SPECK HEALTH

STROKE PREVENTION THROUGH DIET AND EXERCISE

In partnership with POTENTRx February 2015

What is a Stroke?

Stroke, or cerebrovascular accident (CVA), occurs when parts of the brain are deprived of oxygen. There are two types of stroke: (1) hemorrhagic stroke and (2) ischemic stroke. A hemorrhagic stroke refers to either a brain aneurysm burst or a weakened blood vessel leak that causes blood to accumulate in and around the brain. This results in swelling and increased cranial pressure, ultimately damaging brain tissue. An ischemic stroke pertains to a blood clot that blocks a blood vessel carrying blood to the brain. When brain cells are cut off from their supply of oxygen, they die, resulting in partial loss of brain function. What is lost is dependent on the location of the stroke and the amount of the brain affected.

Stroke is the 4th leading cause of death in the United States, but up to 80% of deaths caused by strokes are preventable.

Stroke.org

Know Your Facts!

Q: What are the symptoms of stroke?

A: Sudden numbness or weakness of your 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.

Q: What are the risk factors of stroke?

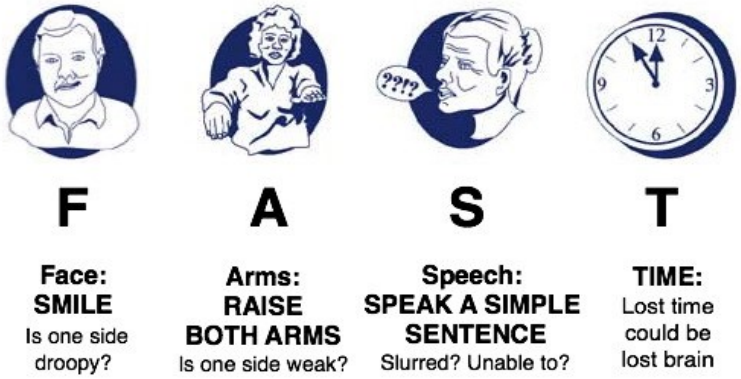
A: Some of the common risk factors include hypertension, high total cholesterol levels (≥200 mg/dL), smoking, diabetes, atrial fibrillation, other heart diseases such as heart failure and dilated cardiomyopathy, peripheral artery disease and carotid artery disease, obesity, sickle cell disease, physical inactivity and poor diet.

Q: I had temporary stroke symptoms; should I be worried?

A: Temporary stroke symptoms are caused by a transient ischemic attack (TIA) and result in temporary blood flow loss to the brain. Although TIA does not cause permanent brain damage, 40% of people who have had a TIA will have a stroke. If you have experienced a TIA, contact your health provider immediately so you can learn how to properly manage your health to prevent a future stroke.

Q: Is there anything I can do to prevent a stroke aside from taking medication?

A: Yes! There are many modifiable risk factors that contribute to strokes. Please refer to the reverse side for lifestyle changes that can help to prevent stroke.



Factors of Stroke

There is no one, definite cause of stroke, but the following are known to increase the risk for stroke:

Modifiable Risk Factors

Obesity or being overweight, smoking, lack of physical activity, stress, poor diet, alcohol consumption, high blood pressure (#1 cause of stroke), and circulation problems.

Non-Modifiable Risk Factors

Family history of stroke, age, ethnicity (African-Americans have a higher risk than Caucasians), diabetes, atrial fibrillation, fibromuscular dysplasia,

What Can Exercise Do For Stroke Prevention?

Regular exercise can lower blood pressure 4 to 9 mm Hg, which is equivalent to the effect of some medications. 150 minutes per week of moderate aerobic exercise is recommended. This can be broken up to thirty minute sessions, 5x per week or further broken down into three 10 minutes sessions of exercise, 5x per week. Recommended exercise includes walking, jogging, biking, swimming, or household chores that increase your heart rate for extended periods of time. In addition to lowering blood pressure, exercise can help manage your weight and cholesterol levels.

What Can Life-style Changes Do For Stroke Pre-vention?

There are many effective lifestyle changes to prevent stroke— the primary being reducing your blood pressure. You can manage your blood pressure through exercise and a healthy diet like the DASH diet. You should also be aware of the amount of cholesterol you are ingesting (avoid trans and saturated fats). A healthy diet in combination with regular exercise will help control your weight. You should stop smoking and reduce the amount of alcohol you drink to 2 drinks per day for men, and 1 drink per day for women.

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STROKE SYMPTOM MANAGEMENT THROUGH EXERCISE

In partnership with POTENTRx January 2015

Residual Negative Effects of Stroke

Hemiparesis (weakness on 1 side), hemiplegia (paralysis on 1 side), spasticity (increased muscle tone and an inability to control those muscles), cognitive dysfunction, speech difficulties, reduced ability to perform activities of daily living (ADLs), sedentary lifestyle, physical deconditioning, balance deficits, and increased risk of recurrent stroke and other forms of cardiovascular disease.

Common exercise program goals

Develop and maintain a physically active lifestyle, meet current physical activity needs, improve strength and cardiorespiratory fitness, help regain/exceed post-stroke levels of physical activity, improve gait and walking abilities, improve upper extremity function, improve motor skill performance and ability to perform self-care tasks, prevent recurrent strokes and reduce risks and occurrence of other cardiovascular diseases.

Functional Impairments Related to Areas of Brain Damage

Area of brain affected	Impairments	Potential exercise limitations
Cerebrum		
Right side	Left side paralysis/weakness	Trouble weight bearing, gripping, grasping, lifting, balancing, walking
		Increased fall risk
	Vision problems	Trouble with walking/balance
	Quick, impulsive behavior style	Trouble following safety cues
		Trouble following precautions, exercising without supervision
	Memory loss	Trouble retaining directions
Left side	Right side paralysis/weakness	Trouble weight bearing, gripping, grasping, lifting balancing, walking
		Increased fall risk
	Speech/language problems	Difficulty communicating during exercise sessions
	Slow, cautious behavioral style	Trouble moving/reacting quickly or preventing a fall
	Memory loss	Trouble retaining directions
Cerebellum	Ataxia	Trouble maintaining posture, balance, and coordination

What Can Exercise Do For Stroke Management?

Aerobic training has been shown to increase aerobic capacity and mobility function, reduce blood pressure and energy expenditure at submaximal work levels, and reduce overall CVD risk.

Resistance training has been shown to improve lower-extremity muscle strength, power, and endurance, balance upper limb strength and function, and induce skeletal muscle hypertrophy (to grow or increase in size).

Exercise Precautions:

It is important to see a physician to determine the severity of your stroke because your exercise goals will be based off of the evaluation. Make sure to get a pre-exercise assessment to determine whether or not exercise is safe for you. You should also get a medical examination to identify any other conditions or stroke-related limitations that could affect your exercise capabilities. The pre-exercise assessment and medical examination will tell you if you are capable of exercising, or if you need to exercise with supervision.

Aerobic Training Program Recommendations for Stroke Survivors	
Frequency	3-5 d/wk, either accumulated in ≥ 10 min. sessions or all at once as best tolerated
Intensity	40-70% of HRR or 55-80% of HRmax/or an RPE range of 5-7 (of 10). Raising the treadmill elevation can increase the workload for those who are unable to increase their walking speed.
Type (mode)	Large muscle group aerobic activities. A combination of standing (weight bearing) and seated (non-weight bearing) activities as appropriate, which can include: Treadmill walking, ground walking, stationary upper- and lower-body cycle ergometry, combined upper- and lower-body cycle, or step ergometry.
	Handrails, partial unweighting (harness) systems, and gait belts can increase safety for individuals who experience lower extremity muscle fatigue or losses of balance. Those who use assistive devices (canes, walkers, etc.) should use them when performing ground walking.
	Foot straps, ace wraps, and glove-mitts can provide support for hemiparetic hands and feet during ergometry.
	Chairs placed along walking corridors can provide rest and/or recovery for individuals experiencing fatigue.
	Those who use straps, wraps, and glove-mitts may not be able to release and move their limbs quickly enough if they are experiencing a loss of balance. This may induce an increased risk of falling. Close supervision is warranted during endurance training.
Monitoring	Pulse rate, BP, and RPE conducted before, during, and after workouts can ensure exercise session safety.
Communication	Written instructions, pictures, and frequent demonstrations can improve learning and retention of exercise tasks and safety procedure in individuals with cognitive deficits.
BP = blood pressure; HRR = heart rate reserve; RPE = rate of perceived exertion; HRmax = maximum heart rate.	