VOLUME 1, ISSUE 1

FEBRUARY 2013

Stroke Recovery Tips

www.stroke-rehab.com

Only One Working Hand? Adaptive Equipment to the Rescue!

Many stroke survivors are left with long term disability, and one frequent disorder seen is paralysis of one side with little use of the affected arm. Many therapists focus on trying to regain function of the paralyzed arm yet neglect to properly educate stroke patients on the multitude of adaptive equipment and clothing that is available to help when only one hand is properly functioning Some examples of this type of equipment include:

Button hooks for 1 handed buttoning.

Racks or stands to hold playing cards, books, hair dryers, etc.

Adaptive clothing with snaps, Velcro, elastic, and other easy fasteners that can be done with one hand. There is even adaptive clothing that is made to be taken off/on from a seated position so that caregivers can easily change clothing for someone confined to a wheelchair.

One handed keyboards for using the computer.

Rocker knives to allow for cutting meat with one hand as well as other adaptive feeding utensils.

Steering wheel adaptations to allow for one handed driving.

One arm wheelchairs to allow for getting around in a wheelchair without assist.

Voice activated typing programs.

Did you know?

On average, 1 in 4 Americans die from stroke every 4 minutes.

The top three risk factors for stroke are high blood pressure, diabetes, and smoking.

Approximately 1/2 of people who experience a TIA (mini stroke or Trans Ischemic Attack) are unaware of the occurrence?

Inside this issue:

Exercise Tip of the Month

Use the strong arm to help assist the weak arm in bilateral arm activities. Bilateral activities are ones where you are using the arms together. A good simple way to start is by placing both hands on the sides of a ball. If you can keep your weak hand on the ball, try bending both elbows and bring the ball toward the chin without the weak hand falling off. Keep practicing until you can get the ball to the chin and can repeat the movement multiple times.

Then move on to raising the ball with the arms straight and so on. If you cannot even keep the weak hand on the ball, practice laying the weak hand on top of the ball and keeping it there without falling off. Then place both hands on the sides of the ball and practice holding the weak hand on the side of the ball without falling off and then progress to moving the ball with both hands as described previously.

Neuroplasticity or rerouting of brain connections requires repetition of movement and activity. Following through with exercises and activities helps with this brain remodeling.

FOLLOWING THROUGH WITH HOME EXERCISE PROGRAMS

Many patients participate in therapy but then once they are discharged do not follow through with exercises at home on a regular basis. Here are some tips for making follow through with home exercise easier.

1. Organize your home exercises into a binder so that you can easily access the exercises.
2. Create a box of supplies needed to do your home exercise program. For example, you can use a shoe box and put items such as a theraband, theraputty, coins, cards, grip strengtheners, pen, paper, etc. This makes it easier to sit around and do exercises because you have your box of supplies right next to you.
3. Have someone exercise with you or hold you accountable for exercising. This way you will be less likely to skip your exercises.
4. Keep an exercise log and check off when you do exercises. This way you can see just how much you are doing.
5. Track your progress or functional gains to help motivate you to keep exercising.
6. Participate in activities you like that incorporate your exercises. For example instead of doing finger exercises, practice playing the piano or doing crafts to improve dexterity. If you are doing something you love, you are more likely to follow through with it.
7. Spread exercises out so you are not fatigued by doing too many at once.
8. Vary your routine to prevent boredom.

CAREGIVER'S CORNER

Common Caregiver Complaint: I can't get my loved one who has had a stroke to do anything at home. He/she will do more for the therapists than for me.

Solutions:

1. Don't be readily available for your loved one during tasks they can do. If your loved one is slow at getting dressed and labors with it, don't do it for them. Go in another room and give them time to work on doing it for themselves. Caregivers often jump in too soon and take over a task that a stroke patient could do if given enough time.
2. Rather than asking your loved one if they want to do exercises or take a bath, say "we are going to do exercises (or take a bath) now." Don't give them the opportunity to say no especially if the stroke has effected their motivation. Do respect their wishes if they adamantly refuse, but you may be able to avoid the refusal by stating what you plan to do with them rather than asking them if they want to participate.
3. Try giving your loved one small tasks to help with such as sorting socks or folding washcloths.

APPS THAT CAN HELP STROKE PATIENTS

There are various cell phone and tablet apps available to help stroke patients. Here are a list of some apps that may be helpful.

Fine Motor Apps:
Dexteria
Fruit Ninja
Dot to Dot Number Whiz
Magic Piano
Finger Run

Aphasia Apps
Vocally
My Talk Tools
Comprehension TherAppy
Dragon Dictation
Small Talk
Talk Pat
iName IT
JABtalk
AAC Speech Communicator
AAC speech Buddy
TaptoTalk
Quick Talk AAC

Cognitive Apps
Lumosity Brain Trainer
Math Vs. Brains
Clockwork Brain
Brain Challenge
Skill Game
Awesome Memory
Make Change
Brain Fitness
Spaced Retrieval Therappy

Vision Apps
Vision Therapy by Tap
Eye Training Visual Edition
Eyesight Training

A helpful app list can be found at https://docs.google.com/file/d/0B5tRg3glRTWXREdhcWg0dkFvWWs/edit?pli=1

Stroke Research

From American Friends of Tel Aviv University, January 23, 2013:

Oxygen Chamber Can Boost Brain Repair
Hyperbaric treatment has significantly resuscitated activity in damaged brains, TAU researchers find

Stroke, traumatic injury, and metabolic disorder are major causes of brain damage and permanent disabilities, including motor dysfunction, psychological disorders, memory loss, and more. Current therapy and rehab programs aim to help patients heal, but they often have limited success.

Now Dr. Shai Efrati of Tel Aviv University's Sackler Faculty of Medicine has found a way to restore a significant amount of neurological function in brain tissue thought to be chronically damaged — even years after initial injury. Theorizing that high levels of oxygen could reinvigorate dormant neurons, Dr. Efrati and his fellow researchers, including Prof. Eshel Ben-Jacob of TAU's School of Physics and Astronomy and the Sagol School of Neuroscience, recruited post-stroke patients for hyperbaric oxygen therapy (HBOT) sessions in high pressure chambers that contain oxygen-rich air — which increases oxygen levels in the body tenfold.

Analysis of brain imaging showed significantly increased neuronal activity after a two-month period of HBOT treatment compared to control periods of non-treatment, reported Dr. Efrati in PLoS ONE. Patients experienced improvements such as a reversal of paralysis, increased sensation, and renewed use of language. These changes can make a world of difference in daily life, helping patients recover their independence and complete tasks such as bathing, cooking, climbing stairs, or reading a book.

According to Dr. Efrati, there are several degrees of brain injury. Neurons impacted by metabolic dysfunction have the energy to stay alive, but not enough to fire electric signals, he explains. HBOT aims to increase the supply of energy to these cells.

The brain consumes 20 percent of the body's oxygen, but that is only enough oxygen to operate five to ten percent of neurons at any one time. The regeneration process requires much more energy. The tenfold increase in oxygen levels during HBOT treatment supplies the necessary energy for rebuilding neuronal connections and stimulating inactive neurons to facilitate the healing process, explains Dr. Efrati.

For their study, the researchers sought post stroke patients whose condition was no longer improving. To assess the potential impact of HBOT treatment, the anatomical features and functionality of the brain were evaluated using a combination of CT scans to identify necrotic tissue, and SPECT scans to determine the metabolic activity level of the neurons surrounding damaged areas.

Seventy-four participants spanning 6 to 36 months post-stroke were divided into two groups. The first treatment group received HBOT from the beginning of the study, and the second received no treatment for two months, then received a two-month period of HBOT treatment. Treatment consisted of 40 two-hour sessions five times weekly in high pressure chambers containing oxygen-rich air. The results indicate that HBOT treatment can lead to significant improvement in brain function in post stroke patients even at chronically late stages, helping neurons strengthen and build new connections in damaged regions.

See the full article at http://www.aftau.org/site/News2?page=NewsArticle&id=17851

Citation: Efrati S, Fishlev G, Bechor Y, Volkov O, Bergan J, et al. (2013) Hyperbaric Oxygen Induces Late Neuroplasticity in Post Stroke Patients - Randomized, Prospective Trial. PLoS ONE 8(1): e53716. doi:10.1371/journal.pone.0053716