BRAIN TRUST

BRAIN ENDOWMENT BANK™

UNIVERSITY OF MIAMI MILLER SCHOOL OF MEDICINE

NATIONAL PARKINSON FOUNDATION

SPRING 2007

CELEBRATING MARCH AS BRAIN AWARENESS MONTH

Brain Endowment Bank 1986-2007

The Brain Endowment Bank™ at the University of Miami Miller School of Medicine together with the National Parkinson Foundation, continues its mission of providing, researchers with brain tissues to help solve the mysteries of neurological and neuropsychiatric disorders which devastate the lives of so many. The Brain Endowment Bank is a unique resource for scientific and medical researchers, one that holds the key to understanding the cause, prevention and cure for many brain-based illnesses.

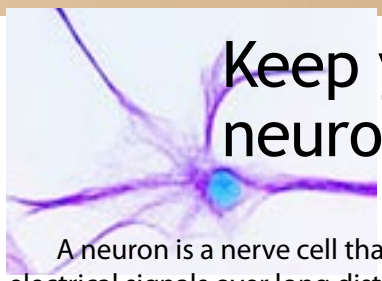
The team of talented researchers at the Brain Bank, led by Director Deborah Mash, Ph.D., are involved in wide-ranging investigations, including studies of Parkinson's disease and other movement disorders, drug addiction, aging and neuropsychiatric diseases.

Parkinson's disease research is looking at risk factors associated with the illness and chemical changes that occur as the disease progresses. Aging studies are focusing on development of the brain into the eight, ninth and tenth decades of life. An annual assessment of each patient allows us to determine the cognitive development of our donors and relate the findings to aging and studies of the brain.

(L) Margaret Basile, M.A., *Assistant Director of Brain Tissue Repository;* John Pablo, Ph.D, *Assistant Director of Tissue Procurement*

We have recently demonstrated that cocaine abusers have an overexpression of the neuronal protein alpha-synuclein. This increase may be a toxic gain, predisposing addicts to neurodegenerative changes in DA neurons and the development of Parkinson's disease.

This issue of the Brain Trust provides information of interest to our friends, supporters and those who have pledged to donate tissue to the Brain Endowment Bank. **Join us in our mission to end the suffering caused by brain-based diseases.**



Keep your aging neurons healthy

Deborah C. Mash, Ph.D.

A neuron is a nerve cell that sends and receives electrical signals over long distances within the body. The brain consists of neurons, as well as many other cell types. There are approximately 100 billion neurons in the human brain – more than the number of stars in our galaxy. Neurons have a complex structure, with a cell body, many dendrites, and an axon. The cell body consists of a nucleus, which controls the cell's activities, as well as several other structures important for it's function. Each neuron is connected to thousands of other nerve cells through its dendrites and axons. Dendrites are mainly responsible for receiving messages from other neurons, while the axon transmits messages away from the cell body, either to other nerve cells' dendrites, or directly to muscles and glands. Neurons are surrounded by glial cells, which provide them with protection, support and nourishment. As we age, we may loose our neurons. Gray matter of the brain is composed of neurons and with normal aging, there is a loss of gray matter in the brain. Changes in blood flow to the brain can also affect the way the brain ages.

Deborah C. Mash, Ph.D. *Professor of Neurology and Molecular and Cellular Pharmacology, Director of Research*

How can we age razor sharp into our 8th, 9th and 10th decade of life? This is a major question for neuroscientists. Although neuroscience does not have all the answers to this question, research is pointing us in the right direction. It is increasingly clear that diet plays an important role in increasing the lifespan. However, which foods are best for brain is less certain. Vegetables (spinach), fruit (blueberries, raspberries) and certain

Continued on Page 4

The Importance of Tissue Donation

Knowing You Have Helped Softens the Loss

Rosetta Rolle Hylton,LPN
Outreach Coordinator for Donor Registration, Liaison for National Pathology Network

As the Outreach Coordinator for Donor Registration for the Brain Endowment Bank, I am often in the position of requesting tissue donations from relatives who are in the midst of their grief. I am always humbled by the generosity of these family members who find the strength to see through their pain to help in critical medical research.

Many of our tissue donors come from families who lose relatives unexpectedly, and they are not registered donors. Often, the family is not aware that their loved one wished to make this important donation. It is a very difficult time, but because of the research requirements, it is critical that we obtain the family's approval quickly. Still, my expression of sympathy, condolence and worthiness of the cause may not be enough to convince the family at this emotionally-charged time. The process would be much easier if families clearly discussed donations of organs and tissues. By sharing your desires with those close to you, everyone will understand what the deceased would have wanted at this difficult time.

I encourage everyone to have this discussion now.

I would also like to express my sincere gratitude to all those who have become part of our mission to cure brain-based illnesses. Thank you!

Meet Linda Duque, M.A., C.A.P.

Brain Bank Manager of Live Donor Registry, Database Coordinator of Healthy Brain Aging, Cognitive Testing Neurology Researcher

Linda Duque, M.A., C.A.P.

For the last few years I have had the pleasure of managing the live donor registry at the Brain Endowment Bank™. I phone our donors yearly to maintain the database. With over 600 donors, I have made friends with many wonderful, caring individuals, who share my interest in neurodegenerative disorders.

The gift of the donation itself is incredible, but we are also thankful to our donors for answering our telephone calls for cognitive testing, which adds tremendously to our research data. Our database is a testament of our donors' level of commitment to neurological research. Our donors have inspired me. As a result I am also proud to have added my name to the Brain Endowment Bank's Donor Registry.

Shirley Mantyh - A Life of Purpose and Generosity

It wasn't until the last years of Shirley Mantyh's life that she was diagnosed with multiple system atrophy disorder (MSAD). During her struggle with this disorder, she often spoke to her husband about donating her organs in an effort to help others.

During a long hospitalization, she was sad that her life was coming to a close, but still joyful that she had family and skilled, compassionate medical staff surrounding her. As a token of her gratitude, Shirley made 200 beaded rainbow bracelets to give to her favorite caregivers. The colorful bracelets began appearing throughout the hospital. When someone would ask where they too could get the beautiful bracelets, the answer was: "You must be a member of Shirley Mantyh's Best Girlfriend Club." In the end, Shirley slipped into a coma and the family decided that her body would be buried, but her brain would be donated to the Brain Endowment Bank for research. Today, more than five years since Shirley's passing, the lively rainbow bracelets are still worn by hospital staff who remember Shirley's spirit and beauty. In her memory, Shirley's family offers this poem:

When I die, if you need to weep, cry for your brother or sister walking the street.
When you need me, put your arms around anyone to give them what you need to give me.
I want to leave something more than words or sounds, look for me in the people I've known and loved.
And if you cannot give me away, at least let me live in your eyes and not on your mind.
You can love me most by letting hands touch hands, bodies touch bodies. And let go of children that need to be free.
Love does not die, people do. So when all that's left of me is love, Give me away!

IN MEMORIAM

A Living Tribute

The Brain Endowment Bank™ acknowledges with heartfelt sympathy and gratitude

Ms. Rita B Eisenberg

of Coconut Creek, Florida (May 25, 1921-January 6, 2006) for her foresight and most generous contribution to neuroscience research.

We extend our gratitude to the 800 registered donors whose contribution to neuroscience research paves the way fir discovery of novel treatments, causes and cures.

Dr. Carlos Singer Brings Patients to the Brain Bank

Dr. Carlos Singer

Carlos Singer, M.D. is a Tenured Professor of Neurology at the Leonard Miller School of Medicine at the University of Miami. He is also the Director of the Division of Parkinson's Disease and Movement Disorders. He received his medical degree at Central University of Venezuela in 1972. He trained in Internal Medicine at Montefiore Hospital at the University of Pittsburg and in Neurology at the Albert Einstein College of Medicine Hospital. Futher training in Electromyography and Movement Disorders was completed at the University of Miami in 1980-1989.

Dr. Singer organized the first Botulinum Toxin treatment program for neurological disorders in the state of Florida in 1990. He has also been the Principal Investigator of numerous clinical trials of antiparksonian drugs, as well as trials of Botulinum toxin for Dystonia.

The co-author of many original articles and reviewer of articles covering the gamut of the field of Parkinson, Dystonia, Tic Disorders and Chorea, Dr. Singer has also authored and co-authored articles on the neurology of sexual dysfunction and urological manifestations of Parkinson's disease. His lectures abroad include Venezuela, Argentina, Chile and Brazil.

Dr. Singer's large base of patients has been instrumental in the on-going recruitment of Parkinson donors for the Brain Bank. Dr. Mash, along with the staff of the Brain Bank, would like to recognize and thank Dr. Singer for his cooperation in our recruitment efforts.

Keep Your Brain Healthy With a Diet of Tropical Fruit

New studies show that tropical fruits are an excellent source of potent anti-oxidents. Luckily for us, living in South Florida means the year-round availablity of fresh fruits. Including relatively rare tropical fruits that are not available in other regions of the U.S.

Antioxidents protect cells from damage by neutralizing free radicals, which are charged atoms thar are produced in the body as "leftover" byproducts of metabolism. They may also form due to exposure to toxins such as tobacco smoke or pesticides. Free radicals can damage cells in the body, including brain cells. This damage can accumulate through age and cause illness such as cancer, heart disease and neurological disorders.

Natural antioxidents occur in a healthly diet, but many people are now taking vitamins containing antioxidents, such as vitamin E, C and beta-carotene. But studies say that dietary antioxidents are the best: whole foods, fruits and vegetables. New studies show that many tropical fruits are showing exceptional levels of antioxidents and these have not yet been synthesized into pill form.

Some examples include: **mangoes, avacados, carambola (star fruit), sapodilla plum (naseberry), canistel (egg custard fruit), green and black sapote and mombin.** Look for them in the supermarket, specialty groceries or roadside stands. Take advantage of our subtropic climate and eat all those fresh tropical fruits!

- by Margaret Basile

Your Support Can Help Reseach for Cures to Brain-Based Disease

To continue our mission, a portion of the Brain Endowment Bank's support must come from private donations.

The Brain Endowment Bank™ must maintain its current programs, expand research and continue growing to meet future challenges. To accomplish these goals, we depend on the generosity of individual donors such as you.

NAME_____

ADDRESS_____

CITY_____STATE____ZIP_____

PHONE_____EMAIL_____

PLEASE RETURN TO: BRAIN ENDOWMENT BANK™
1501 NW 9th Ave Room 4013
MIAMI, FL 33136

- ◯ Yes, I want to support the Brain Bank. Enclosed is my check.
- ◯ I want to become a tissue donor, please contact me.
- ◯ I would like to volunteer.
- ◯ I would like to support the Brain Bank in other ways, please contact me.

Please assist us in our efforts. Your donation will ensure the Brain Endowment Bank™ continues to fullfill its critical mission.
We need your help.

Brain Endowment Bank™
University of Miami Miller School of Medicine
National Parkinson Foundation
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FIRST CLASS POSTAGE

Keeping Neurons Healthy - ***Continued from page 1***

beverages (green tea, red wine) that contain polyphenolic compounds with antioxidant and anti-inflammatory properties are likely to promote good brain aging. Berries (cherries, red grapes) bolster cellular antioxidant defenses and may contribute to maintenance of brain function.

Several studies suggest that massage therapy can improve the quality of life and psychological wellbeing of patients with Parkinson's Disease. Patients reported an improvement in blood circulation and an increase of motion and flexibility. Massage also stimulated lubrication of the joints allowing for pain-free movements. In addition to traditional treatments prescribed by neurologists and physical therapists, massage may help in relieving muscle rigidity, motor discomfort and tremors. Doctors say this is accomplished by increasing blood supply and nutrition to the muscles. Of course, it has long been proven that massages in a tranquil setting contribute to overall relaxation and a reduction in stress - increasing the sense of well-being and leading to a more enjoyable life for all who give it a try!

Not surprising to most people is the fact that stress has a bad effect on the brain. Stress may actually damage the brain, affecting the hippocampus, a region of the brain that is involved in memory function. Getting a good night's sleep is important for the brain. Years of sleep deprivation can actually build up, causing extra stress on a brain that is aging.

Older brains process information more slowly, probably starting in middle age. As a result, it may take longer to make decisions or judgments and to assimilate complex information. Whether or not this is due to the loss of neurons is not clear, since the older people lead lives that are different. For example, the elderly tend to have fewer new experiences, be less physically active and socially engaged, and live in less complex environments. This change in lifestyle may slow down brain activity, making it less plastic and able to change in response to challenges in the environment. Neuroscientist have found that the brain has many mechanisms for repair and regeneration that are activated when you challenge brain and form new connections.

The bottom line for healthy brain aging sounds simple. A good way to stay on track for aging well is to eat the right food, get a good night's sleep and stay socially active.

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