IMPROVING MEMORY IN PATIENTS WITH EPILEPSY

by Drs. Stella Karantzoulis, William B. Barr, and Steven Pacia

Temporal lobe epilepsy (TLE) is considered the most common epileptic syndrome. Many patients with TLE are active at home, in school, or in the workforce and seek feasible interventions to maintain and/or improve their overall cognitive functioning and thereby maintain their functional independence and improve their quality of life. Memory impairment is a common consequence of epilepsy. Anxiety and depression associated with the diagnosis of epilepsy is also not uncommon, largely due to a lack of understanding of consequences of the cognitive deficits for future life or the possibilities to train or restore memory. For these reasons, our primary goal is to develop a treatment program that improves the cognitive and behavioral outcomes of people living with epilepsy.

One practical approach to enhance cognitive functioning among people living with epilepsy may come from new computer technology. This approach is based on findings that show that if given the right kind of exercises, the brain will reshape itself to be more effective and efficient in processing new information. Not surprisingly, several private companies have capitalized on these data and developed video games to exercise the brain (see the table below for an idea of how many programs have been developed; adapted from Fernandez & Goldberg (2009)). Only one company (Brain Fitness Program, Posit Science) has so far validated their software in a scientific trial (with positive treatment effects) but this was with older adults without any memory problems. There is also some preliminary data that supports the use of this training program for improving memory among individuals with schizophrenia. As shown in the table, currently available products vary in terms of the method used, target age, target domain (e.g., specific vs. generalized training), clinical validation, and price. This wide variation is confusing for customers, as well as professionals, which has likely limited their use in clinical settings. This technology has the advantage of being cost effective, time-efficient, adaptive, engaging, and easily implemented in real and familiar environments (i.e., patients’ homes).

(continued on page 11)
I just returned from Game Day - one of my favorite days of the year. So many children and their friends and family come together for a day of amusement and adventure. While epilepsy and seizures is the common bond among the participants - for one afternoon - it is laughter, not AEDs, that is the most effective medicine. I’ve especially enjoyed watching attendees grow from participants to volunteers - once again affirming that faces is far more than an organization, it is a family.

Some of you know that in a few days I am leaving my role as Executive Director of faces. I’ve been fortunate to work with an organization that has accomplished so much over the past years--innovative research programs have been funded, new initiatives have been launched to support parents and teens and our reach as a community extends well beyond the tri-state area thanks to our use of social media. This broader reach has given me an opportunity to learn far more than I could have imagined from the incredible members of the faces family. I am inspired by your personal stories - your ability to celebrate your successes as well find strength in the midst of challenges - to never quit. This personal connection is what gives faces the strength and motivation to do what we can, to make each day brighter.

Dr. Devinsky and his team have the herculean task of caring for our community. Quite simply, they are heroes and they remind us to never hang our heads, never let small matters detract us from what we are working towards - finding a cure. Each piece of the faces program is inherently linked together - and while success can be defined in the most tangible sense by the dollars we raise each year - we can never be satisfied until we have demystified the nature of seizures, developed AEDs and other treatments that lack devastating side effects and heighten awareness about the challenges someone with epilepsy confronts on a daily basis. There is much to be done, but each day, we get closer.

In closing, I want to thank all of you for teaching and sharing so generously - your strength and bravery have had a profound impact on me both personally and professionally. For that I am forever grateful. faces is in very good hands – Linda, Peggy and Cynthia are excited to help take the program to new heights and it is with great optimism and anticipation that I will continue to cheer on the successes of this great organization.

All my best,

Lisa K. Millman, Executive Director of faces

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Parent’s Network Program

The Parent’s Network Program offers support for parents with the many challenges surrounding care for a child with epilepsy.

The Network gives families much-needed information on a variety of topics ranging from:

EDUCATIONAL SERVICES
HOSPITALIZATION
SOCIAL SUPPORT RESOURCES

Would you like to be a part of our network program?
Would you like to get in contact with a support parent?
Interested in becoming a support parent?

For more information, please contact the faces office at 646.558.0900 or facesinfo@nyumc.org
It starts with a feeling of euphoria. Warm water wells up from my chest to my head, as my vision becomes exceedingly clear—too clear to be authentic. This clarity quickly gives way to detachment, as if I've left my surroundings and only a mannequin of my body remains. Memories of joyful feelings come to my head; eager to place these feelings, I refuse the medical certainty that these memories are false. Soon, an alarm signal travels from my brain, down my spine, and into my most remote appendages. As I put myself on the floor, I repeat, “I feel terrible! I feel terrible!” more passionately with each call. A partial complex seizure catches me from behind, from my right occipital/temporal lobe, to be precise.

When asked what my life is like with epilepsy, I am at a loss to answer because this is the only life I know. Although even the notion of epilepsy scares some away, my seizures draw me closer to those around me and I cherish the support of my family and friends. The adage that hardship separates true friends from superficial ones rarely resonates as anything but a platitude. However, the lemon bars and butter crunch toffee I've received while in the hospital are tangible evidence of the relationships fostered by my affliction, stronger and more revealing with each episode. When an unexpected friend walks me to the nurse's office or calls me to ask how I am feeling, epilepsy inspires me.

Along with seizures comes stigma, fear manifested in belittlement. Historically, epileptics have been perceived as possessed by evil spirits, but perhaps I have enlightened some. While disparaging remarks do upset me - I am human - I treat stigma as an opportunity to educate those who hide behind ignorance, unable to understand the true nature of a seizure. When a peer jokes about seizures as we pass flashing lights, I cringe but choose not to respond aggressively; instead, I explain epilepsy and its varied forms. In so doing, bitter antagonists can become interested friends, and my sphere of relationships expands.

Others plagued by this disorder may be reticent about their experiences, yet seizures have made me kindred with those who face epilepsy and with all who face adversity. A good friend's revelation that she suffers myoclonic seizures brings us closer together than we ever were. As I watch another friend struggle, told that she may have suffered a seizure, I offer the support of a fellow sufferer, eager to comfort a friend who faces what is so intimidating. Even as I watch a television show about a man who overcame his seizures through music, he and I become friends, united by our common struggle.

My seizures also draw me towards those historical figures who have battled epilepsy. In The Idiot, Dostoevsky, through Prince Myshkin, is proof of the greatness that can come through epilepsy. Caesar's triumphs show that seizures can conquer Gaul. And Edgar Allan Poe's telltale heart beats unencumbered by this disorder. Though it has been a challenge to my passions, epilepsy has also strengthened me and made me more determined to pursue my goals.

MRI's, electroencephalograms, lamotrigine, oxcarbazepine, and countless doctors' appointments later, I remain encouraged to take control of my epilepsy. As I get back on my feet after a seizure, I return calmly to a class or to a mock trial tournament, encouraged by my recovery. Though not quite akin to founding an empire, rejoining my classmates and teammates is my personal victory. I am inspired by those who walk with me and those who walked before me. Though I obviously have not enjoyed my experience with epilepsy, what does it matter that this is an extraordinary disorder if, through my seizures, I can find harmony and reach the fullest potential of my life?
by Robin Dunn Fixell

Twenty-eight-year-old Lindsey Fraser’s biography reads like a chess game played with few pieces left, but also with an inordinate amount of drive and determination to win against all odds. Lindsey had her first seizure at the age of three and, throughout the years, her simple partial seizures escalated until the clusters of seizures totaled 100 to 200 per day. She’s spent the last 25 years trying every drug imaginable—ultimately to no avail.

Despite frequent hospitalizations, Lindsey did well in high school. She said that getting through school and having epilepsy actually made her “more stubborn” and “more outgoing.” It’s no wonder Lindsey received the Volunteer of the Year Award for her work at Camp EAGR (run by the Epilepsy Association of Greater Rochester), where she attended for 14 years—first as a camper and then as a counselor.

Unfortunately, her epilepsy made it impossible for her to continue her education. She tried for four years to complete community college, always having to withdraw for medical reasons. Two years ago, Lindsey was admitted to Strong Memorial Hospital in Rochester five times; IV’s were administered to stop the seizures.

Living all her life in Warsaw, New York, a suburb between Rochester and Buffalo, Lindsey never gave up the fight to find a cure. Recently, she gratefully acknowledged the help given her by her loving family—mother, Teri, dad, Don, brothers Jason, 33, Christopher, 29, and Ian, 26—and a supportive network of friends, classmates and medical professionals. But, ultimately, it has been Lindsey’s fight alone.

It felt like life was coming to a stand-still. A neurologist and close friend of the Frasers advised them to seek the help of a neurologist at NYU Comprehensive Epilepsy Center—Dr. Ruben Kuzniecky. On April 28, Lindsey was admitted for long-term monitoring at the hospital. After one more attempt to quell her seizures with another drug, Lindsey experienced memory loss, disorientation and blood clots in her leg. But Dr. Kuzniecky believed that, based on Lindsey’s EEG’s and scans, she was a candidate for surgery to remove the focal point of her seizures.

Three weeks later, Lindsey returned home to recover—only to have another bout of blood clots. But the tide was about to turn. When Teri’s cell phone rang, it was Dr. Kuzniecky offering a surgery date with a highly regarded neurosurgeon, Dr. Werner Doyle—and the chance to change the course of events forever.

“I was anxious,” says Lindsey. “I just wanted to get it done.” The first of three surgeries in eight days began on June 17th when a grid, probes and strips were inserted; Lindsey endured excruciating post-surgical pain. On June 22nd, the focal point of the seizures was removed (it was found that she had been having generalized seizures, as well). Despite the incredible pain Lindsay again experienced, she was seizure-free! On June 24th, she had her final surgery to remove all the monitoring and mapping devices.

Despite the fact that Lindsey still has a lot of healing to do, she has been assured by her doctors that the seizures are gone forever! “We couldn’t have done it without all the staff at Dr. K’s office and Dr. Doyle’s and the people in New York have been astounding!” said Teri.

“Don’t give up if something is not right.... If you need to do something else, then do it.”

In addition to being grateful to the NYU medical staff, Teri spoke about the many caring, giving people who helped the Fraser family shoulder the financial burden of traveling to pursue medical options away from home. Barbecues, bake sales and a golf tournament helped with expenses; an internet site brought in donations from as far away as Hawaii and Great Britain.

And none of this kindness has been lost on Lindsey, who is so thankful to finally get the chance to live life as an independent woman ready to resume her studies and pursue a career (possibly in the health field). Her advice to others confronted with seemingly insurmountable obstacles? “I think that people should go with their gut,” said Lindsey. “Don’t give up if something is not right.... If you need to do something else, then do it.”

“Everyone says it’s a change of life for Lindsey,” added Teri, “but what outsiders don’t understand—it’s a whole new life for the whole family.” Mother and daughter have a lot to look forward to—like shopping at Ikea when Lindsey finds her own apartment.
SUMMER FUN
by Linda Azarian

We all look forward to summer with its long days, sunny weather, outdoor activities and relaxed frame of mind. faces prepares for the summer season months in advance by putting into motion the annual Lemonade Challenge and awarding scholarships on behalf of the Dr. Blanca Vazquez Summer Camp Scholarship Fund.

Both programs are wonderfully intertwined as the sales that the children make by selling lemonade go directly to the Fund. Our lemonade entrepreneurs help make it possible for us to offer a fun camp experience to many and, this year, 37 children had a chance to go to a specialized camp of their choice.

Like last year, the Lemonade Challenge was a family affair. Brielle Chavez, was helped by her mom and sister and sold cupcakes and ice tea along with the delicious lemonade she made. Brother and sister, Andrew and Kate Lawrence, stacked the decks for a great sale by having homemade cookies, muffins with two kinds of lemonade to offer. They were both wonderful representatives for faces as brochures about the organization were placed on their stand for customers to take.

One interesting note about Benjamin and Lewis Woloch’s lemonade sale was that several people came up to them and shared that either they or their loved ones had epilepsy and offered their appreciation for what they were doing. Theirs too was a family affair with cousin Mara helping out along with friends Harrison and Avery. They strategically planned their sale on the same day as the “Brooklyn Flea” so they would get more customers, and even used their toy cash register to collect the money. Benjamin and Lewis cleverly offered their customers “fresh mint” with their lemonade for an extra 5 cents!

As Brielle, Andrew, Kate, Benjamin and Lewis were selling lemonade, some other faces friends were involved with activities of their own. Abigail Orrin enjoyed a week of camp, which offered song day, field day and even a pajama party night. For Sean Liam Quirk, the highlight of his camp experience was a group talent show that had everyone singing but, as Sean writes, “I can’t sing but I can sure dance to the music”. Sean and his new friends decided to have a reunion this December and put on a Christmas show.

And Michelle Gonzalez won’t forget her camp experience because she tackled one of her fears, rock climbing. Bowling was also a new experience for Michelle and a trip to the zoo now has her thinking that “I could become an animal doctor one day.” Michelle is especially proud of learning how to become more independent at camp and, as she says, “If it was not for your sponsoring I would have not been able to have fun as well as learn responsibilities.”
GAME DAY
Saturday, September 25, 2010
WHAT DO YOU LIKE BEST ABOUT GAME DAY?
by Cathie Golden

Over 400 people joined in the fun at Chelsea Piers on Saturday, September 25, for another wonderful Game Day event. The afternoon was packed full of fun with face painting, carnival games, remote control racing cars, gymnastics, a clown show, and prizes for all.

Some children and their families have been enjoying Game Day for years and others for the first time. While each child has a favorite game that they enjoy the most, the day seems to have an overarching purpose of being the one day that they can be themselves and not be confronted with the stigma that so many children with epilepsy experience.

One mother happily wrote to the faces office: “This was our first time attending Game Day at Chelsea Piers. We want to thank everyone who helped make this day possible. Our daughter had a great time and it was so nice to see all the children participate. We go to so many activities that I worry if can she do everything . . . there were no worries that day for any of the families.”

Another mom told me that her son went to bed early the night before so he could be on time and ready for the day’s festivities. Justin confirmed his mom’s statement and added that he “loves swinging on the ropes and all the good snacks.” And compliments from the kids did not stop there . . . Sam liked “being good at rock climbing,” A.J. “loves the clowns and playing baseball,” and Nancy said that she looks forward every year to “the lollipop game and winning toys”.

Join us next year and find out what Game Day will mean to you!
by Ruben Kuzniecky, MD
interviewed by Linda Azarian

Our own Dr. Ruben Kuzniecky recently took a special trip and helped make remarkable things happen in the country of Panama. With the sponsorship of the office of Panama’s First Lady, he worked with the Children’s Hospital and Ministry of Health to develop a program that focused on bringing together local neurologists and neurosurgeons with a number of specialists from abroad to organize the first epilepsy surgery program in Panama at the Children’s Hospital of Panama City.

Dr. Kuzniecky has been traveling to Panama for many years where, informally, he has helped set up a basic epilepsy clinic and EEG laboratory. Last year, with the help of two physicians from Argentina who came to Panama, they performed the first epilepsy surgery ever conducted in the country. With the many trips made there, he has seen Panama’s infrastructure up close and worked within the system enough to know exactly what they need to succeed in this venture. The Children’s Hospital in Panama City is the only tertiary children’s hospital in the country and receives all of the most complicated cases throughout the region. The number of patients with seizures is particularly high in the indigenous population. Their need for epilepsy care is tremendous.

In the hospital, he met with all members of the administration, medical directors and physicians who would be involved with the program: this included the Chief of Neurosurgery as well as the Chief of Pediatric Neurology. But, as Dr. Kuzniecky writes: “the most interesting and important part of my visit was to meet the families. Most of them are of humble origins. The families however do take care of their relatives in an incredible way. They all tend to stay in the hospital throughout the hospitalization and bring food and items necessary for their care. In some situations, the villagers have to travel one to two days by bus from remote areas where there is no electricity, water or telephones. This was a most vivid and sensitive experience.”

In Panama, the equipment and hospitals are modern, particularly in the private sector. The government hospitals are relatively good but as expected in third world countries, the hospitals are not well maintained and the equipment often breaks down and there are no repairs. The epilepsy clinic in Panama is a basic clinic in which physicians have access to an EEG machine. The hospital doesn’t have MRI equipment but an MRI can sometimes be obtained and done somewhere else. Most of the basic drugs are available such as Phenobarbital, Tegretol, Depakote, and Dilantin but second generation drugs are more difficult to find. Dr. Kuzniecky continues: “The biggest surprise was the commitment and enthusiasm that everyone showed towards putting together a program for epilepsy surgery in Panama. Panama is a small country of approximately 3.3 million people with at least 2 to 3 thousand patients with intractable epilepsy who may benefit from surgery. Therefore the needs are astronomical.”

“There are some differences between US attitudes and Panama’s particularly in respect to the social views on epilepsy. Here in the United States we have advanced care and issues of quality of life are handled very proactively in terms of a person’s rights, work and disability issues. Panama is a developing country where these things can often be implemented copying from the United States model but it takes time and effort. The social stigma of epilepsy in Panama still reminds me of what this country looked like 25-30 years ago. However, I am confident that with education and this program, we will be able to improve the situation very shortly.”

A question posed to Dr. Kuzniecky was if his experience in Panama influenced the way he worked at the NYU Comprehensive Epilepsy Center? In reply: “it always does and it always will in the future. Every time I go to a poor country, you realize how fortunate we are in this country to have what we have. It also changes your attitude on the practical aspects of medicine. When I say that, I mean that many times we make decisions based, for example, on legal and potential liabilities. This concern is much less important in countries such as Panama as medical issues take precedent.”

“I would like to concentrate on fully developing this program in Panama. We have requested a small grant from the government and the First Lady’s office to jumpstart the program. I think with very little we can start a basic epilepsy surgery program in Panama with the help and advice from outside experts.”
TEEN SCENE: DON’T GIVE UP

by Emma Davis

Do you ever feel like giving up? Giving up school or friends or boys or life just because the struggle is too hard. Do you ever think maybe if I just hit bottom everything will be okay because there isn’t any place to fall from there? Do you ever have such a bad day that blowing up with fury doesn’t do anything and the only thing that makes you feel better is throwing in the towel? Well, I do.

Whenever I feel that way I take to the sea; my friend, my safe, where I can lock away my pool of secrets. This past weekend I just happened to be racing and the first day I finished extremely well. The water, my blanket of support, was keeping me afloat and my head high. The second day though, I had some trouble. I was flipping over to and fro and making wrong decisions left and right. The stability under me had fallen threw and I was lost. The sea had turned on me. My secrets were overflowing over the sides leaving me alone and friendless. I was drowning and all my confident did was laugh. When I finally got back in my boat I was in dead last. And after pounding my fist into my boat a couple dozen times I continued on. I still don’t fully understand why. Both sides of my conscience said to head back to shore. The angel thought I tried my best and the devil said I was a failure but neither one told me to keep going. And even though only negative thoughts were passing through my head the entire time, I crossed the finish line. Now, in the moment I was still upset but just getting through something is an accomplishment in and of itself.

I don’t know what all of your struggles are, but I do know that epilepsy is one of them. I’m not exactly sure when my epileptic struggles started and I’m not exactly sure of when they got easier to deal with. And even now during my aftermath, it’s still a struggle for me to deal with my past. But giving up is not an option for me.

Despite the struggle and despondence of the second day, it turns out that I placed first among all women. See that’s the funny thing about life, it rewards you when you least expect it. Now I can’t promise that your struggle will just magically get easier and I can’t promise that what works for me will work for you but I can promise this: Fight with all your might, yes it will be hard but it will make you proud. Trust me.

Hi. My name is Emma Davis and hopefully this will be one of many columns that I write for the faces Newsletter. If you would like, email me some suggestions or send me an article of your own at facesinfo@nyumc.org. Thanks.

MY STORY

by Kate Spratt

It was a regular Monday, just like any other. I woke up and did my normal routine to get ready for work. While in the shower, I went to make the water temperature a little warmer. At that moment I ended up having a seizure and fell with my hand on the hot water faucet which turned it up all the way. I eventually woke up in pain, turned off the water but not quite sure what had happened.

Someone was coming to pick me up for work and I waited until he arrived to tell him what happened. When he came in the house, I told him I had a seizure and asked him to look at my back because the pain was so great. I was unaware that I had been burnt but once I started to realize what had happened, it became was the worst pain I ever felt in my life. He called 911 and the ambulance took me to The New York Presbyterian burn unit. I was there for 5 weeks.

I’m not sure how long I was under the hot water but almost my whole back, left arm, and my left thumb were scalded. All together, 20% of my body was scalded that day. In addition to having three surgeries and two procedures, I had months of physical therapy with a wonderful physical therapist two or three times a week, as well as everyday at home with my father, so I could gain full range of motion in my left arm and be able to bend over to tie my shoes.

This incident was the most painful experience of my life, both physically and emotionally. I have scars but, due to the fact that I did my physical therapy and listened to the directions of my surgeon and physical therapist, they aren’t very bad now. I always thought that if, God forbid, I had a seizure in the shower I would bump my head or slip and fall. I would never have imagined this. I believe that every person who has epilepsy should take preventative measures and be careful in the shower not to get burned: now, in both bathrooms in my home anti-scald showerheads have been installed. I urge everyone to take this precaution as I hope nothing like this ever happens to anyone else.
**MY JOURNEY TO MOTHERHOOD**

by Jennifer Ferrallo

“You have epilepsy; why would you want to have a baby? Your baby will probably have something wrong with it.” Unfortunately, this is what most people think when they see a woman with any sort of medical condition trying to become pregnant. I was nervous to become pregnant, especially with so many conflicting and terrifying statistics floating around the internet. But, I decided to get the facts from my doctor at the Epilepsy Center, whom I respect very much, and was very excited when I finally became pregnant.

**You have epilepsy; why would you want to have a baby?**

One month into my pregnancy, I had a miscarriage. Of course, everybody thought “it must have something to do with her condition,” but the fact of the matter is that it is very common for a first pregnancy tomiscarry. I decided to remain confident about the information that my doctor had given me and soon after became pregnant once again. And once again, people worried.

The hard thing about having any kind of medical issue (most especially when you are living with a regiment of medicines) and wanting to become pregnant is that people are too busy worrying to share your excitement. But you learn to accept that they don’t live in the same world as you do and realize they cannot fully understand your situation. So you live with the excitement within yourself and delve into all of those “everything you need to know about being a mom” books.

Now my story gets complicated. I had my first seizure during my third trimester, spent some time in the hospital and then shortly after had another one. Everyone’s worries worsened, but even after two seizures I still wasn’t scared.

Call me crazy (which many people did at the time) but I still had faith in myself. And my doctor’s confidence kept me going. My medications were increased and once again I found myself alone with the excitement of having a baby. And for a second time I immersed myself in books about motherhood and realized Barnes and Noble was becoming my new best friend. And what a great friend it was too! Food, books, and a happy attitude. . . just what I needed.

Time went by and everything was moving along without a hitch. I found it funny that most of the people who were doubting me and my pregnancy were experiencing sickness during their pregnancies and I never once fell ill. I guess those meds weren’t that bad!

Now it was time for my journey to end. I went to my OBGYN in the morning, and after whatever magic she performed that day, found myself in the hospital that very evening to have my baby. My doctor deliberately put herself on-call that night so that she could be able to deliver my baby and not be waylaid by other pregnant mothers. She also knew that my mother would be in town that night from California and with all of the “journeys” it had taken me to get to this very point, she wanted to be there to see my baby be born.

Six years later I have a healthy child. Don’t get me wrong, you still get me wrong, you still worry about your child because of your particularly hard journey, but then again every mom worries! Only then I was worrying about toilet training, not seizures.

I guess what I am trying to say is go with your gut and don’t let anybody tell you that you can’t do anything. No matter if you had a particular journey or not, you’re still a mom and you will never sleep the same or do anything the same and you will always worry.

Just remember to be strong, be confident and you will be able to handle whatever journeys come your way!

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**GOING GREEN**

Please help faces save money and trees by sending your email address to facesinfo@nyumc.org. Every newsletter we send electronically allows us to put $2 towards the research and education programs that faces supports. Every bit helps!

If you do not have an email address, don’t worry. You will still receive a copy of the newsletter in the mail and not miss any important information from faces.
COVER STORY CONTINUED:

Our goal is to determine the relative success of using this type of innovative technology for improving cognitive and behavioral outcomes in persons with TLE, which has not yet been looked at. The two programs that we selected are of the most aggressively marketed computer software packages in the market (Brain Fitness Program, Posit Science vs. Lumosity Training Program). We predict that the computerized training, which will be conducted in familiar settings for the participants (i.e., at home), will result in greater gains than a psychoeducation intervention, which includes lectures about use, and appropriate selection of, specific memory-related strategies, on memory measures and other measures of cognitive and behavioral outcome. The fact that the computer programs can be practiced at home has important implications for patients with TLE, given the restrictions on driving associated with this disorder. Participants’ ratings of the feasibility of this intervention will be of key importance to us as developing a program that is broadly available, easy-to-use, likeable, and time-efficient has been challenging to clinicians and researchers.

We plan to enroll 72 persons with TLE over a one-year period at NYU Langone Medical Center, CEC. Participants will be randomly assigned to complete the computer training (with or without the psychoeducation component), the psychoeducation component alone, or a wait-list group. Those people in the computer training group will have to practice the computer programs at home (one hour per day, five days per week, for eight weeks). All of the information sessions will be conducted in a small group format at the CEC, one hour per week, for 8 weeks. Those people who were not assigned to the computer training group will be provided the opportunity to participate in this training program immediately after completing their final testing session. Everyone will complete a battery of neuropsychological tests at the start and end of the training program. Whether or not the different training programs have an effect on memory and other cognitive skills will be determined based on objective scores on a variety of measures, including the Repeatable Battery for the Assessment of Neurocognitive Status (RBANS). Written informed consent will be obtained from all participants prior to enrolling in the study.

All course materials and the computer programs will be provided at no cost to participants. It is our hope that this new training program can be used to improve cognition in a variety of ways and therefore lead to substantial gains in the everyday lives of individuals living with epilepsy.

For more information regarding this new memory program, please contact Dr. Stella Karantzoulis at 646-558-0950.

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Product Type and Target Age</th>
<th>Brain Function</th>
<th>Clinical Validation</th>
<th>Price</th>
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<tr>
<td>Brain Fitness Program Classic, Posit Science</td>
<td>Software program, for adults</td>
<td>Auditory processing</td>
<td>Medium</td>
<td>$395.</td>
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<td>Cogmed JM (children 4-7), RM (ages 7-20) Cogned</td>
<td>Software program, for children and adolescents</td>
<td>Working memory</td>
<td>Medium</td>
<td>Around $1,500 (program cost + supervision by a certified clinician).</td>
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<td>DriveFit (Golden), CogniFit</td>
<td>Software program, for older drivers</td>
<td>Assessment and training of variety of driving-related brain functions</td>
<td>Low</td>
<td>$99.</td>
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<tr>
<td>Fast Forward, Scientific Learning</td>
<td>Family of software-based products, for children</td>
<td>Auditory processing and language-related areas.</td>
<td>Medium</td>
<td>Around $800.</td>
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<td>InSight with Cortex, Posit Science</td>
<td>Software program, for adults</td>
<td>Visual processing</td>
<td>Low-Medium</td>
<td>$395.</td>
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<td>Vision Restoration Therapy, NovaVision</td>
<td>Software program, for rehabilitation clinics</td>
<td>Vision-related</td>
<td>Medium – High</td>
<td>Several thousand dollars, depending on clinical provider.</td>
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<td>Happyneuron.com Scientific Brain Training</td>
<td>Online, for adults</td>
<td>Variety</td>
<td>Low</td>
<td>5 free games. Subscription costs $9.95/ month, or $99.95/year.</td>
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<td>Variety</td>
<td>Low</td>
<td>One-week free trial. $9.95/ month, or $79.95/ year afterwards.</td>
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<td>$149.</td>
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SAVE THE DATES!

faces Gala
March 8, 2011

faces Epilepsy Conference
Spring 2011

DO YOUR PART and join the facesForward campaign to fight epilepsy.

In January, we will launch our second annual facesForward campaign to help raise funds for faces’ research and community projects. This campaign is a compliment to the 2011 Gala, which is the largest fundraiser that faces holds each year.

How does facesForward work? It’s a friends-asking-friends campaign, where you can make your own contribution, as well as email it forward to the people you know. It’s a wonderful way to promote awareness for the work we do. Please be sure we have your current email address on record and join the community of friends who are helping to support faces.