



Houston Parkinson's Disease Research, Education and Clinical Center
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Researchers Complete DBS Study

Electrical stimulation of the brain — a treatment in which a pacemaker-like device sends pulses to electrodes implanted in the brain — is riskier than drug therapy but may benefit patients with Parkinson's disease (PD) who no longer respond well to medication alone.

Researchers from the Department of Veterans Affairs (VA) and National Institutes of Health (NIH) conducted a six-year study comparing deep-brain stimulation (DBS) to medication, along with speech, physical or occupational therapy, given as needed. The results of the trial, the largest of its kind, appeared in the January Journal of the American Medical Association.

"DBS offers hope for a large number of patients with advanced PD who suffer from complications of long-standing medication therapy," says Eugene Lai, MD, PhD, director of the Houston Parkinson's Disease Research, Education and Clinical Center (PADRECC). "This finding could mean improved quality of life for some of our patients."

The study included 255 Parkinson's patients at seven VA medical centers and six university hospitals. The VA sites were Houston, Portland, Seattle, San Francisco, Los Angeles, Richmond, and Philadelphia, members of VA's network of PADRECCs. The article also noted that the VA's nationwide system of hospitals and specialized centers of excellence makes it uniquely able to conduct large trials of new therapies.

Patients who took part in the study took medication but no longer had meaningful improvements in symptoms (tremors, stiffness). Many also displayed fluctuating responses to medications, such as involuntary face, arm or leg movements.

Researchers followed the patients for six months, and found that the DBS patients gained 4.6 hours per day of good motor control and few or no involuntary movements, compared with those on medical therapy alone; 71% of DBS patients showed significant gains in motor function, compared with only 32% of drug therapy patients. Side effects (infections, falls, depression, gait and balance problems, and pain) were four times more common in the DBS group, but most resolved during the study.

Along with serious side effects, another drawback of DBS is that, while it improves movement, it does little to help memory, gait and balance problems, depression, and difficulty with gastrointestinal, urinary, or sexual function.

"The results of the study should not be over- or under-stated," says Dr. Lai. "Still, there are many good candidates for DBS among the PD patients we treat at the PADRECC."

The VA's Cooperative Studies Program and the National Institute of Neurological Disorders and Stroke, part of the National Institutes of Health, sponsored the trial. Additional support came from Medtronic, which manufactures the DBS device. VA treats about 40,000 veterans nationally with the disorder each year.

L to R: Dan Lauch, Joe Brown, Dr. Eugene Lai, board members of the Houston Area Parkinson Society (HAPS), participated in a recent HAPS educational symposium in Houston.



Getting Your Arms and Hands in Shape

For those of you keeping up with my “exercise” series of articles, we are ready to move beyond posture and trunk activities to recommendations for moving your arms more effectively (legs will be highlighted in a future installment). In our last issue we exercised the shoulders; now we move to the forearm, wrist, and hand. I like to recommend that you start at the shoulders and work down toward your hands, but the sequence really doesn't matter as much as just getting in some arm activities/exercises every day!

FOREARM AND WRIST REGION:

Twisting your forearm up and down – sit up tall with your elbows bent to 90 degrees and your palms turned upward. Turn your palms downward, by twisting your forearms, and then twist them upward again. You want to perform this isolated twisting movement *8-10 times* in each direction being sure to move through all of your available range of motion in the forearms. **SPECIAL CHALLENGE FOR THE NOT SO FEINT OF HEART:** Start this same exercise with the palm on your right hand facing upward and the palm on your left hand facing downward. Twist both forearms at the same time, only now they will be moving in opposite directions: right hand down while left hand is moving upward. Continue this routine for at least 5 twists each direction.

Wrist movement 1 – with your elbows bent to 90 degrees and forearms turned upward, bend your wrists as if you want to bring your fingers in the direction of your elbows. [CAUTION: Even though your fingers will be moving, you still want to focus on getting your wrist to bend upward.] Next, extend or straighten your wrists backwards as if to “dump” something out of your hands. Repeat the upward and backward movements of the wrist *8-10 times* in order to both stretch and strengthen those movements.

Wrist movement 2 – still keep your elbows bent to 90 degrees with your upper arms against your body, but turn your forearms in a downward direction. Lift your left wrist up while pushing your right wrist down and then alternate so that the right wrist will lift while the left wrist moves downward. Continue this rhythmic movement of left wrist up, right wrist up, left wrist up, etc. until you have lifted and bent each wrist *8-10 times*. Then show someone that you have learned to dog paddle!(cont)

Handwashing Is Good For Your Health

Many infections spread by direct contact with hands that are carrying germs. Wash your hands to stay healthy!

When should you wash your hands?

- Before and after eating.
- After using the toilet.
- After coughing-sneezing into your hands. (cont bottom pg 3)

PADRECC Staff Below L to R:

Gabriel Hou, MD, PhD, neurologist (Associate Director of Research), Linda Fincher, RN, BSN (Assistant Clinical Director), Shawna Johnson, RN, BSN (Clinical Coordinator), Louise Mercer (PADRECC Clerk), Naomi Nelson, PhD, RN & Marilyn Trail, MOT (Co-Associate Directors of Education), Suzanne Moore (Research Assistant), Farah Atassi, MD (Research), Aliya Sarwar, MD, neurologist (Associate Clinical Director), Brenda Wade (Administrative Officer), Michele York, PhD (Neuropsychologist) Laura. Wu, MD, PhD, (PADRECC Fellow), Eugene C. Lai, MD, PhD, neurologist, (PADRECC Director).



Getting Your Arms and Hands in Shape (cont)

HAND EXERCISES:

1. **Finger curls** – beginning with your fingers stretched open as far as they will go, slowly bend them from the finger tips into the palm until you have formed a relaxed fist. Squeeze the fist tighter until you have tensed all your hand muscles and then open and stretch the fingers into a straight position again. Alternately open and close your fingers, making a strong fist each time, for *8-10 repetitions*. You want to improve flexibility, strength and circulation in your hands and this rhythmic opening and closing will help all three.
2. **Thumb across palm** – sitting upright (you haven't forgotten your good posture yet, have you?) with your forearms turned upward (i.e., palms facing the ceiling), bring your thumbs up and across the palms until you can touch your palm at the base of your little finger. Spread your thumbs back out in order to fully open your hand, and then reach up and across again targeting the touch to the base of the little finger. Repeat this isolated movement of your thumbs *8-10 times* in order to fully exercise the muscles at the base of your thumbs.
3. **Coordinated finger to thumb touches** – you've been working hard to improve your thumb and finger flexibility and strength, so let's finish with a really fun activity to improve coordination! The overall plan is for you to touch each finger tip separately and coordinately with your thumb tip to a basic count of "1 and 2 and 3 and 4" which will be *repeated 4 times slowly and then 4 times more rapidly*. Do a quick practice round with your thumb and 1st finger touching tip to tip (on "1") followed by a complete opening of your hand (on "and"); continue by touching the 2nd finger (on "2") followed by a complete opening of your hand (on "and"); touch tip-to-tip on the 3rd finger (on "3") followed by a complete opening of your hand (on "and"); and finally touch tip-to-tip on the 4th finger (on "4") followed by a complete opening of your hand (on "and"). These movements then get repeated over and over as you return to the 1st finger after finishing the 4th finger. Do a complete round of 4 sets of finger to thumb touches in a reasonably slow and rhythmic manner, and then challenge yourself to go faster for 4 sets. You can count faster with the same general rhythm or you might want to get some music that allows you to warm up at a slow pace, but quicken that pace as you feel comfortable. Please don't get discouraged with this last activity, because as the action speeds up, then you are more likely to feel uncoordinated; however, I have had several people tell me that the "coordinated finger to thumb touches" have really helped them with improving their hand dexterity for manipulating small objects, so why not give it a try?

So now you know some good shoulder, forearm, wrist, and hand exercises to do in concert with your posture and trunk exercises (in previous Newsletters). I guess the only body part left to work on is your legs, so I hope that you will look forward to a future installment with that information.

(The above information is for educational purposes only and should not be considered as medical treatment or health-care advice. Readers should consult their own physician for individualized medical treatment and a physical therapist for individualized exercise programs.)

Betty MacNeill, PT, MEd, Associate Professor

School of Physical Therapy, Texas Woman's University, Houston

After touching public doorhandles, rails, etc.	between fingers, thumbs, and under fingernails for 20 seconds.
Before <u>and</u> after handling food and raw meats	Rinse hands with warm running water and get all the soap off; pat dry with clean towel.
Steps for Good Handwashing	Turn off water faucet with towel.
Wet hands under warm running water.	<i>James H. Quillen VAMC Infection Control, Mt. Home, TN</i>
Rub hands together with soap; work up lather.	
Wash the palms, sides, backs of your hands and	

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Eugene Lai, board
members of the
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Houston PADRECC Director's Corner

In February, President Obama announced that he was reversing the previous administration's restrictions on government funding for embryonic stem cell research. While this is welcome news for the Parkinson community, stem cell research is still in its infancy, and we have much to learn about the biology and functioning of these cells. One possible undesirable consequence is that, if their growth cannot be adequately regulated, stem cells have the potential to change into different tissue types, even cancerous tumors. Scientists believe that understanding how these cells develop into different tissues in the human body is vital to the success of future advances in stem cell therapy. The risks and benefits of implanting stem cells into the body still need to be thoroughly studied. That said, there is much cause for hope. The embryonic stem cell is the best starting point we know to produce the dopamine producing neurons that would replace the same damaged cells in the parkinsonian brain. Findings from stem cell research are also potentially valuable in the discovery process of new drugs and other novel treatments for PD. Although much work will be required to make stem cell therapy safe and possible to benefit PD patients, I am convinced that we will ultimately accomplish our goal. *Eugene C.*

Helpful Hints for Care Partners

- P** – Paying attention to your health is your most important responsibility.
- A** – Absorb all that you can about Parkinson's disease.
- R** – Reach out to others for support and assistance.
- K** – Kindly take care of yourself through exercise and good nutrition.
- I** – Imagine that you can do what is required of you.
- N** – Nature contemplation while walking is a diversion from other responsibilities.
- S** – Support groups in the community are an excellent way to share with others.
- O** – Only you can determine the limits of your time, energy, and health.
- N** – Name the stressors that you feel and talk to someone about them.
- S** – Stress reduction through exercise and socializing is essential.

Naomi Nelson, PhD, RN
PADRECC Co-Associate Director of Education



PADRECC welcomes our new nurse, **Shawna Johnson RN, BSN, PADRECC Clinical Coordinator**. Her rich research background includes work at both the Lipid and Athero Section and Vascular Division and Endovascular Therapies at Baylor College of Medicine. On your next PADRECC visit, you'll recognize Shawna by her beautiful smile.

Find pleasure in
small things —
old Irish proverb



Laura Wu, MD, PhD, demonstrates the autonomic test machine. Dr. Wu is the PADRECC research fellow working with Gabriel Hou, MD, PhD— principal investigator of a VA VISN grant to test the autonomic nervous systems (cardio-vascular regulation) of Parkinson's disease patients who have undergone surgery for deep brain stimulation (DBS).

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