AU InforMed

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Key Inforbits

- Types of stroke
- Symptoms of stroke
- Stroke prevention strategies
- New music therapy
- Genetics of stroke
- Stroke history

May is STROKE Awareness Month

What is a stroke?

Cerebrovascular Disease (CVD), or stroke, is a reduction in blood flow to the brain causing a disturbance of function for longer than 24 hours. There are two different types of strokes and various degrees of loss. A transient ischemic attack (TIA) is a milder form of stroke where there is a rapid onset (5 minutes) and short duration (2 to 15 minutes, up to 24 hours). The symptoms vary depending on the area of the brain affected. A TIA may be the only warning of an impending stroke, with the greatest risk occurring in the next several weeks. In the US, a patient suffers from a stroke every 45 seconds (700,000 per year) and leads to 1 death every 3 minutes (3rd leading cause of death).

Risk Factors include: Hypertension, atrial fibrillation, age, gender (men> women), race (African American > whites), coronary heart disease, smoking, diabetes, high cholesterol, amphetamine or cocaine abuse, Previous stroke/TIA.

Types of Stroke

Ischemic (89%)

- Inadequate supply of oxygen and nutrients to an area of the brain. Caused by thrombosis (obstruction of the artery), embolism (debris from elsewhere), or systemic hypoperfusion (general circulatory problem)

Hemorrhagic (11%, higher mortality rate)

- Too much blood within the closed cranial cavity; Caused by intracerebral hemorrhaging (ICH) or bleeding into or from the brain tissue

Signs and Symptoms

- Sudden weakness, numbness, or paralysis of the face, arm, or leg, typically on one side of the body
- Loss of speech or understanding language

- Sudden loss of vision
- Sudden severe headache
- Unexplained dizziness or loss of balance and coordination

1. DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM. Pharmacotherapy: A pathophysiologic approach: 7th ed. NY: McGraw Hill Medical, 2008: p. 373-375.
2. American Stroke Association [homepage on internet] American Heart Association; [cited 2009 April 24] Available from www. http://www.strokeassociation.org

Stroke Prevention Strategies: 10 ways to help patients prevent stroke.

1. **Get your blood pressure checked.**
   - High blood pressure (hypertension) is a leading cause of stroke.
   - You can check your blood pressure at your doctor's office or at your local pharmacy.
   - If the top number is above 120 and/or the bottom number above 80 then set up an appointment with your doctor.
2. **Get an electrocardiogram (ECG) to check for atrial fibrillation (AF)**
   - Atrial fibrillation (AF) is an irregular heartbeat that can allow blood to pool in the chambers of your heart, which can clot and cause a stroke.
   - If you have AF, your doctor may lower your risk for stroke by prescribing medicines commonly referred to as blood thinners, such as aspirin and warfarin (Coumadin®)
3. **Stop smoking**
   - Smoking doubles the risk for stroke.
   - If you stop smoking today, your risk for stroke will immediately begin to drop.
4. **Drink in moderation.**
   - Drinking more than two alcoholic beverages per day can increase your risk for stroke by as much as three fold and can also lead to liver disease, accidents and social problems.
   - If you drink, we recommend no more than two drinks each day, and if you don't drink, don't start.
   - Alcohol can interact with some medications. Therefore always ask your doctor or pharmacist if alcohol could interact with the medication you are taking.
5. **Have your Cholesterol checked.**
   - It is important to keep your LDL (bad cholesterol) down and to try to increase your HDL (good cholesterol). It is important to also know your triglycerides (TG) level.
   - Diet and exercise can help increase your HDL, while prescription medications called 'statins' will significantly reduce your LDL.
   - Keeping your cholesterol in check will reduce your risk of stroke.
6. **Check to see if you have diabetes mellitus (DM)**
   - Having DM puts you at significant risk of stroke if left uncontrolled.
   - Your risk of stroke can be significantly reduced if you control your DM with medication.
7. **Start exercising or increase your exercise**
   - Exercising 30 minutes most days (around 150 minutes/week) has been shown to decrease risk of stroke from hypertension, DM, and elevated cholesterol.
   - Just increasing your daily activities will starting improving your health
   - Remember to see your doctor before starting an exercise program
8. **Decrease salt and fat intake**
   - Both excess salt and high fat diets can increase your risk of stroke

9. **Get checked for circulation problems**
   - Diseases of the blood vessel of your body, such as peripheral artery disease, can significantly increase your risk for stroke.
   - Ask your doctor to check for any vascular diseases at your next check-up.
10. **Finally, know the symptoms of a stroke**[1]
   - If you have any stroke symptoms, seek immediate medical attention

If you suspect a stroke

Act F.A.S.T.[1]	
Face	Ask the person to smile. Does one side of the face droop?
Arms	Ask the person to raise both arms. Does one arm drift downward?
Speech	Ask the person to repeat a simple sentence. Are the words slurred? Can he or she repeat the sentence correctly?
Time	If the person shows any of these symptoms, time is important. Call 911 or get them to the hospital fast.

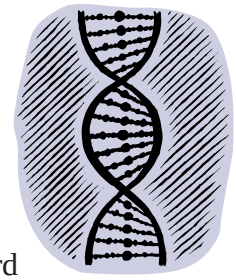
1. National Stroke Association. Available at: http://www.stroke.org/site/PageServer?pagename =PREGUIDE#1. 2009. Accessed on 4/23/09

New research: Music Therapy May Improve Vision After Stroke

Music therapy is known for its mood-enhancing and relaxing effects. Researchers now think that positive emotional responses to music may help restore vision in stroke patients. Did you know that more than half of stroke patients suffer from impaired visual awareness, which is called "visual neglect." These individuals are unable to visually process objects on one side of the body. This is because the part of their brain responsible for connecting vision is damaged. This study examined three stroke patients with visual neglect to determine the effects of listening to music they liked, music they did not like, and silence while completing visual tasks. The participants were able to identify colored shapes and lights in their impaired vision field more accurately when they were listening to the music they liked. Also when people listened to music they liked, brain scans showed that areas linked to positive emotional responses were activated. This activation accounted for the improved visual performance. The researchers postulated that improved emotional functioning may lead to more efficient brain signaling. For more information about music therapy, please visit Natural Standard's Health & Wellness database.[1]

1. Natural Standard's Health and Wellness Database. Available at: http://www.responsetrack.net/lnk/naturalstandard /1903895/?14Y75033ACW . 2009. Accessed on: 4/23/09.

Genetic Basis of Stroke:



A recent genome wide study published in the *New England Journal of Medicine* associates a single gene with increased risk of stroke. Results showed that two changes in a single nucleotide on a specific chromosome were associated with stroke. Direct genotyping showed that this nucleotide was associated with an increased risk of all types of strokes. The study looked at white, black, and Dutch cohorts. The results showed that there was a hazard

ratio of 1.30 (95% confidence interval [CI], 1.19 to 1.42) and 1.33 (95% CI, 1.21 to 1.47) in the two white groups. Corresponding hazard ratios were 1.35 (95% CI, 1.01 to 1.79; P = 0.04) and 1.42 (95% CI, 1.06 to 1.91; P = 0.02) in the large cohort of black persons and 1.17 (95% CI, 1.01 to 1.37; P = 0.03) and 1.19 (95% CI, 1.01 to 1.41; P = 0.04) in the Dutch sample.

Ikram MA. Et al. Genomewide Association Studies of Stroke. N Engl J Med. 2009; 360: 1718-1728.

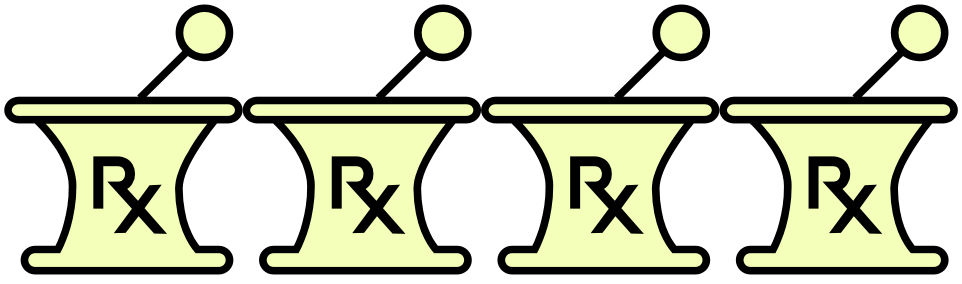
Did you Know….

Hippocrates, who is known as the father of medicine, first recognized stroke over 2,400 years ago. He called it apoplexy, which means "struck down by violence" in Greek, due to the fact that a person developed sudden paralysis and/or changes in bodily function. At this time physicians had little knowledge of the anatomy and physiology, therefore little could be done. During the mid-1600s , Jacob Wepfer discovered that patients who died of apoplexy had bleeding in the brain. He found that apoplexy could also be caused by a blockage in one of the brain's blood vessels. Finally, in 1928, apoplexy was divided into categories based on the caused. This led to the terms stroke or cerebral vascular accident (CVA). Some people now refer to it as a brain attack to parallel heart attack since the underlining cause is lack of blood supply to that area.[1]

1. University of Virginia Health System. Available at: http://www.healthsystem.virginia.edu/uvahealth/adult_neuro/history.cfm Last updated on: 2/12/2004. Health topics contact. Accessed on: 4/23/09.

The last "dose" …

"Your brain is a masterpiece, divided into two parts, left and right. In the left nothing is right and in the right nothing is left."
-Dr. G. Rajesh Gopal



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