation in the legs, causing pain (peripheral artery disease).

PLAVIX OFFERS PROTECTION.

PLAVIX is proven to help keep blood platelets from sticking together and forming clots, which helps keep your blood flowing. This can help protect you from another heart attack or stroke.

IMPORTANT INFORMATION: If you have a stomach ulcer or other condition that causes bleeding, you shouldn't use Plavix. When taking Plavix alone or with some medicines including aspirin, the risk of bleeding may increase. To minimize this risk, talk to your doctor before taking aspirin or other medicines with Plavix. Additional rare but serious side effects could occur.

Please see important product information on the following page.
**PLAVIX® (clopidogrel bisulfate) tablets**

**INDICATIONS**

- **Thrombotic Thrombocytopenic purpura (TTP):** TTP can occur in patients receiving PLAVIX tablets, sometimes after a short exposure (<2 weeks). For TTP, a serious condition that can be fatal and requires urgent treatment including plasma exchange and/or immunosuppressive therapy. PLAVIX should be discontinued in patients with confirmed or suspected TTP.

**WARNINGS**

- **Hematologic:** In CURE, the incidence of major bleeding was 1.5% vs. 2.0% for aspirin (P=0.04). The incidence of intracranial bleeding in patients who stopped therapy more than 5 days prior to surgery event rate 4.4% vs. 4.0% in patients continuing therapy at least 6 days prior to surgery event rate was 0.8% vs. 1.0%.

**ADVERSE REACTIONS**

- **Hemorrhagic:** In CAPRIE patients receiving PLAVIX, gastrointestinal hemorrhage occurred at a rate of 2.6% and required hospitalization in 0.7% of patients, the corresponding rates were 2.3% and 0.5%, respectively. The incidence of intracranial hemorrhage was 0.0% for aspirin and 0.8% for CAPRIE. In PLAVIX, use of aspirin was associated with an increased risk of bleeding compared to placebo. The overall incidence of bleeding in PLAVIX is described in Table 1.

<table>
<thead>
<tr>
<th>Event</th>
<th>PLAVIX (n=46,933)</th>
<th>Placebo (n=46,883)</th>
<th>Placebo (n=46,113)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major bleeding</td>
<td>2.7%</td>
<td>2.3%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Ulcers</td>
<td>1.8%</td>
<td>1.7%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>1.1%</td>
<td>1.0%</td>
<td>0.9%</td>
</tr>
</tbody>
</table>

**ADVERSE REACTIONS (Continued)**

- **Hypersensitivity:** There were 2 cases of hypoglycemia reported in patients receiving PLAVIX (1.2% for PLAVIX and 1.3% for aspirin). These events were mild and transient, and no cases were associated with death or severe outcome.

**CONTRAINDICATIONS**

- **Hypersensitivity:** There were 2 cases of hypoglycemia reported in patients receiving PLAVIX (1.2% for PLAVIX and 1.3% for aspirin). These events were mild and transient, and no cases were associated with death or severe outcome.

**PRECAUTIONS**

- **Geriatric Use:** Geriatric patients (≥75 years) were included in the CAPRIE trial. There were, however, no adequate and well-controlled studies in elderly patients.
I had a small stroke several years ago. It left my left leg weak and draggly, and I have trouble picking up my left foot. Since all the shoe manufacturers seem to follow one another, all shoe soles are rubber. Too often when I’m walking my rubber sole stops and I don’t. Such a picture! A 77-year-old lady sprawled on the sidewalk. I’ve looked all over for a shoe that laces and has a reasonably slippery bottom. Does anyone else have this problem, and have they found any shoes that will work? I even asked SAS, but they are all rubber. Taps cannot be attached to rubber soles. Would appreciate any help.

Nancy Phillips, Survivor
Hot Springs, Arkansas

I had a severe stroke in June 2004 after having been warned by my doctor about leaving my hypertension untreated. If only I had taken him seriously, I could have saved my family and myself a lot of grief. I couldn’t imagine how a young (49), healthy, active man could have a stroke. I always enjoyed hiking, canoeing and woodworking. I’m still building my own cedar-strip-and-epoxy canoe.

My recovery is beyond anyone’s expectations, thanks to the excellent PT and OT. I am learning to walk with a normal gait and cane. My left arm and hand are still paralyzed, and my hand is beginning to curl up due to spasm in the bicep. My PT wants me to have botox injections to reduce or stop this spasm. If any readers know anything about this treatment, I would love to hear about it.

Jan Neels, Survivor
Rosedale, British Columbia, Canada

As one of the caregivers to my mother, who had a stroke five years ago, I just had to congratulate Irwin Bierhans for his comments about not having a stroke unless you can afford it. My mom is in a wheelchair and has no use of her left arm.

I absolutely agree with him. While going through your magazine, as my mother does every month, she is constantly asking about this and that. How do you say, “Yes, you could probably use your arm if we could afford that.” Or “You could probably be walking if we could afford the therapy.” There are people with money who have a better recovery than those who have insurance that does not pay for a lot of therapy and cannot afford it on their own.

So, kudos to Mr. Bierhans for saying what I have been thinking for years!

A. Culbertson, Caregiver
Lincoln, California

I am caregiver for my wife, a six-year aneurysm and stroke survivor. Sharon is wheelchair-bound and speechless but loves life. We still go out to eat and take short, out-of-town vacations, which leads to a big question.

How and where do you take a person in a wheelchair to the bathroom? Yes, there are handicapped bathrooms, “men’s” handicap and “women’s” handicap, but very few “family” bathrooms. What do you do?

The rest areas on the interstate usually have an attendant. I usually request this person to clear the women’s bathroom and then I take my wife in there. If no attendant, I survey the scene and, modesty aside, use either the men’s or women’s. I use the same procedure at restaurants.

Best bet while traveling: Try convenience stores, which often have family bathrooms, or you can also stop at a hotel and use their lobby facilities.

This is our bathroom program, but additional ideas would be greatly appreciated.

Robert Sawyer, Caregiver
Holland, Ohio

Letters may be edited for length and scientific integrity. The opinions presented are those of the individual and do not reflect those of the American Stroke Association.
Amazing News: Adult Brain Cells GROW

What the researchers saw amazed them – they witnessed adult brain cells actually growing, something thought impossible up to then. In 3-D time-lapse images, the brain cells pushed out tentative tendrils that grew around or retracted from contact with neighboring cells. Dendrite tips that looked like the thinnest twigs grew longer.

This finding means that it may one day be possible to grow new cells to replace ones damaged by stroke. “Knowing that neurons are able to grow in the adult brain gives us a chance to enhance the process and explore under what conditions – genetic, sensory or other – we can make that happen,” said the study’s co-author, Elly Nedivi, assistant professor of neurobiology at MIT.

Focusing on dendrites, which are branched projections of nerve cells that conduct electrical stimulation to the cell body, the researchers observed that growth was affected by use: The more the neurons were used, the more likely they were to grow.

The research team used a method called “two-photon imaging” to track specific neurons over several weeks in the surface layers of the visual cortex in living mice. Using technology similar to MRI, they were able to stitch together two-dimensional slices to create the first 3-D reconstruction of entire neurons.

“The scale of the change is much smaller than what goes on during early development, but the fact that it goes on at all is earth-shattering,” said Nedivi.

Simple Test Predicts Risk of Recurrent Stroke

A study sponsored by the large, multi-ethnic Northern Manhattan Stroke Study (NOMAS) found a biomarker that predicts recurrent stroke in minority populations. Dr. Mitchell Elkind, assistant professor of neurology at Columbia University, linked this biomarker, called Lp-PLA2, to higher rates of stroke in the urban minority participants in the study.

“People who had elevated levels were at increased risk of having another stroke within four years. Those in the top quartile had twice the risk of those in the lowest quartile,” he said.

“Women, Hispanics and African Americans, groups that are frequently overlooked in major studies, were well represented in our study,” said Elkind.

The test was effective in predicting stroke in all groups.

A blood test that measures this biomarker has been approved by the FDA as a predictor of first stroke, but this is the first study investigating recurrent stroke, “so no one can go to their doctor quite yet and get a blood test to predict their risk of another stroke,” said Dr. Elkind. “These results need to be confirmed in other populations first.”
For many Americans, gaining independence provides limitless opportunities and endless possibilities. Individuals with accessible transportation needs serve as an example that in life, ability dictates your level of independence and attitude drives you beyond that.

Ford Mobility Motoring offers valuable financial and practical assistance, including reimbursement for the exact amount of vehicle adaptations, up to $1,000* on adaptive equipment and up to $200 on alert hearing devices, lumbar support and running boards.

*Total reimbursement is not to exceed $1,000. Options available for factory installation are not considered eligible under the terms of the program.
New Low-Salt Cookbook

The American Heart Association knows that food is one of life’s great pleasures and that low-sodium food doesn’t have to mean low flavor! The American Heart Association Low-Salt Cookbook, Third Edition, proves that a low-salt diet not only is good for you, but it’s delicious.

Encompassing everything from appetizers and soups to entrées and desserts, this cookbook is a wonderful collection of more than 200 scrumptious low-sodium recipes – 50 of them brand-new to this edition. With the latest dietary information and tips on substituting ingredients, avoiding hidden sodium and dining out, the third edition of this classic cookbook, with new original illustrations, makes it easy to shake the salt habit – and enjoy the results! SPF

Pledge To End Stroke and Get a Free Soul Food Recipes Cookbook

Soul Food Recipes magazine cookbook contains more than 40 delectable recipes, ranging from appetizers and soups to entrées and desserts. Among the delicious choices are classics such as Chicken and Dumplings, Collard Greens with Smoked Sausage, Baked Hush Puppies and Cozy Peach Cobbler. With the latest dietary information, easy-to-follow instructions, cooking tips and beautiful full-color photography, this magazine cookbook makes it easy to prepare and enjoy your favorite soul food dishes healthfully and without sacrificing flavor. Also included are inspiring stories from stroke survivors and information on the American Stroke Association’s Power To End Stroke movement.

Register for Power To End Stroke online at StrokeAssociation.org/power to receive a free copy of Soul Food Recipes while supplies last! If you prefer, call 1-888-4-STROKE for your Power To End Stroke Packet. Sign and return the pledge card and we’ll send your free Soul Food Recipes magazine cookbook once we receive it. Don’t delay. Supplies are limited! SPF
“My muscle stiffness made it impossible for me to do a lot. Now I think anything is possible.”

A few years back, Ed suffered a stroke that affected the right side of his brain—leaving him with tight, stiff muscles on the left side of his body.

Ed tried injections and physical therapy to help ease his pain and increase his mobility, but nothing worked. Then Ed’s doctor suggested a Medtronic therapy.

“It was exciting to finally feel like I was getting better...like I could do this.”

The treatment Ed’s physician recommended helped reduce his symptoms and gave Ed the functional improvement he needed to accomplish more at his physical therapy sessions.

The results? Ed can do more at home and take care of himself again. He’s even back to doing a little cooking, which is something he’s always loved to do. His wife, Andrea, loves that, too.

Results may vary; not every individual will receive the same benefits. Side effects can occur.

Embrace the possibilities
Talk to your doctor about how Medtronic can help you, or call 1-800-856-3823 ext. 103.
CI Therapy Improves Function Years after Stroke

In the first placebo-controlled trial of Constraint-Induced Movement Therapy (CIMT), the technique was shown to be effective at recovering motor function years after a stroke. In CIMT, patients wear a hand splint or sling on their unaffected arm for 90 percent of waking hours during a 14-day treatment period. The rationale is that survivors are forced to use their stroke-weakened arm.

The prevailing view has been that the amount of motor recovery present one year after stroke is the level at which patients will remain. In contrast, CIMT has improved limb function years after stroke. However, no placebo-controlled study had been done.

Led by Edward Taub, Ph.D., of the University of Alabama at Birmingham, researchers studied stroke survivors with mild to moderate motor impairment of an upper limb, an average of 4.5 years after stroke. Twenty-one survivors (average age 55) underwent Constraint-Induced Movement Therapy: six intensive hours a day for 10 consecutive weekdays. Twenty survivors (average age 51) had placebo therapy — a general fitness program of strength, balance and stamina training; games to provide cognitive challenges; and relaxation exercises for six hours a day for 10 consecutive weekdays.

CIMT patients showed “large to very large” improvements in the functional use of their affected arm in their daily lives. Scores on a motor activity log (MAL) in which survivors and caregivers noted how well and how much survivors used their impaired arm in daily living improved an average of 1.8 points for those undergoing CIMT. Those in the control group reported no change. In addition, CIMT patients were able to speed their completion of tasks in lab testing while the placebo patients were slower.

At two-year follow-up, the CIMT group showed a large improvement in MAL scores compared to pretreatment scores. Those in the placebo group displayed no significant changes.
IEED is a distinct neurologic disorder

- IEED causes sudden and unpredictable episodes of crying, laughing, or other emotional displays
- IEED may occur when disease or injury damages the area of the brain that controls normal expression of emotion. This damage can disrupt brain signaling causing a “short circuit,” triggering episodes of involuntary emotional expression

IEED is widespread

- You are not alone—IEED impacts more than 1 million people in the United States diagnosed with brain diseases and injuries such as
  - Stroke
  - MS
  - ALS
  - Parkinson’s disease
  - Dementias including Alzheimer’s disease
  - Traumatic brain injury
- IEED episodes may appear to be signs of depression and, as a result, IEED is often misdiagnosed

IEED has a significant impact

- IEED significantly impacts the quality of life and relationships for patients, their loved ones, and caregivers
- Experiencing unpredictable involuntary emotional displays caused by IEED can be so disruptive that those affected avoid social situations, resulting in isolation
- Addressing IEED can help improve the lives of patients, their families, and caregivers, reducing its physical, emotional, and social impact

Ask your doctor about Involuntary Emotional Expression Disorder (IEED)

Go to www.IEED.org or call 1-866-932-3411
Keepin’ On Keepin’ On

This is the story of my dad, Gene Griggs, who had a stroke 15 years ago. That stroke left him paralyzed on his right side and without speech.

He was in hospital for quite a while, even went into a coma. One doctor gave him no hope of surviving. You should have seen the look on the doctor’s face when he made his rounds and found Dad awake. We’re sure it was a miracle; even the doctor didn’t have an answer.

Dad went through several months of therapy. He did learn to walk again and got a little bit of speech back. He prints left-handed and always calls everyone on their birthdays and sings them “Happy Birthday.” I told him he is just like the country singer Mel Tillis. Dad still has hope to this day that he will regain his speech and the use of his right arm. He always says, “Some day!”

Dad is a very people-oriented person, never meets a stranger. Our parents live on a farm northeast of El Reno, Oklahoma. Over the years, the road in front of their house has become heavily traveled. I’m sure on any day when Dad is outside, he never misses waving to everyone that drives by.

I tell Dad that he should write a book about how he manages to do everything he does, but he just grins. Here are a few of the things he does:

- Cleans the ditches with brush-hog
- Works in the garden
- Vacuums
- Hangs clothes on the clothesline
- Does laundry and dishes

He has a wonderful memory. Mom tells him things she’s afraid she’ll forget because she knows he’ll remember.

Dad is such an inspiration to be around. He always has a big smile, hug and piece of peppermint candy for everyone.

Our parents are involved in several support groups. They have many friends from these groups. Mom said it has been such a blessing to be around other people who deal with the same challenges they are dealing with as a result of the stroke.

Mom still works a part-time job and, on Fridays, they both deliver Mobile Meals. They have a very active life. The stroke certainly hasn’t slowed down their social life.

Our family is so fortunate and blessed for each day because of Dad’s constant positive attitude and the loving care Mom provided unconditionally every day to him.

Patricia Dodd, Daughter
Mustang, Oklahoma

HAPPY HEART

I went to bed with a smile on my face tonight
Some may think I had reason to frown
Reason to be down
But why should I be down
When I can be up
My glass is more than half full
And so is my cup.
Because everything was good
Everything was right

I went to bed with a smile on my face
Because my heart was happy
And my head was in the right place
There is much to be grateful for
Because I have it all and need no more.

Richard Steinberg, Survivor
Boynton Beach, Florida
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— Daryl Holt OTR/L

"To try on the SaeboFlex™ was AMAZING !!! I was so excited to see my arm MOVE and that I could grasp and release . . . was amazing."

— Mary Graham, stroke survivor

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Being a stroke survivor for over three years, I am aware of the serious nature of this condition, but I’ve also been aware of its lighter moments, which are the times I prefer to remember. I call them “the perks”:

1. The close parking spots, which my grandchildren are thankful for when they are in our car.

2. The preferential treatment, such as times I was in my wheelchair and was escorted right into a restaurant or other public place while the “healthy” people had to wait in line.

3. The special kindness shown by people involved in transportation, such as the airport security personnel. I have been treated with nothing but respect from these people who have to perform checks on me. They always do it with an apology in their eyes and voice.

4. The great handicapped seating areas set aside for patrons of the arts. The wheelchair-accessible sections of theatres have been more comfortable and roomy than the regular seating areas. They’re so much better I feel sorry for the “healthy” people.

And then there is the funny side of stroke, as my grandchildren constantly remind me. Here are a few of the notable times.

After I was on my way to recovery but still in the hospital, my daughter brought my two young grandchildren to visit for the first time. Naturally I was nervous that they would be unsettled by my “new” appearance. The boys were in one of the family rooms when they wheeled me in. My four-year-old grandson looked at me with wide eyes and said, “Grammy, what happened to your hair?” Well, that certainly broke the tension and we all started laughing. I guess he glossed over the whole wheelchair thing and was more concerned about my bedhead!

Another incident occurred about two months after returning home. I was sitting in my recliner. As many of you know, getting out of a recliner is not always an easy task. My younger grandson, who was two at the time (and not much of a talker) saw me make five or six attempts to get up. When I couldn’t make it, he gave me a quizzical look and uttered one word, “Stuck?” So now when I get into a tough spot, I think of that one word and it helps me make it through.

I thank God every day for my grandchildren and my sense of humor. Without these blessings, life would be bleak. Instead, my husband and I enjoy life to the fullest, knowing that things can change in the blink of an eye, so our new motto is “Eat your dessert first, enjoy life and don’t ever take anything for granted!”

Mary Lou Puls, Survivor • Nashua, New Hampshire
Stroke vs. Seizures

I hope every caregiver reads “Controlling Post-Stroke Seizures” in the January/February 2006 issue so they can be prepared because chances are that knowledge will come in handy sooner or later.

I had my first stroke on January 30, 1996, and my first seizure two days later while still in the hospital. I was talking to my daughter who was standing beside my bed. She said my eyes “just kind of went up into my head,” and I lost consciousness. The stroke team at the hospital that was monitoring my case suggested that I be started on Dilantin twice a day.

In August 1997 I had another seizure after missing three doses of my medicine, so my protection level had sunk too low. I went back on the same dose, 300 mg, and was seizure-free until October 2002 when I had a third seizure. I was told that my protection level had dropped way below the minimum. That was attributed to my insurance company’s decision for me to use phenytoin, the generic form of Dilantin. Once back on my normal medicine, I remained incident-free until April 2003, when I experienced seizure No. 4 and stroke No. 2.

No cause was given for either event, and I seemed okay until September 2004 when I was hit by my fifth seizure on a very warm day. I had been watching a Little League game and forgotten to take my afternoon dose of Dilantin. Thankfully there was a nurse at the game who recognized my symptoms and helped me till the ambulance arrived. Since then I haven’t missed a single dose of my medicine.

People think I’m crazy when I tell them I’d rather have another stroke than another seizure, but that’s how I feel. I don’t want to die, but seizures are so uncomfortable, I never want to have another one as long as I live. There is no actual pain, but the out-of-control twitching as I fade in and out of consciousness is unbearable.

My seizures usually start as slight tingling and twitching on the left side of my face, usually nose first, then tongue, then eye and then Katie bar the door! I’m going to hit the floor! If eating, I usually choke.

Make sure others know the symptoms and what to watch for.

Conrad G. Craber, Survivor • Fairview, Oregon
The soothing effects of water are no secret. Dating back to the ancient empires of the Romans, Greeks, Turks and Chinese, water therapy has been used to relieve pain, relax the body and create a feeling of well-being.

Today, water therapy is one of the methods physical therapists use to help their patients regain strength and movement. A physical therapist targets the large-muscle groups with range-of-motion and strength-building exercises for those who have difficulty with movement, balance, mobility or coordination – including stroke patients who are weak on one side.

**Getting a Lift**

Getting into a pool of water can give a stroke survivor a power boost. Because of water’s natural buoyancy, a person with weak muscles on one side of the body can stand with much less effort in water than on dry land, providing a safer environment for those who have difficulty with physical rehabilitation activities on land.

“You put them in the water, then all of a sudden, with less effective weight, they are more buoyant and they can stand up with much less power. That way you actually get some people who might not be able to walk yet on land to the point where they can walk while they are in the pool,” said Jason Greenberg, M.D., assistant professor of neurology at Wake Forest University Baptist Medical Center in Winston-Salem, N.C., the location of the J. Paul Sticht Center on Aging and Rehabilitation.

**Other Advantages**

According to Dr. Greenberg, the sense of balance is different in the pool, and that can work to a person’s advantage.

A person’s movement during exercise creates resistance against the water. This strengthens muscle groups without the need for weights. At the same time, adding the water’s buoyancy to its resistance puts less stress on the joints than doing the same activities outside the water, important for those with arthritis or other joint problems.

The temperature in a hydrotherapy pool also plays a role in helping stroke patients get the most out of rehab. “The water temperature in our pool here at the Sticht Center is 90 degrees,” says Peggy Cromer, a recreation therapist. “We have found that temperature to be comfortable, and it gives us good response from our stroke patients as we work with them, as far as being able to get good mobility and movement with them.”

**Making a Splash**

by Mike Mills
Even for those who don’t have arthritis or other joint problems, the warm water helps them move more freely as they do the exercises directed by their therapists.

Besides building strength and mobility in muscles, water exercise carries a cardiovascular benefit for stroke survivors. Even if survivors are not specifically focusing on the problems they have from their stroke, they benefit from the exercise because it increases their cardiovascular fitness.

Finding a Water Therapy Program

Hydrotherapy programs are more likely found in rehabilitation centers and outpatient clinics than in regular hospitals. Ellen Harrington-Kane, assistant vice president, medical rehabilitation, for the Easter Seals National Office says Easter Seals provides medical rehabilitation services in more than 200 locations across the United States. “Some of those locations have warm-water therapy pools,” Harrington-Kane says. “People can contact Easter Seals to see if aquatic therapy is offered in their location.” (Find your nearest Easter Seals location by visiting www.easterseals.com or calling toll-free 1-800-221-6827.)

When prescribed therapy sessions end, stroke survivors who want to continue water exercise on their own should be able to find facilities and programs by following Dr. Greenberg’s suggestions:

• First, look to your physical therapist to point you in the right direction.
• “Second, in the absence of your own therapist,” Dr. Greenberg says, “you could still go into a pool exercise program, as long as the person leading it understands the limitations you have.”

Your local YMCA, YWCA or other community center may offer aquatic fitness/therapy classes. (Visit www.ymca.net or www.ywca.org to find locations and programs near you.)

Is Water Therapy for Everyone?

“Water therapy usually can be considered only after a patient has made progress with other therapy,” says physical therapist James Caputo of Austin-Caputo Physical Therapy in Winston-Salem. But he says that whether water therapy is good for a patient depends on a number of factors:

• the patient’s mobility in the upper and lower extremities
• whether cognitive ability is affected
• whether the patient is afraid of water
• whether the particular pool is accessible

“It depends on where that patient is [developmentally],” Caputo says. “Each person has to be individually assessed to determine whether or not they are a candidate to get into the pool.”

Regardless of whether water therapy is recommended, Caputo believes that an exercise program following prescribed therapy is a must for continued improvement. 

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Therapy helps many stroke survivors perform everyday activities with greater control. Practice rehabilitative exercises affordably and conveniently in your home using the Core:Tx for Stroke Survivors system. Now just $249*.

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*After $50 rebate. Monthly payment options are available. As with any exercise program, contact your physician with questions. Individual experiences may vary. Core:Tx is a registered trademark of Performance Health Technologies.

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A stroke will force you to make changes in your life, but it shouldn’t take away your ability to express yourself. The Lingraphica Express is a speech-generating device that helps adults with aphasia to communicate again. Let your doctor know how you feel, order a steak, or even tell a joke—the Lingraphica's picture language makes it easy.

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MEDICARE REIMBURSABLE
Few things matter to stroke families as much as rehab.

As one survivor said many years ago, “Rehab is life.” There seems to be a new interest in the field as old myths about recovery are replaced with new understanding. The traditional six-month window of recovery is opening wider and wider. Constraint-induced therapy has shown that function increases with repetition, and that improvements are possible years after a stroke.

For more than a generation, rehab has been pretty much physical, occupational and speech therapy in varying configurations. Today scientists are investigating a variety of ways to enhance these mainstays through electrical stimulation, cell therapy, neural prosthetics and targeted magnetic fields. Robots also are expected to expand the scope of rehab, taking it out of the hospital and integrating it into life.
A ROBOTIC KNEE BRACE

Dr. Paolo Bonato, a biomedical engineer at Harvard University, and Dr. Joel Stein, a stroke clinician at Spaulding Rehabilitation Hospital in Boston, are studying a lightweight, fully portable knee brace called the Active Knee Rehabilitation Device (AKROD). The brace was invented by Northeastern University professor Constantinos Mavroidis and his team. It uses concentric cylinders and “smart fluid” that changes viscosity in response to an electrical current. It can become solid in less than a millisecond; the amount of resistance can be dialed in, and if the knee is flexing too much and about to buckle, the fluid will become solid and provide instant support.

The researchers believe it can help survivors learn to walk again. “We are exploring the potential for using this knee brace in gait-retraining sessions,” Dr. Bonato said. “The person will walk on a treadmill and look at feedback from the AKROD on a screen. The feedback they get will help them retrain their gait.”

The brace can also help during the swing phase of walking and discourage hyperextension of the knee when standing. Once this initial development is completed, the next step is reducing the size of the device so gait retraining can leave the confines of the rehab hospital and become a part of daily activities.

“A knee brace requires very complicated interaction with an individual,” Dr. Bonato said. “It’s a difficult balance between providing enough mechanical support and fostering active control of the lower limbs. We don’t want to totally replace function with a device. Subjects need to attempt to voluntarily control their gait and learn to walk again.”

“The AKROD can help people walk better,” Dr. Stein said. “It will improve the ability to bend and control the knee and help establish a more normal walking pattern.”

But to do that, a way must be found to reduce its bulk so it can be taken out of the clinical setting. At this point, the AKROD is a prototype in the early stages of development.

NEW CELLS, NEW BRAINS?

Cell therapy is another promising avenue under early investigation. In this type of therapy, large numbers of a single type of cell will be given to patients to help the injured brain cells heal better. “Stem cells” are the best-known of these implanted cells, but stem cell research is highly restricted in the United States. Because of this, researchers are investigating other types, such as bone marrow cells taken from adults and grown in test tubes. Another type of cell being investigated is modified tumor cells.

Dr. Michael Chopp, scientific director of the Neuroscience Institute at the Henry Ford Hospital in Detroit, has done animal research involving “stromal” cells from bone marrow and also using drugs. “The brain contains intrinsic restorative mechanisms that can be amplified by various interventions to reduce neurological deficits after stroke, traumatic brain injury and neurodegenerative disease,” Dr. Chopp said. “These interventions include cell-based therapies, such as bone marrow mesenchymal cells, cord blood and stem cells, and a variety of neurorestorative pharmacological agents, such as sildenafil (Viagra), statins (Lipitor, Zocor) and erythropoietins. The injured brain responds to these treatments by producing new brain cells, new blood vessels and new electrical connections as well as structural modifications that result in significantly improved neurological function after stroke, trauma and neurological disease.

“When mice and rats with stroke are treated with sildenafil, the drug provides very significant functional benefit,” Dr. Chopp said. “These animals do much better. There are far fewer functional deficits. Days later there is reduced neurological deficit and new brain cells.”

In another animal study, Dr. Chopp performed intravenous transplants of bone-marrow-derived “stromal” cells a week after inducing stroke in laboratory rats. In a test of sensory abilities 14 days after the stroke, the rats treated with the stromal cells completed the test 60 percent faster than the nontreated rats.

“New DIRECTIONS IN REHAB”

Dr. Michael Chopp
A detailed neurological examination showed that 14 days after the stroke the treated rats had a 30 percent improvement in overall neurological score compared to the control rats, and they reported major benefit months afterward.

Dr. Steven Cramer, an associate professor of neurology at the University of California, Irvine, is beginning to apply Dr. Chopp’s findings to humans. “Considering that the only approved treatment for stroke has a three-hour window,” Dr. Cramer said, “being able to give the treatment seven days after the stroke would be a miracle.”

“These marrow-derived cells are preferentially attracted to sites of injury, and once there they appear to transform into a pharmacy on wheels. They start cranking out growth factors right there, right away, front row. You give the patient one type of cell, and then it changes to another cell when it gets to the point of injury.”

Dr. Cramer is finalizing preparations to begin his study.

One problem with intravenous delivery is that when these cells are put into the bloodstream, every cell in the body is exposed to them, and the new cells could become another type of cell. Other researchers are investigating the potential of introducing the cells directly into the location of the stroke. While this method lessens the chances of the cells becoming some other kind of cell, there is higher risk because a hole must be drilled into the patient’s skull to deliver the cells.

Dr. Douglas Kondziolka, a neurosurgeon and researcher at the University of Pittsburgh, used exactly this approach in a Phase 2 study published in Journal of Neurosurgery. Fourteen patients received either 5 million or 10 million human neuronal cells implanted in their brains followed by two months of rehab. Four control patients received only rehab. There were no complications in those receiving the new cells, which indicates that this type of surgery may be safe. However, there was no significant difference in the functional measures of the two groups.

**ELECTRICAL STIMULATION OF THE BRAIN**

A new area of rehabilitation research involves direct electrical stimulation of the cortex of the brain. This differs from neuromuscular stimulation, where muscles are directly stimulated to induce contractions.

In cortical stimulation, doctors implant an electrode directly into the cortex in the exact location where an MRI has shown activity when the patient moves his or her wrist. With the electrode in place and turned on, the patient goes through intense occupational therapy training focusing on functional use of the affected upper limb. At the end of the therapy session, the stimulator is turned off.

“The theory is that you are relearning motor control, and electrical stimulation facilitates the neuroplasticity of the brain,” said Dr. Richard L. Harvey, a physiatrist and the medical director of the Stroke Rehabilitation Center at the Rehabilitation Institute of Chicago. Dr. Harvey is currently helping to enroll 170 stroke survivors in a multicenter research project examining cortical stimulation.

Survivor Judy Walsh, age 61, of Elmwood Park, Ill., participated in a previous study of cortical stimulation. Five years after a stroke had left her unable to use her left arm and hand, and unable to walk without a brace, she decided she had nothing to lose by joining the study and having an electrode implanted in her brain and a stimulator implanted in her right chest area. Wires under her skin connected the two devices.

Following the surgery, she participated in six weeks of therapy, five days a week – two hours of OT in the morning and 90 minutes on activities of daily living in the afternoon. After the six weeks of therapy, the electrode and stimulator were removed.

“I felt an improvement almost immediately,” Ms. Walsh
All in favor of a better non-surgical treatment for correcting foot drop, raise your foot.

Introducing WalkAide — a new treatment option for people experiencing foot drop. Using sophisticated sensor technology and Functional Electrical Stimulation (FES), WalkAide stimulates the muscles that flex your foot at the appropriate time during the walking cycle, helping you walk much more naturally and efficiently. Most patients with upper motor neuron-related foot drop who try WalkAide experience immediate and substantial improvement in their walking ability. Non-invasive and easy to use every day, WalkAide increases your mobility, stability, confidence and independence. Now you have a better way to get a leg up on foot drop.

Request your FREE Guide to Foot Drop.
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said. “I felt like I was using my hand more. For instance, I could hold myself up while brushing my teeth. I could move my arm while putting on clothes. My arm improved a lot; it’s not a dead thing on my body anymore. My arm is much better. I can move it, but I can’t move all my fingers well. I’d say it’s 40 to 50 percent better.”

The new study, called EVEREST, will provide insight into how effective this new therapy might be. “Cortical stimulation is cutting-edge science, using a stimulator to improve brain recovery,” Dr. Harvey said. “This is big. Still the stimulator settings we are currently using may not be optimal for recovery. Continued animal studies will tell us whether we should use more or less stimulation or change the polarity. We have a long way to go in working out the technology, but cortical stimulation will ultimately add to the rehabilitation of stroke patients.”

**Magnetic Stimulation of the Brain**

Since neurons conduct electricity, they can be activated by a magnetic field, which provides an alternative method for stimulating the brain. In “repetitive transcranial magnetic stimulation” (rTMS), electrical current is introduced into a copper coil held over the area of the brain to be stimulated. Investigation into the use of this noninvasive therapy is just beginning.

Dr. Gwyn Lewis, research associate in the Sensory Motor Performance Program at the Rehabilitation Institute of Chicago, will soon begin investigating whether rTMS can improve hand function in stroke survivors.

“We’re using repetitive TMS to see if we can alter the excitability of neural circuits,” Dr. Lewis said. “We are trying to put the brain into a state where it can learn better and see if that enhances the effects of movement training. It’s based on animal studies where electrodes had been inserted into the brain and movement performance improved. We’re replacing the electric with magnetic stimulation because it’s noninvasive and there are less associated risks. It doesn’t hurt. It feels like someone tapping you on the scalp. You hear a clicking noise and that’s all.”

Currently there is only limited research data on healthy subjects where it’s shown to enhance skill learning. Dr. Lewis’s study is one of the first to look at using this technology in stroke survivors. “We’re trying to enhance hand function because of its importance with ADLs (activities of daily living),” Dr. Lewis said.

Participants will have four sessions. Each session will focus on a different area of the brain and consist of three 20-minute segments – 10 minutes of rTMS followed by 10 minutes of hand therapy. “We will control the people receiving repetitive TMS with survivors who just get

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**NEW DIRECTIONS IN REHAB**

These are just a few of the dedicated men and women who are changing the direction of rehab.

Dr. Paolo Bonato
Dr. Michael Chopp
Dr. John Chae
Dr. Richard L. Harvey
Dr. Steven Cramer
Dr. Philip Kennedy
Dr. Gwyn Lewis
Dr. Joseph Pancrazio
Dr. Joel Stein
To receive free information regarding Vidatak’s augmentative communication products, or to order the EZ BOARD, visit the Vidatak website at www.vidatak.com.

“When I most needed to communicate I couldn’t speak, and I couldn’t really make myself understood. Nor did I feel like I was being given the opportunity to perform as an individual. I felt like I was being judged by a set of criteria for other patients. And, you know, that’s natural. I am not an ordinary patient. I’m sure no one’s an ordinary patient.”

Patient quote from UCLA Research Study using the Vidatak EZ Board

- Improved satisfaction with healthcare
- Decreased patient frustration
- Decreased use of pain and anxiolytic medication
- Potential decrease in hospital stay

I AM
Short of breath
Frustrated
Nauseous
Anxious
Disappointed
Tired
Drowsy
Better
Thirsty
Hot
Unsure (of What is Happening)
Gagging
In pain
Light-headed
Afraid
Lonely
Angry
Wet
Worse
Hungry
Cold

I WANT
To sit up
Water
Bath
Eyeglasses
Socks
Make a call
To Turn Right
Lights Off
It quiet
To be comforted
Prayer
Exercise
Lotion
Massage
Medications
Pillows
Lights Dim
To sleep

Please contact Alexa Richie
904.296.3815
richie.alexa@mayo.edu

More information is also available on the NIH site www.clinicaltrials.gov keywords ‘Sibling and Stroke’.
hand therapy. We will look at whether we can change performance with just one session and how long the effects last. If we can produce a change in one session, then we’ll study the effects of providing rTMS over a longer term.”

Dr. Randall Benson, a neurologist at Wayne State University School of Medicine in Detroit, is investigating the use of rTMS with survivors with aphasia. Through other research he has identified a neural network activated by speech. In his experiment, he will attempt to stimulate that network with rTMS and give survivors speech therapy.

“If we observe measurable changes either on the functional MRI or in speech and language functioning,” Dr. Benson said, “it will mark the first significant advance in the treatment of aphasia and possibly will contribute to a major shift in the approach to treatment of other deficits caused by stroke.”

Investigations are under way to evaluate the use of rTMS on depression and Parkinson’s disease.

**CAPTURING THOUGHT**

Neural prosthetics show promise of helping many survivors whose deficits are considered too debilitating for recovery. This category of treatment involves several approaches to fire the nerves attached to muscles. Some approaches, such as the drop foot stimulators that the FDA recently approved (see “Drop Foot Stimulator,” p. 23), use surface electrodes put on top of the skin over the muscle involved – no surgery is required. In other approaches, an electrode is implanted in the muscle with a stimulator outside the body. Still other systems use implanted electrodes connected to implanted stimulators with wires that go under the skin. The newest systems try to capture thoughts and turn them into meaningful action.

“Neural prosthetics have already benefited many people,” said Dr. Joseph Pancrazio, a biomedical engineer who is program director for neural engineering at the National Institute for Neurological Disorders and Stroke (NINDS). “Cochlear implants bypass the hairs of the ear and stimulate the auditory nerve directly. Deep brain stimulation that is being used to treat the tremor symptoms experienced by Parkinson’s patients is another type of neural prosthetic.”

Dr. John Chae is director of research in the department of Physical Medicine and Rehabilitation at Case Western Reserve University School of Medicine. He is investigating the use of functional electrical stimulation (FES) in the upper limbs of stroke survivors.

The study records electromyographic signals or electrical activity in a muscle using surface and implanted electrodes. The goal of Dr. Chae’s study is to improve the hand’s ability to be involved in rehab activities. “Motor relearning helps survivors regain the ability to open the hand by retraining and then to use it for functional tasks,” he said. “The brain can recover after injury through active repetitive action. That’s why if you don’t use the limb, you tend to lose it. You may be able to get the brain to reconnect by stimulating it constantly. Every time the upper limb is used, it gives neural feedback to the brain, which is very important for brain recovery.

“We are trying to help patients move paralyzed limbs through electrical stimulation,” Dr. Chae said. “We record residual electrical activity in the paralyzed muscle, amplify it and send it back to the muscle so that the muscle contracts. It’s somewhat analogous to power steering. Our hope is that this will facilitate recovery.”

In another development in neural prosthetics, neuroscientist Dr. Philip Kennedy is developing a system for synthesizing speech using neural activity associated with thinking about speaking. His company, Neural Signals, Inc., specializes in assistive devices for people with Lou Gehrig’s disease and other locked-in conditions.

“We’ve implanted a neurotrophic electrode into the Broca’s speech area of a stroke survivor with locked-in syndrome,” Dr. Kennedy said. This electrode records neural patterns in his Broca’s area when he tries to speak a phoneme, the basic unit of speech. After the computer has learned the pattern of neural firings for all 39 English phonemes, then it can recognize that pattern and

“The brain can recover after injury through active repetitive action. That’s why if you don’t use the limb, you tend to lose it. You may be able to get the brain to reconnect by stimulating it constantly.”

*Dr. John Chae*
Drop foot (also called “foot drop”) results from weak or paralyzed muscles in the foot and ankle that interfere with a survivor’s ability to flex the ankle and walk with a normal heel-toe pattern. The toes often touch the ground before the heel, causing the person to trip on their toes, walk with an exaggerated leg lift or drag the foot sideways.

Until recently the only treatment was an AFO (ankle-foot orthotic) that held the foot in a stationary position best for walking. AFOs do not allow a natural gait.

Another option became available recently when the U.S. Food and Drug Administration approved two devices that approach drop foot with functional neuromuscular stimulation. Both the Odstock Drop Foot Stimulator (ODFS) and the WalkAide electrically stimulate the peroneal nerve, which controls the movement of the ankle and foot, to raise the foot at the right time. Both devices are run by a single AA battery. Neither is specifically covered by insurance or Medicare.

The ODFS consists of a small, belt-worn, single-channel stimulator controlled by a foot switch. It’s used with two surface electrodes, connected to the stimulator by wire. The surface electrodes are placed over the peroneal nerve near the knee. The foot switch triggers electrical stimulation timed to match the survivor’s specific walking requirements. The timing is programmed by a doctor or therapist. The ODFS costs $750. For more information, visit www.odfs.com.

Instead of wire leads to a stimulator, the WalkAide has a cuff that holds the stimulator and surface electrodes. Rather than a foot switch, it uses sensor technology to analyze the movement of the leg and foot and send an electrical signal at the right time as a person takes each step. The device must be fitted by a professional and programmed with the WalkAnalyst program. WalkAide communicates with WalkAnalyst wirelessly using Bluetooth wireless technology. The WalkAide costs $4,495. For more details, visit www.walkaide.com.
He spent a month at the veteran’s hospital in Iowa City, Iowa, and was then transferred to the veteran’s rehabilitation center in Knoxville, Iowa, where he received remarkable care and physical therapy. His five months there had a profound effect on our lives.

When a close family member has a stroke, the entire family also suffers stroke, especially if the spouse or the child become a caregiver. It changes life forever, and sometimes, depending on the severity, that change is radical. In our case, it was a radical change because Earl had a complete right front lobectomy.

Our personal relationship with each other has been altered. Every other relationship is changed as well. Not one thing is the same. Now he lives his life from a wheelchair. He is unable to roll over or stand or sit up on his own. Speaking is limited, as is writing. Incontinence is a constant frustration, and if not handled carefully, it becomes a dignity issue, adding to the depression that accompanies stroke. Fatigue is something he lives with daily.

Some people in this circumstance have the resources that allow them to hire help, travel, join a health club for therapy and attend social events. But I would guess most stroke families are like us, living on a limited income. What savings we had are gone, and we live on Social Security. I do receive some extra because I am my husband’s primary caregiver, but our budget does not allow for extras, even something as important as health insurance for me.

Our family has been very supportive, and at the time Earl was hospitalized, they sacrificed time with their families to be with us. But life is demanding, and children and jobs need them. We are at the point now where we try to depend on family less and less and rely more on friends for mental and social support, as well as several agencies for respite time.

My advice to anyone living this new and trying life is this: Don’t be proud, let people help you. They get pleasure feeling that they are being useful. Often people offer to help, but we don’t take them up on that offer. We just need to forget our pride and accept their help.

Another thing, do not neglect your spirit. If attending church is out of the question, as it is for us, find a channel on TV or a station on the radio and attend church that way. Our church has a program where volunteers deliver a tape of the service to us each week.
Keep involved in your church by offering to do jobs from home for different events even though you may not attend. For example, get a list of shut-ins and send cards and letters to them regularly. A simple phone call can lift someone’s spirit. No one knows better than you what the disabled are going through, and you will get great satisfaction out of helping someone else.

Prayer works wonders and, personally, we could not have made it were it not for the prayers of our faith family. We did not do morning devotions before Earl’s stroke, but now it is routine, and it has been a good way to strengthen each other.

Next, find an outlet for stress. It is there and it will take its toll. Because I am too young for Medicare and do not have insurance, I need to stay well, and stress is a killer. So, I try walking every day. I make certain Earl is secured when I go out of the house; in fact, most of the time he is napping. I am not gone long, but a walk around the block does wonders. Walking is a good way to keep in shape and relieve stress.

Get a hobby. I knit, crochet and read. Reading to my husband gives him pleasure, so I try to do it every day.

Also I would urge you to take advantage of free medical screenings offered in your community. That’s how I keep a check on blood pressure, cholesterol and blood sugar. There is help out there, but you need to educate yourself.

There are organizations that will provide respite. Your community senior center or Alternatives for Older Adults are good places to start. If your spouse is a military veteran, check with Veterans Affairs. These groups have all kinds of information and resources to make life easier for you.

Finally, let go of your old life. Realize that you must move on. This has been the hardest for me.

We used to travel with friends and dine out every Friday night. Those were things that made life fun, but I found that they cause me to get impatient with my husband, and that cannot be.

We now go places that are easy in and easy out. A phone call ahead can tell you whether the place is congested or not. Arriving early sometimes allows us to get settled without drawing unwanted attention. If it is a place where you have never been, a phone call will prevent difficult situations. For instance, we decided to visit a local orchard last fall. Their idea of handicap-friendly was a steep walk to their entrance. Were it not for strangers helping me push the wheelchair up the walk, I would not have been able to do it. Most of the time people are eager to accommodate, if given fair warning.

Keep in touch with girlfriends or your coffee group. My lunch bunch has worked around my schedule many times so that we are able to have lunch most weeks. We have shared many tears and laughter over the years and, right now, their lives are so different from mine, but I need that fellowship, and so do you. It is important.

Life goes on and life is good, just different. Don’t let it pass you by.
The American Stroke Association recently released new evidence-based guidelines for preventing stroke in people who’ve had an ischemic stroke or a transient ischemic attack (TIA). Both ischemic strokes and TIAs are caused by clots that block blood flow to the brain.

The key to preventing another stroke is to work closely with your doctor to create a clear treatment plan with risk reduction goals. Below we’ve provided some information from the guidelines in plain English to help you do just that. Some of the most common risk factors are covered.

You may want to take a copy of this article with you the next time you visit the doctor. If your doctor hasn’t seen the new guidelines yet, they are available for anyone to view at http://stroke.ahajournals.org/cgi/content/full/37/2/577.

The guidelines also give recommendations for antiplatelet/anticoagulation treatment for people whose ischemic stroke was caused by a cardiac disorder. About 20 percent of all ischemic strokes are caused by cardiac disorders. Of these, atrial fibrillation, which affects more than 2 million Americans and becomes more frequent with age, causes over 75,000 strokes per year.

The new guidelines discuss some other factors that we can’t cover here. They include:

- acute MI and LV thrombosis
- arterial dissection
- atrial fibrillation
- cardiomyopathy
- cerebral hemorrhage
- cerebral venous sinus thrombosis
- hypercoagulable states (including inherited thrombophilias, antiphospholipid antibody syndrome)
- hyperhomocysteinemia
- large-artery atherosclerotic disease
- patent foramen ovale
- postmenopausal hormone replacement therapy (HRT)
- pregnancy
- sickle-cell disease
- valvular heart disease

What This Means for You

Talk to your doctor about these new guidelines. Your doctor can advise you about which recommendations are most important for you and what goals are appropriate for you.

Taking control of your own health is important. Not only will you reduce your risk of a stroke, but you’ll feel more confident about your health because you’ll have more control.
### Recommendations for Treating Modifiable Risk Factors

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<thead>
<tr>
<th>RISK FACTOR</th>
<th>TREATMENT RECOMMENDATIONS</th>
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<tbody>
<tr>
<td><strong>Hypertension</strong>&lt;br&gt;High blood pressure is 140/90 or above.&lt;br&gt;“Prehypertension” is 120–39/80–89, and normal blood pressure is less than 120/80 – but goals should be tailored to each patient.</td>
<td>- Lifestyle modifications such as increased physical activity, weight management and eating a heart-healthy diet can help reduce blood pressure.&lt;br&gt;- If your blood pressure is above normal, even reducing the top number by 10 and the bottom number by 5 has proven beneficial.&lt;br&gt;- Though the best drug combination isn’t known, evidence supports using diuretics alone or by combining them and an ACE (angiotensin converting enzyme) inhibitor.&lt;br&gt;- Just like goals, choice of drugs should be individualized to patients depending on the particular characteristics.</td>
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<tr>
<td><strong>Diabetes</strong>&lt;br&gt;Patients with diabetes must tightly control blood pressure and lipids (blood fats like cholesterol and triglycerides). Glucose should be controlled to near-normal levels.</td>
<td>- The goal for HbA1c, a test that measures blood sugar control over time, is 7 percent or less.&lt;br&gt;- Blood lipids (cholesterol, etc.) should be more rigorously controlled in patients with diabetes than in those without.&lt;br&gt;- Blood pressure control is very important for people with diabetes, and ACE inhibitors and ARBs (angiotensin receptor blockers) are usually first-choice meds.</td>
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<tr>
<td><strong>Cholesterol</strong>&lt;br&gt;Patients with high cholesterol and coronary artery disease or atherosclerosis (fatty buildups of plaque in arteries) should follow lifestyle modification, dietary guidelines and medication recommendations according to National Cholesterol Education Program III (ATP III) guidelines.</td>
<td>- Statin drugs are recommended; the goal is an LDL-C (LDL is the “bad” cholesterol) of&lt;br&gt;  - less than 100 mg/dL for those with coronary heart disease or plaque in arteries, or&lt;br&gt;  - less than 70 mg/dL for people at very high risk with multiple risk factors.&lt;br&gt;- People whose stroke or TIA was likely caused by atherosclerosis may still be treated with statins even if they don’t have high cholesterol.&lt;br&gt;- People with low HDL-C (below 40 for men or below 50 for women) may be considered for treatment with niacin or gemfibrozil.</td>
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<td><strong>Smoking</strong></td>
<td>- Don’t smoke.&lt;br&gt;- Avoid secondhand smoke.</td>
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<td><strong>Alcohol</strong></td>
<td>- Heavy drinkers should stop or reduce their alcohol consumption.</td>
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<tr>
<td><strong>Obesity</strong></td>
<td>- If you’re overweight, lose weight to reach&lt;br&gt;  - a BMI (body mass index, a measure of height to weight to determine body fatness) goal of from 18.5 to 24.9 kg/m² or&lt;br&gt;  - a waist circumference of less than 35 inches for women or less than 40 inches for men.&lt;br&gt;- To lose weight, balance caloric intake, physical activity and behavioral counseling.</td>
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<tr>
<td><strong>Physical Inactivity</strong></td>
<td>- Try to get at least 30 minutes of physical activity on most days.</td>
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<td></td>
<td>- If you smoke, counseling, nicotine products and oral smoking cessation programs can be effective in helping you quit.</td>
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<td></td>
<td>- Men may have up to two drinks a day; women, one.</td>
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<td></td>
<td>If you have one or more disabilities, you may benefit from a supervised therapeutic exercise regimen.</td>
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</table>
One by one the men and women turned onto a narrow gravel road heading toward a new experience at Living Springs Camp in Lewistown, Ill. I knew each person’s life had been permanently changed by a stroke, whether as a survivor or as a caregiver, and that they were arriving for a unique weekend.

Volunteers greeted participants with smiles and open arms, ready to offer encouragement, care and a chance to “Retreat and Refresh.” The first camping experience for stroke survivors and their families ever held in Illinois was under way.

This camping weekend grew out of the frustration and isolation I felt after my husband’s stroke in 2001. I saw an opportunity to build a community that would connect us in a special way.

Church camps had been a part of my youth, and as an adult I had participated in a camp for children and young people with cystic fibrosis. I had witnessed the positive impact of relationships built by relating to others facing similar life challenges. Our stroke support group and the friendships developed there had helped my husband, John, and me connect with others coping with life after stroke. I remembered the laughter, fun and joy of camp and wanted to recreate that experience for myself, my friends and others I was yet to know.

I first took this dream to our local support group, where the idea was met with overwhelming enthusiasm. My next stop was at the Central Illinois Stroke Council and the American Stroke Association. They were equally excited and ready to offer support.

They directed me to Dr. David Wang, director of the Stroke Network at OSF Saint Francis Medical Center and an American Heart Association Greater Midwest Affiliate board member, for final approval.

Once the dream was cast, I faced the task of raising the money. I obtained financial backing through local charitable foundations and local physicians. Next I had to find volunteers to actually go to camp and help make it happen. My sister and her husband, Sarah and Boyd Christy, who had directed several different camps, added their expertise. Nurses, social workers, physical therapists, dietitians and friends were willing to spend all or part of the weekend lending a hand. John’s brother, Michael, came to help with fishing on the small lake. Eventually the planning was done – and now the first “Retreat and Refresh” moment was happening.

The campers were registered and assigned either a room in the lodge or a modern cabin. Two golf carts stood ready to provide transportation for personalized tours of the campground and were used throughout the weekend for those who were not able to walk long distances.
By late afternoon, camp was in full swing. The first all-camp activity was held at the Challenge Course, providing everyone an opportunity to get acquainted and work together.

The first challenge was to somehow get a coiled water hose up and over a tall pole set in the ground. In no time someone suggested using his three-legged cane, and up and over it went.

The next challenge was to get as many people as possible standing together on a 4-foot-by-4-foot platform in three minutes. Soon survivors as well as other campers were helping people up and out of their wheelchairs and onto the platform. The end result was three survivors in the center, with five counselors and caregivers supporting them with outstretched arms. None of them had done anything so bold and childlike in many years.

Evening brought a beautiful sunset and the enjoyment of sitting around a campfire on a crisp, cool fall evening. Our volunteer music therapist led the singing, and with a variety of rhythm instruments everyone could participate.

As the weekend progressed, participants experienced a balance between typical camp activities and those specifically designed for stroke families. Several times each day the craft area was filled with people creating one-of-a-kind ceramic plates or bird houses. Peggy Jones, health initiatives director for the American Stroke Association, set up a resource room that offered uplifting and educational information.

One of the weekend’s most popular events was the pampering. Caregivers and survivors alike were enthusiastic when a local cosmetology school brought a group of students to provide manicures, pedicures and chair massages.

Those who were up to the challenge had an opportunity to climb a climbing wall.

Breakout groups provided workshops on such topics as exercise and its importance for survivors, healthy snacks in a flash, yoga, the diabetes and stroke link, and friendship and social changes following stroke. Small groups met to discuss some of the issues, emotions and challenges unique to stroke. Both caregivers and survivors got to have their own discussion groups share frustrations and brainstorm solutions.

But this camp was not just about the survivor. Equally important was providing a much-needed respite for the caregivers. At mealtime the caregivers were sent through the buffet line first, while counselors assisted survivors with their meals. Caregivers were offered a movie each evening while counselors entertained survivors who weren’t interested in watching the movie. One caregiver commented that she hadn’t watched a movie without interruption in years.

One of the most gratifying parts of the weekend was the visit by Dr. David Wang. Participants were thrilled that they got to enjoy his company as he joined in the spirit of the camp and painted ceramics with his nondominant hand. His relaxed hour of conversation discussing the medical side of stroke and answering questions gave everyone a feeling of hope.

Most of us wished the weekend would last a little longer. As we drove back home, I asked my husband John what he liked best about the camp and his answer says it all: “Seeing everyone smile and have fun for three days.”

Two “Retreat and Refresh” camp weekends are planned this year. They will be held September 22–24 and October 27–29 at Living Springs Camp, Lewistown, Ill. Cost is $75 per person for the weekend. Some scholarships are available. For more information, visit www.strokecamp.com or e-mail the director at maryleen@insightbb.com.

This camp was not just about the survivor. Equally important was providing a much-needed respite for the caregivers.

Photos (clockwise from left): a camper takes on the climbing wall; the sun sets over Living Springs Camp; campers get close on the challenge course; 2005 Stroke Family Campers
Kim Trow was 26 when she was diagnosed with lupus. A stroke was her first symptom.

At the time, Kim was vice president of employee relations with the former Marine Midland Bank, now known as HSBC, in Buffalo, N.Y. She was at work when she suddenly lost vision in her left eye. Not knowing what to do, she called her mother, who told her to go to the nearest hospital. Kim drove herself to a children’s hospital a few miles away, then waited in the emergency room to find out what was wrong.

Stroke, the doctors said. She saw a neurologist and within two days was flown to Johns Hopkins Medical Center in Baltimore. She had suffered 16 hemorrhages in her left eye, which is now permanently blind. A clot had formed in the central retinal vein, and the hemorrhages occurred around it. She also

Lupus, the Latin word for ‘wolf,’ can present menacing challenges to both patient and physician.

by Jim Batts
has experienced minimal left-side weakness consistent with a stroke.

Kim had no pre-existing medical conditions, so a stroke was the last thing she could have expected. “It was a rude awakening,” she said. “I had played tennis and exercised regularly, and I used to sail. That’s where I met my husband.

“I was also very driven, often working 60 hours a week.” Those days are gone. “I’m not working anymore,” she said. “But I’m such a fighter, and I’m much more aware of my body. I limit my exercise to noncompetitive activities.”

Doctors at Johns Hopkins said her stroke was caused by diabetes, lupus or multiple sclerosis (which generally doesn’t cause strokes; visual disturbances and loss due to MS are typically due to optic neuritis). Back home in Buffalo, Kim was finally diagnosed with lupus.

Kim is now 44, and lupus has affected nearly every organ in her body, including her heart, brain and lungs. In the meantime, life has gone on, including starting a family. “I wasn’t supposed to get pregnant. I was a high-risk patient.”

Doctors said she had an 85 percent chance of having another stroke. Nevertheless, four weeks before Kim’s due date, she and Clark welcomed their daughter Leah, now 8 years old and a third-grader.

Her hard pushing during labor caused a blood clot in her leg, resulting in deep vein thrombosis. “I received Coumadin (a blood thinner) and high levels of steroids the day after I delivered,” Kim said.

In addition to lupus, she has developed Graves’ disease, celiac disease and fibromyalgia, and she experiences lupus flares regularly.

A Wolf on the Prowl

Lupus – Systemic Lupus Erythematosus – gets its name from the Latin word for wolf. It’s a chronic autoimmune disorder in which the system that usually protects a body against infection suddenly becomes the enemy within. Antibodies that should be defending somehow go on the attack against healthy tissues and almost any organ of the body. It causes inflammation, injury and pain inside vital organs and systems.

Lupus can run in families, but it can’t be “caught” or be transmitted sexually. It likely is triggered by such things as overexposure to ultraviolet rays or certain drugs. Infections, trauma, stress, surgery or hormones may also prompt lupus symptoms.

About 1.5 million Americans have lupus. Women ages 15 to 44 are most likely to develop the disease, but men are also victims. It’s more common among African-American, Hispanic, Asian and Native American women. Death rates are more than five times higher for women than for men, and three times higher for African Americans than for Caucasians.

Between 1979 and 1998, lupus death rates surged by 60 to 70 percent.

Some common lupus symptoms are abnormal blood clotting, chronic joint pain, swelling or stiffness; achy joints; prolonged or extreme fatigue; skin rashes; chest pain or shortness of breath; seizures, sensitivity to the sun, unusual hair loss, swollen ankles – and the telltale butterfly-shaped rash across the cheeks and bridge of the nose.

– Adapted from the Lupus Fact Sheet of the Lupus Research Institute

How Does the Wolf Break In?

Nobody knows what causes lupus, but a primary focus is on genetic, environmental and possibly hormonal factors combining and somehow causing the condition.

Diagnosing lupus is difficult because symptoms come and go. Compounding the problem: The symptoms often mimic other diseases.

Early diagnosis and treatment can help manage lupus symptoms and reduce the chance of permanent damage. But no major new treatment has been approved in 40 years, and according to the Lupus Research Institute, current treatments can cause as much damage to a patient’s system as the disease does.

Working To Keep the Wolf at Bay

Dr. Robert Rouhey, a practicing rheumatologist, leads a research laboratory at the University of North Carolina at Chapel Hill with a supporting grant from the Lupus Research Institute. The research is focusing...
on the approximately one-third of lupus patients with antiphospholipid (aPL) antibodies in their blood. These patients can develop serious blood clotting problems leading to heart attacks, strokes, deep vein clots and pregnancy losses.

The goal is to find a genetic “biomarker” that will indicate which of the patients with antiphospholipid antibodies are at the greatest risk of blood clots and, therefore, may benefit from more aggressive treatment.

For example, a stroke could be caused by a clot forming in the heart, breaking off and going to the brain where it then blocks a blood vessel. The brain tissue lost as a result of the stroke was not affected by lupus prior to the stroke. The question then is how someone with lupus can differentiate stroke warning signs from others and what should they do if they’re not sure which is which?

“That can be difficult,” Dr. Roubey said. “Lupus can affect the brain in a number of ways, one of which is stroke. Hemorrhages in the eye also can occur in lupus due to inflammation of retinal blood vessels but would probably not be considered as a stroke.

Independently of stroke, people with lupus may experience ‘brain fog,’ cognitive dysfunction, seizures or even a coma. Additionally, people with lupus often have accelerated atherosclerosis and/or high blood pressure, both of which are well-known risks for stroke. Antiphospholipid antibodies are a very important risk factor for stroke and blood clots in both people with and without lupus.”

It’s important to be evaluated by a physician who’s knowledgeable about lupus who understands “all of the cardiovascular risk factors that may occur in lupus including antiphospholipid antibodies.”

Dr. Roubey adds that “symptoms of ‘brain fog’ and cognitive dysfunction may be difficult to assess and quantify. Simple screening tests of mental status may miss important problems with concentration, memory and executive functions that can be revealed by more complete neuropsychiatric evaluations.”

Whereas many of the neuropsychiatric manifestations of lupus are chronic and quite difficult to treat, stroke may be very amenable to treatment if diagnosed promptly. Dr. Roubey emphasizes that “it’s vitally important for people with lupus to know the warning signs of stroke and seek urgent medical attention if these occur. As the neurologists tell us, in stroke ‘time lost is brain lost.’”

For more information on lupus, contact the Lupus Research Institute online at www.LupusResearchInstitute.org or call 1-800-74-LUPUS.

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Know...

**THE WARNING SIGNS OF STROKE:**

- Sudden numbness or weakness of the face, arm or leg, especially on one side of the body
- Sudden confusion, trouble speaking or understanding
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden, severe headache with no known cause
“This is a problem, John,” proclaimed Gary, the attending mechanic, as he poked the underside of our 16-year-old car with a screwdriver. Particles of rust were appearing on the floor below the lift like little anthills, or rust stalagmites. This definitely was not an exploratory examination. Our car was in the automobile equivalent of Intensive Care.

I didn’t want to watch, but Gary wanted me to see the problem firsthand. “I was planning on getting the car detailed. Can I still do that?” I asked, half hoping that if it were shiny and clean it would make it better.

I knew I was in denial, but I was still thrown when Gary recommended that we should start thinking about getting a new car. The ’87 Honda was comfortable, familiar and perfectly broken in like an old pair of shoes. I didn’t want a new car. We didn’t use it that much anyway. We don’t really need a car in the city. We keep it at a railroad station upstate to visit family.

“Get an automatic so you’ll be able to drive,” Gary suggested. I always bought standard-shift cars, and I’m not going to change now. Hey, I don’t even walk with a cane anymore, so I don’t need an automatic. I hadn’t driven any car since the stroke eight years ago, but I was sure I could do it. I persuaded Marilyn to let me prove it.

Once we got to the empty parking lot we switched seats. This looked a lot easier from the passenger seat. Before starting the car I tried the clutch with my affected left leg. Okay, so far so good. Finally the moment of truth … I pressed the clutch to the floor, and started the car.

The title of Ralph Nader’s book “Unsafe at Any Speed” flashed in my mind like a bright neon sign outside a seedy hotel room. My left foot unintentionally slipped off the clutch. The car lunged forward like I was at a drag strip trying to break the quarter-mile speed record. The only thing in my mind now was the lyrics to “Dead Man’s Curve.” The car bucked so violently Marilyn and I felt like Debra Winger and John Travolta riding that mechanical bull in the movie “Urban Cowboy.”

The Honda was apparently as drained as we were and mercifully stalled. We both just sat for a while and savored the stillness before we looked at each other, and in unison said, “Change is good. We should get an automatic.”

We eventually ended up with a new Honda Civic … automatic, of course. Marilyn now complains that I drive very slowly. What fascinates me is a whole other brake and gas pedal grew on the passenger side of the car. I may drive slow compared to other cars, but it’s fast compared to a wheelchair.

Hey, I’m back driving. I can participate in that great American driving tradition – “road rage.” Nothing can top that wonderful feeling of accomplishment when you can flip someone the bird with your affected hand. Now that’s therapy.

Editor’s Note: Read John’s personal stroke story, “Life is at the Curb,” from the September/October 2003 issue of Stroke Connection at strokeassociation.org/strokeconnection, or book his one-man show about stroke recovery, “Brain Freeze,” by contacting him at jkawie@aol.com.
The kitchen can be a challenging place for people with stroke deficits like weakness on one side or low endurance. There are several Internet businesses that serve stroke survivors. Here are a few kitchen items from three companies with Web-based catalogs of assistive kitchen devices as well as other solutions for people with disabilities. You can also call the toll-free number for service.

**Adjustable Universal Cuff**
Helps people with limited hand function make a sure grip and adjusts to different-shaped handles. Elastic strap in palm can be stretched to hold items like silverware, brushes, combs and pens. A piece of cylindrical foam comfortably pads the palm. D-ring makes it easy to put on and take off. One size fits all. **$12.95**

**Pan Holder Keeps Pots in Place**
Stirring with one hand is now safe and easy. Place a pan’s handle in the slot of the steel-wire frame to prevent accidental spills. Attach to the stovetop with suction-cup feet. Accommodates different sizes of pots and pans. Epoxy coating prevents scratches on ranges and cookware. **$9.95**

**Surefit Plastic Food Guard**
This food guard has a contoured edge to help keep food on the plate. Hugs the rim of a dish for a secure fit. Measures 1½” high and will fit a 10 ¾”-diameter plate. Ideal for one-handed use. Easy to put on and remove. Microwave and top dishwasher rack safe. **$7.95**

**Bag Opener with Magnet**
This device is ideal for people with weak wrists who cannot open sealed plastic bags. The bag opener has a sharp point that punctures and slits open the plastic bag. The attached magnet keeps the bag opener in a handy place, such as on the refrigerator door. Sold in package of three. **$4.95**

**Melaware Cup**
This molded plastic cup is ideal for people who have decreased finger strength. The thumb and index finger slip easily around the narrow stem of the Melaware Cup. Holds 8 fl. oz.; dishwasher safe. **$14.95**

**Maple Cutting Board and Rocking “T” Knife**
Cutting board has a smooth finish and rubber feet on bottom to hold it securely in place while in use. Stainless steel nails on the cutting board hold food in place for cutting with one hand. Corner guards keep food from slipping off. Cutting board measures 11” square and 1” thick. Shown with Rocking “T” Knife. **Knife: $19.95; Board: $32.95**

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**Disability Products**

- [www.disabilityproducts.com](http://www.disabilityproducts.com)
  - Click on “Food Prep & Kitchen Aids.” Or type the name of the product into the search window.
  - Toll-free 1-800-688-4576.

**Life Solutions Plus**

- [www.lifesolutionsplus.com](http://www.lifesolutionsplus.com)
  - Click on “Kitchen Aids” in the left column. Or type the name of the product in the search window.
  - Toll-free: 1-877-785-8326
This information is provided by the American Stroke Association as a resource. The products listed are not owned or provided by the American Stroke Association. Additionally, the products have not been evaluated and their listing should not be construed as a recommendation or endorsement of these products.
We are earning income for life and creating a legacy.

American Heart Association Charitable Gift Annuities help save lives by supporting the fight against heart disease and stroke while earning fixed payouts for the rest of your life. You could benefit from tax deductions and capital gains savings. Contact your local American Heart Association representative to find out how to start receiving your lifetime payouts. Send in the attached reply card today.

How Much Income Will I Receive?

<table>
<thead>
<tr>
<th>AGE</th>
<th>PAYOUT</th>
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<tbody>
<tr>
<td>65</td>
<td>6.0%</td>
</tr>
<tr>
<td>75</td>
<td>7.1%</td>
</tr>
<tr>
<td>85</td>
<td>9.5%</td>
</tr>
<tr>
<td>90+</td>
<td>11.3%</td>
</tr>
</tbody>
</table>

- I would like to receive the free brochure, The Gift Annuity: A Lifetime of Income...and Personal Satisfaction. (CAA)
- I would like to see an illustration of the financial and tax benefits of a gift annuity for a person born on ___/___/____ and (optional) another person born on ___/___/____. (CAE)
- Gift Amount: $50,000 $25,000 $10,000 Other $__________
- I’m pleased to let you know that the American Heart Association is in my will/estate plan. (CAB)

Name: Mr. Mrs. Ms. ______________________________________
Address: ____________________________________________________
City: __________________________ State: _______________ ZIP: _____________
Telephone: __________________________ E-mail: __________________________

American Heart Association Charitable Gift Annuities
(888) 4-STROKE (478-7653)
Fax: (214) 706-5231

National Family Caregivers Association
Voice: (800) 896-3650
Fax: (301) 942-2302
www.thefamilycaregiver.org

National Aphasia Association
Voice: (800) 922-4622
Fax: (410) 729-5724
www.aphasia.org

Americans With Disabilities Act (ADA)
Voice: (800) 514-0301
TTY: (800) 514-0383
www.usdoj.gov/crt/ada/adaaccom.htm

National Rehabilitation Information Center (NARIC)
(800) 346-2742
www.naric.com

Note: We urge you to consult with a qualified financial advisor before making a final decision regarding any planned gift to the American Heart Association. This is not an insurance product. Payments are based on rates suggested by the American Council on Gift Annuities and are backed 100% by the American Heart Association’s own assets.

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Requests for information are confidential and never represent an obligation.
PLAVIX® clopidogrel bisulfate tablets

INDICATIONS AND USAGE

PLAVIX® (clopidogrel bisulfate) is indicated for the reduction of atherothrombotic events in the following populations:

- Recent MI, Recent Stroke or Established Peripheral Arterial Disease
- Patients at risk for cerebrovascular accident (CVA) or cardiovascular death who are undergoing percutaneous coronary intervention (PCI) in whom the use of a drug-eluting stent is planned
- Acute Coronary Syndrome

For patients with acute coronary syndrome (unstable angina or non-ST-elevation myocardial infarction [MI]) including patients treated with PCI (with or without drug-eluting stent), PLAVIX® has been shown to reduce the risk of a combined end of cardiovascular death, MI, stroke, or non-CABG/non-PCI rehospitalization due to unstable angina or refractory ischemia.

CONTRAINDICATIONS

- PLAVIX® is contraindicated in patients with a known hypersensitivity to clopidogrel or any of its inactive ingredients.
- There are no other contraindications for the use of PLAVIX®.

ADVERSE REACTIONS

The following adverse reactions are reported with PLAVIX® administration:

Hematologic: In patients receiving PLAVIX, hematologic abnormalities occurred at a rate of 2.2%. The rate was 1.7% in patients receiving placebo, for a 25% reduction in risk in favor of PLAVIX. The incidence was similar in all age groups. In the CAPRIE trial, the rate of major bleeding was 2.7% in patients receiving PLAVIX and 3.2% in patients receiving placebo. For patients receiving PLAVIX plus aspirin, the rate of major bleeding was 2.1% compared to 2.4% for those receiving placebo plus aspirin.

Patients receiving PLAVIX or aspirin had more frequent gastrointestinal events than those receiving placebo. In patients receiving aspirin, the incidence of these gastrointestinal events was 11.2% in patients receiving aspirin alone versus 7.0% in those receiving aspirin plus placebo. In patients receiving PLAVIX, the incidence of these gastrointestinal events was 11.7% in patients receiving PLAVIX alone versus 8.1% in those receiving PLAVIX plus placebo.

Other adverse experiences of potential importance occurring in 1% to 2.5% of patients are listed below regardless of relationship to PLAVIX. In general, the incidence of these events was similar to that in patients receiving aspirin in CAPRIE or placebo in CURE. The overall incidence of bleeding is described in Table 1 for patients receiving clopidogrel plus aspirin compared to placebo plus aspirin.

Table 1: CURE Incidence of bleeding complications (% patients)

<table>
<thead>
<tr>
<th>Event</th>
<th>PLAVIX + Aspirin</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Major bleeding</td>
<td>3.7</td>
<td>2.7</td>
</tr>
<tr>
<td>Minor bleeding</td>
<td>3.4</td>
<td>2.0</td>
</tr>
<tr>
<td>Headache</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Intraocular bleeding</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
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<td>3.4</td>
<td>2.0</td>
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Other adverse events were observed in PLAVIX-treated patients:

- Headache
- Dizziness
- Hemorrhagic: In CAPRIE patients receiving PLAVIX, gastrointestinal hemorrhage occurred at a rate of 2.7% and required hospitalization in 0.7% in patients receiving aspirin, compared to 2.3% and 0.5%, respectively, in patients receiving placebo. In CURE, patients treated with aspirin were associated with an increase in bleeding compared to placebo in both trials. Table 1 shows that there were more patients experiencing major bleeding in patients taking PLAVIX plus aspirin compared to placebo plus aspirin, primarily gastrointestinal and at paracutaneous sites. The rate of major bleeding (≥200 ml) was comparable in both groups.

The overall incidence of bleeding is described in Table 1 for patients receiving clopidogrel plus aspirin compared to placebo plus aspirin.

Table 2: Adverse Events Occurring in ≥2.5% of PLAVIX Patients in CAPRIE

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YOU DON’T WANT ANOTHER HEART ATTACK OR ANOTHER STROKE TO SNEAK UP ON YOU.

PLAVIX HELPS KEEP BLOOD PLATELETS FROM STICKING TOGETHER AND FORMING CLOTS, WHICH HELPS PROTECT YOU FROM ANOTHER HEART ATTACK OR STROKE.

If you’ve had a heart attack or stroke, the last thing you need is another one sneaking up on you. PLAVIX may help. PLAVIX is a prescription medication for people who have had a recent heart attack or recent stroke, or who have poor circulation in the legs, causing pain (peripheral artery disease).

PLAVIX OFFERS PROTECTION.
PLAVIX is proven to help keep blood platelets from sticking together and forming clots, which helps keep your blood flowing. This can help protect you from another heart attack or stroke.

IMPORTANT INFORMATION: If you have a stomach ulcer or other condition that causes bleeding, you shouldn’t use Plavix. When taking Plavix alone or with some medicines including aspirin, the risk of bleeding may increase. To minimize this risk, talk to your doctor before taking aspirin or other medicines with Plavix. Additional rare but serious side effects could occur.

Please see important product information on the previous page.

TALK TO YOUR DOCTOR ABOUT PLAVIX.
For more information, visit www.plavix.com or call 1-800-609-7515

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