# SPRING 2013 TBINE SPRING 2013 A PUBLICATION OF THE NORTHERN NEW JERSEY TRAUMATIC BRAIN INJURY SYSTEM

# Personal Perspective: The True Value of Optimism



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Vijaya Arjunan knew something was not right when her husband Mallik never called to say he had reached his hotel room in California on the night of April 2, 2001. But she did not know just how much both their lives were about to change.

When she finally did receive a call, Mallik had already been rushed to the Intensive Care Unit at Stanford University Medical Center. Mallik had been in a near-fatal car accident, caused by a driver who ran a red light. He had a severe head injury and numerous broken bones on his left side. Vijaya immediately booked herself and her two teenage daughters on the next flight across the country, to stay by his bedside daily until he emerged from his coma three weeks later.

During the following months of recovery, Mallik slowly relearned how to walk and talk. Vijaya fondly remembers one notable achievement—the day he was able to get himself out of bed again. After 3 months in the hospital, both Vijaya and Mallik knew they would be returning home to many changes. These not only included the temporary ramp out front for wheelchair access, but also the ending of Mallik's career, a role reversal in their marriage, and a muted social life.

However, having to retire at the age of 55 could be considered a blessing for the Arjunans. With lasting cognitive difficulties and decreased mobility and independence, Mallik stays home and takes care of the dishes, laundry, and other household chores, while Vijaya continues to work. Though they decided that Mallik would not drive again, he does not miss it. They keep each other company every evening. Together they go to the gym, walk at the town lake, cook healthful meals, watch movies, and shop on the weekends. "It's a simpler life, but a healthier lifestyle. We're just so grateful that we're all here," Vijaya exclaimed. Instead of seeing him sparingly between business trips, their daughters, now ages 25 and 29, had the opportunity to develop a special bond with their father.

#### (Continued from previous page)

The stronger and more close-knit family dynamic was, of course, accompanied by many challenging adjustments. The personality changes that occur after a traumatic brain injury can certainly take a toll on a marriage. Whereas Mallik expressed that his greatest concern was no longer contributing to the family finances, Vijaya said it was hardest to

deal with his emotional instability, confusion, and lack of inhibition in social settings. Both she and their daughters have had to remind him repeatedly to control his volatile temper. This lack of control has led to them becoming somewhat isolated from

No matter what you do, just always do your best.

their former social circles. "But at least we now know who we can rely on, and we appreciate their support much more," he said. Mallik also gets tired more easily and his physical disabilities make it difficult for them to engage in travel and other activities they had anticipated enjoying in the coming years.

Vijaya and Mallik find great strength from their faith and their sense of family, which helps them take care of one another. Participating in research studies

at Kessler Foundation was a way of giving back.

In general, the experience has increased their understanding for all people with disabilities. "As a society, we just need to accept that people may differ in their abilities," Vijaya remarked. The couple has also learned to accept each other's shortcomings and respond with compassion. "The key is to never let the

> little arguments mean much," she explained.

While it takes continuous effort and patience on both their parts, Mallik maintains a positive outlook. The first thing he says when on the phone with close relatives is, "I'm riding the bike one hour a day; I'm going to the gym;

I'm slowly getting better." His fatherly advice to his daughters, continues to be his personal motto: "No matter what you do, just always do your best."

He may not be able to do certain things anymore, but as Vijaya says, they have "created a little world for ourselves at home" and have found contentment in that. Individuals with brain injuries and their caregivers may agree that it takes a struggle like theirs to learn the true value of optimism.



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### ASK THE EXPERT: An Interview with Peter Yonclas, MD, Trauma Specialist

Specialists in trauma rehabilitation, such as Peter Yonclas, MD, care for people with all types of brain injury, from mild concussion to coma. Dr. Yonclas answers questions about concussions, causes of brain injury, unexpected recoveries, and areas of research.

#### Q: What work do you do with patients who have sustained TBI?

A: As director of Trauma Rehabilitation at a level one trauma center, I assist with the care of all trauma patients who are admitted with brain injury. Some have mild head injuries, like concussions; others have more severe injuries. Some may be comatose. I see patients in inpatient and outpatient settings. While they are still hospitalized, I assist with their initial rehabilitation, and I provide rehabilitative care for individuals who do not qualify for inpatient rehabilitation.

#### Q: What interested you in this career path?

A: First, I was fascinated by the unexplored potential for recovery after brain injury. The wide spectrum of injuries encountered when caring for these patients was challenging. It is a field that really piqued my intellectual curiosity. As a relatively new field, brain injury rehabilitation–and our understanding of it–are still evolving and I wanted to be part of that journey.

#### Q: Have you noticed any trends in the causes of TBI?

A: I have noticed an increase in the number of elderly patients who are sustaining more severe injuries secondary to falls. In years past, these falls would have resulted in less serious injuries. I believe this trend is due in part to the dramatic increase in the use of blood-thinning agents, including aspirin, Pradaxa, and Coumadin in this population, as well as the fact that people are living longer. It's my experience that clinicians are now more aware of brain injuries and more likely to recognize the signs and symptoms of concussion. This means more patients are undergoing treatment and rehabilitation.

## Q: Following a blow to the head, does altered consciousness or loss of consciousness always indicate brain damage?

A: No, the loss of consciousness in and of itself does not necessarily indicate underlying structural damage. Altered consciousness or loss of consciousness means that there has been a disruption in how the brain transmits signals and processes information. In mild cases, such as a concussion, after a period of time, the brain restores its normal physiologic balance and function and these disruptions usually resolve.

## Q: Can another concussion during that period cause more damage? Is that why players are advised against going back too soon after a mild concussion on the field?

A: Yes, another concussion during the vulnerable period after a first concussion may have significant consequences. It is very likely that a second concussion will increase the duration of symptoms and prolong recovery. Although rare, second impact syndrome, in which a second concussion causes sudden disruption in brain activity, may cause swelling in the brain, and potentially, death.

#### Q: Have you cared for any patients whose recoveries exceeded your expectations?

A: Two patients are unforgettable because of both their amazing recoveries and the unique circumstances of their injuries. Both were women who eventually underwent rehabilitation at Kessler Institute in West Orange. Interestingly, both had associated conditions that are being studied for their impact on acute survival and outcome. The first was a pregnant woman who had to have an emergency delivery after a terrible car accident; the second was a college student who had crashed into water and had prolonged cold exposure to the point of core hypothermia. Both were in prolonged comas, but had excellent outcomes and achieved near pre-injury functioning. This was possibly due to the influence of hormones (in particular progesterone and estrogen) and hypothermia, respectively.



photo: Andrew Hanenberg **Peter Yonclas, MD**, Assistant Professor at the University of Medicine and Dentistry of New Jersey – New Jersey Medical School, and one of the dedicated physicians serving the Northern New Jersey Traumatic Brain Injury System.

## RESOURCE Refresh: TRAVEL SERVICES FOR INDIVIDUALS WITH SPECIAL NEEDS

#### Agency Also Offers Built-in Fundraising Opportunities for Non-Profit Groups

Tom M., a 94-year-old man who uses a wheelchair, wished to accompany his wife on a special cruise. Sara G. is a 72-year-old widow requiring constant oxygen therapy who wanted to join her friends on a group cruise sponsored by their senior residence. Harvey F., 63, requires dialysis treatments, but intended to join family members on a tour of Europe. Mary S., a 48-year-old marketing executive, wife and mother of three, sustained a brain injury in an auto accident, but joined her family on a trek to Alaska.

Each symbolizes a conundrum for modern medicine: while individuals may survive an injury or illness, many are left with physical limitations that inhibit other aspects of their lives, from career to family. One such concern may revolve around the feasibility of travel for business or pleasure.

"Increasingly, we serve individuals with special needs who are pushing perceived norms," said Linda Cutrupi, president of Mainly Meetings Travel LLP. "In the past, relatively minor conditions may have made travel just too complicated. Now the effects of illness, injury, or advanced age very often can be overcome with diligent planning and proper resources." She noted that the agency is setting up a separate unit, Mainly Special Needs Travel, to focus exclusively on the needs of people with such conditions.

The Englewood Cliffs, N.J.- based travel agent noted that many more affordable resources are available today to travelers with special needs than ever before. She expects that additional resources will become available as the travel industry recognizes that travelers with disabilities are an important and growing market.

"Our 94-year-old gentleman is a good case in point," Ms. Cutrupi explained. "He required a medical attendant from our ally firm, Interim Healthcare, an ambulette service between home and port, a Hoyer Lift® so he could be moved to and from his hospital bed (also obtained through MMT), and a wheelchair. He had special dietary needs and needed comprehensive travelers insurance. I'm not saying that the cost was the same as a typical couple taking a cruise to Bermuda, but the total was very reasonable in the context of what was involved."

"We do emphasize to our clients that they get appropriate travel insurance ... beyond just trip cancellation coverage. For example, we strongly recommend purchasing health insurance. This is important especially among our senior clients as Medicare coverage does not extend beyond the US and its overseas possessions," she noted. "Along that vein, we recommend coverage that includes air-evacuation back to the US, if necessary. Clients obviously have the right to decline such coverage,



but if they do, they must sign a waiver showing that they had been advised of insurance availability."

She stressed that health concerns go beyond insurance coverage: "For those with active health needs, such as kidney dialysis treatments, we are proactive in finding clinics or hospitals where they can be served. My business partner likes to mention the tour movie from the sixties, *If It's Tuesday, It Must Be Belgium*, to point out that if a traveler requires dialysis and will be in Belgium on a Tuesday, we can arrange for a center where he or she can be treated. That applies to Copenhagen on Thursday, Berlin on Saturday, and other destinations as well."

Ms. Cutrupi focused on their agency's ongoing contact with airlines, cruise lines, hotels, and other providers to ensure that the special needs of individuals or groups are addressed properly. "Let's face it, particularly with special needs clients, they do not have the information base, time, or contacts that we offer," she noted. "We carefully (Continued from previous page)



question hotels, for example, that claim accessible accommodations. If they don't readily have what our clients need, we work with them on what changes must be made, such as adjusting the height of a bed or removing obstacles for the wheelchair user."

"The bottom line is that they are in business. Mainly Meetings Travel is bringing customers to them, and they know it. Ultimately, they will accommodate our client's reasonable needs or there is no sale," she said.

Mainly Meetings Travel works closely with not-forprofit organizations, including Kessler Foundation, Adler Aphasia Center in Maywood, and the Helen Haves Hospital Foundation in Rockland County, as well as senior housing facilities, houses of worship, health-related groups, service clubs, and others.

In these cases, the travel agency is not only the "service provider" for the participant members, their families, and friends, but offers vital fundraising opportunities. Mainly Meetings Travel donates 10 percent of the net commissions the firm earns on transactions. The agency also negotiates favorable rates with cruise lines for example, so organizations can derive additional returns from fares or fees. As part of this effort, the travel agency also helps groups gain additional amenities on cruises. These may include exclusive receptions, "demonstration luncheons" offered by ship chefs, and special credits toward purchases onboard ship.

Thus, individual or group travelers can find highlevel services, tailored services for those with special needs, and ultimately, financial support for nonprofit organizations that offer important services to individuals, families and the entire community.

Contact: Linda Cutrupi

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Need an email reminder about this important event for people with TBI? Email us at info@KesslerFoundation.org and we'll add you to our list!

## Nurses' Corner: Diabetes Management for Patients & Caregivers

Michael Sommers RN, CRRN, and Bonnie Tillman, RN, CRRN



Returning home and starting a new life after being discharged from rehabilitation poses many new challenges for patients and their loved ones. A new caregiver must learn many new and complicated tasks to successfully care for a loved one with traumatic

Bonnie Tillman, RN, CRRN Kessler Institute for Rehabilitation

brain injury (TBI). Dealing with diabetes, whether newly diagnosed or a long-standing condition, can be overwhelming and complicated, especially in patients with TBI. Our goal is to arm caregivers, many of whom have little or no medical background, with enough information, training, and handson experience to help their loved ones meet the challenges of living with diabetes.

Education should begin early during rehabilitation. The first step is to identify the educational needs and learning styles of all persons involved, starting with the individual who has diabetes. The next step is to assess the knowledge and comfort level of patient and caregiver and identify family or friends who can act as support and back up. Part of the assessment is to identify the most effective style for communicating with a given caregiver/patient. A mixed approach, using verbal, written, and hands-on demonstration, touches on each style and has the most impact. Repetition is one of the most effective tools in building confidence and independence.

Training should be tailored to avoid overwhelming the family members, who will be trying to manage new roles and a multitude of information. During this process, it is important to reassess needs periodically and adjust our strategies as needed to ensure that both the patient and caregiver are equipped with the knowledge they need to manage the disease. Supplemental patient education materials in different languages and formats are widely available online from the American Diabetes Association (www.diabetes.org; 1-800-DIABETES).

Including the caregiver as a part of the nursing routine reinforces the educational process. When you draw blood, for example, explain what you are testing for. For patients needing insulin, explain the sites for injection and discuss blood glucose readings that are normal, low, and high. As early as possible, have the caregiver start performing the checks if a glucometer will be used. If blood sugar monitoring will be part of the home plan, have caregivers bring in supplies and start using their own so you can observe how proficient they are, reinforce good technique, and address questions and problems. Before discharge, caregivers should be able to perform the needed tasks without prompting and be able to verbalize warning signs of complications and appropriate follow up.

Despite good management, complications may arise. Knowledge of hypoglycemia and hyperglycemia, and what do when symptoms occur, are essential teaching points. Create a list of the signs and symptoms and review them with the patient and caregiver upon discharge.

Ensuring that the patient and caregiver are confident with day-to-day management of diabetes is vital to success at home. Making successful use of the tools provided, gathering support where needed, identifying useful resources, such as the American Diabetes Association, to help with learning, and making sure goals are met are essential to optimal recovery for patients and caregivers dealing with the challenges of diabetes and TBI.



## **MEET THE STAFF**



Meet **Miguel Coba, MD**, staff physiatrist at Kessler Institute for Rehabilitation's West Orange Campus. Joining the team in 2012, he is a recent addition to Kessler Institute.

A native of New Jersey, Dr. Coba attended Montclair State University where he majored in Biology and minored in Chemistry and Physics. After graduating in 2002, he attended New Jersey Medical School

(NJMS) of the University of Dentistry and Medicine of New Jersey (UMDNJ) in Newark, NJ. Staying true to his New Jersey roots, Dr. Coba completed residencies in internal medicine at Morristown Memorial Hospital and in physical medicine and rehabilitation (PM&R) as part of the NJMS-Kessler Institute residency program.

Believing that spinal cord injury (SCI) and traumatic brain injury (TBI) medicine are "two sides of the same coin," Dr. Coba aimed to provide the best care for individuals with these lifechanging injuries. "A very specific knowledge set is required to manage patients as they encounter problems specific to their neurologic impairment," said Dr. Coba. Therefore, he completed fellowships in both SCI and TBI medicine, which uniquely qualifies him to care for patients who need neurorehabilitation.

Dr. Coba is board-certified in SCI medicine. He did his fellowship with Steven Kirshblum, MD, director of SCI Services at Kessler Institute. As a fellow, he worked on a SCI patient education video with Trevor Dyson-Hudson, MD, director of SCI Research at Kessler Foundation. The video was funded by the Craig Nielsen Foundation. He completed a second fellowship in TBI medicine under the leadership of Neil Jasey, MD, director of TBI Services at Kessler Institute.

One of three physicians specializing in TBI rehabilitation at the West Orange campus, Dr. Coba focuses on the care of individuals with brain injuries, and also treats patients with other diagnoses, including SCI and stroke. In addition, he works with these patient populations on an outpatient basis to ensure their continued progress as they transition to home.

In the spasticity clinic he co-manages with Dr. Neil Jasey, Dr. Coba treats patients with TBI, SCI, and multiple sclerosis. "Working with outpatients is challenging, but also very rewarding," he declared. "It's gratifying to help them achieve and maintain their optimal level of independence and function." With the passion and experience Dr. Coba brings to Kessler, it is clear that our patients are in very good hands. Meet Silvio Lavrador, BA, research assistant in Neuropsychology and Neuroscience Research at Kessler Foundation. Lavrador, a graduate of Rutgers University with a degree in psychology, recruits participants for research studies with multiple sclerosis (MS),



administers neuropsychological examinations, and compiles behavioral and neuroimaging data.

While at Kessler, Lavrador has worked on several different projects that look at ways to help people recover after TBI. "Some people do better than others during rehabilitation," Lavrador observed. "We study the factors that may contribute to their success. That knowledge may help others." Other studies focus on preventing cognitive decline, improving memory, and addressing sleep problems, common complications after TBI. Some people lose the ability to recognize emotions in others, which can adversely affect social interactions. Lavrador is currently working on a new line of research aimed at improving emotional processing and emotional recognition.

As a certified Form I data collector, Lavrador gathers key data for the Northern New Jersey Traumatic Brain Injury System (NNJTBIS), a collaborative effort of Kessler Foundation, Kessler Institute, UMDNJ-NJMS. These data go into a national database, the National TBI Statistical Center, to help researchers throughout the nation improve the lives of people with brain injury. Many kinds of data are collected, including information on rehabilitation admissions, progress during treatment, clinical outcomes and long-term recovery. Locating data in the medical records is challenging work, according to Mr. Lavrador. "It involves understanding different aspects of acute trauma and rehabilitative care and interpreting health charts, physician notes, rehabilitation records, neuropsychological test scores, and clinical impressions." Lavrador's prior experience is helpful. At UMDNJ and the East Orange VA Hospital, he assisted with research on the impact of post-traumatic stress disorder on the brain function and behavior of combat veterans.

Inspired by his work at Kessler Foundation, Lavrador intends to pursue a career in neuropsychology. "I am interested in how TBI and neurodegenerative diseases affect memory and learning. A better understanding will help me develop interventions to overcome these deficits," he explained. "My professional aim as a future clinician or a researcher will always be to help improve the lives of people with cognitive disabilities."

## **RESEARCHERS ON THE MOVE...** Orlando, Vancouver, New Orleans, Washington, D.C., and Abroad

Kessler Foundation researchers are busy ensuring that research findings are communicated to the larger scientific community, both nationally and internationally, to improve the standard of care for people with TBI. At recent scientific meetings, they discussed the impact of TBI on behavior, learning, and fatigue, and how income affects rehabilitation outcomes. Their article on disability in India received attention worldwide.



#### American Psychological Association, Orlando, Florida

Neuropsychologist **Anthony Lequerica, PhD,** and his colleagues in TBI shared their

findings that individuals with higher income at the time of brain injury tended to progress faster through their inpatient rehabilitation; all of the individuals in this group studied went to the same facility where they received the same quality of treatment. This raises questions about how higher income before injury might be affecting recovery. Perhaps people with higher income have better access to health care so that they are healthier at the time of injury and can recover more easily. This is an area researchers need to explore more thoroughly.

Lawanda Ford-Johnson, PsyD, a

post-doctoral fellow, and colleagues gave a presentation about how TBI affects behavior and thought processes.



#### American Congress of Rehabilitation Medicine, Vancouver, Canada

Dr. Lequerica and colleagues from other TBI Model Systems Centers presented their research on how useful a particular questionnaire could be in measuring fatigue after TBI. These scientists found that the questionnaire was effective and also explored ways to make it more accurate. Detecting fatigue and measuring its impact is an important step toward developing new treatments.

### Society for Neuroscience, New Orleans,



Louisiana

For years, scientists have known that fatigue complicates recovery from TBI. **Glenn Wylie, DPhil,** assistant director for Neuroscience Research, presented his findings on cognitive fatigue. Dr. Wylie uses neuroimaging to observe brain activity during cognitive fatigue and see which brain areas are associated with fatigue. Identifying which areas in the brain are associated with fatigue will help researchers develop ways to treat it.

#### Starla Weaver, PhD, presented

her research on chronic cognitive deficits that are a major cause of disability after TBI. Her research focuses on ways to improve ability to organize thoughts and activities, prioritize tasks, manage



time efficiently, and make decisions. Dr. Weaver is a Mitchell Rosenthal Memorial Fellow in TBI Research.

#### **Global Perspective**

Abhijit Das, MD, Amanda Botticello, PhD, MPH, Glenn Wylie, DPhil, and Kurupath Radhakrishnan, MD, DM, predicted an epidemic of hidden disabilities in India caused by traumatic brain injury, stroke, and dementia.

Their commentary, published in the journal, *Neurology*, focused international attention on public health and disability in India. The authors identified four areas where urgent action can help stem this epidemic—enforcement of traffic safety measures to reduce TBI, development of accurate statistics, training of more professionals in neurorehabilitative care, and expanded research in neurorehabilitation.



## In the News: Nancy Chiaravalloti, PhD, Brian Yao, PhD, John O'Neill, PhD

#### Nancy Chiaravalloti, PhD: "Women Inspiring Innovation Through Imagination"



Nancy Chiaravalloti, PhD, pictured with Hudson County Executive Thomas A. DeGise

Nancy Chiaravalloti, PhD, was among the 'Women Inspiring Innovation Through Imagination' named by the Hudson County Board of Chosen Freeholders for 2013 Women's History Month. This year's honorees were chosen for their contributions in Science, Technology, Engineering, and Mathematics. Dr. Chiaravalloti, a resident of Hudson County, is project director of the Northern New Jersey TBI System. She is also director of Neuropsychology & Neuroscience and TBI Research at Kessler Foundation, and associate professor of Physical Medicine & Rehabilitation at UMDNJ-New Jersey Medical School.

#### Foundation opens new Center for Neuroimaging Research

The opening of the Neuroimaging Center at Kessler Foundation this spring expands the capabilities for conducting neuroscience research. "Having a powerful, state-of-the-art scanner dedicated to clinical research sets Kessler Foundation apart from other free-standing research facilities," noted Rodger DeRose, president and CEO of Kessler Foundation. "We anticipate expanding our collaborations and accelerating the pace of our research in stroke, multiple sclerosis, and spinal cord injury, as well as brain injury." Physicist **Brian Yao, PhD** (pictured with scanner), is the manager for the new Center. Glenn Wylie, DPhil, is the Center's associate director; John DeLuca, PhD, serves as director.



#### John O'Neill, PhD: Trends in Disability Employment — National Update



New data indicate that people with disabilities are more engaged in the labor force, according to the March *Trends in Disability Employment – National Update* (TIDE Update), a new monthly analysis issued by Kessler Foundation and the Institute on Disability at the University of New Hampshire. Tracking employment data for people with disabilities provides important information for researchers, government agencies, and the disability community, said **John O'Neill, PhD**, Kessler Foundation's Director of Employment and Disability Research. Dr. O'Neill, who joined the Foundation in 2011, conducts research aimed at finding ways to overcome obstacles to employment.

## In Washington, D.C...

#### Nancy Chiaravalloti, PhD, joins experts at Walter Reed

You may be familiar with virtual reality, the basis for many of today's popular video games. Did you know that scientists are looking at ways to use virtual reality in rehabilitation? Nancy Chiaravalloti, PhD, of Kessler Foundation spoke at the State of the Science Symposium at Walter Reed National Military Medical Center in Bethesda, Maryland in November 2012. Dr. Chiaravalloti was among the scientists who shared their findings at the symposium, "Virtual Reality and Its Role in Wounded Warrior & Veteran Care." Dr. Chiaravalloti, an expert in cognitive rehabilitation research, spoke on the topic, "Virtual Reality for Neuropsychology." Kessler



Foundation collaborates with the University of Southern California in exploring applications for virtual reality that will improve rehabilitation for individuals with brain injury and other disabling conditions.



#### Brain Injury Awareness Day on Capitol Hill

On March 13, Brain Injury Awareness Day, Kessler clinicians and scientists networked with colleagues in the field, as well as with legislators and advocacy representatives. Brain injury specialists from Kessler Institute for Rehabilitation raised awareness of the importance of medical rehabilitation for maximal recovery after TBI and the scope of services available to survivors and their families.

On Capitol Hill were Dr. Neil Jasey, Director of Brain Injury Rehabilitation and Medical Director to the NNJTBIS, Irene Ward, PT, DPT, Brain Injury Clinical Research Coordinator; Monique Tremaine, PhD, Director of Psychology & Neuropsychology, and Sam Bayoumy, PT, Director of Rehabilitation.



Drs. Karen Nolan, a gait expert, and Anthony Lequerica, PhD, a neuropsychologist, staffed the Foundation's exhibit,

detailing advances in cognitive and mobility research and the impact of Kessler Foundation's funding for programs that expand disability employment. Both are research scientists at Kessler Foundation and the NNJTBIS.

Kessler Foundation's TBI Research examines the social and cognitive—thinking, learning, and memory problems that result from brain injury. "We are interested in more than recovery; we want to get people back to school and back to work as productive members of their communities," declared Nancy Chiaravalloti, PhD. Toward this goal, Kessler Foundation also distributes grant funding to organizations that create or expand employment opportunities for people with disabilities. "A number of the programs we fund focus specifically on individuals with brain injury, including veterans," said Elaine Katz, VP of Grants and Special Initiatives.

Kessler Foundation also supports proactive measures to prevent brain injury. For more than two decades, the Foundation has sponsored the NJ chapter of ThinkFirst—a national injury prevention program that teaches students how to avoid serious injuries and disability. In the 21 years that Kessler Foundation has sponsored ThinkFirst in NJ, more than 300,000 students have learned the dangers of engaging in risky behaviors.

## **DID YOU KNOW:**

Your brain benefits from staying active!

Our memory experts recommend exercising your brain with games like this

**New Hot Topic Module:** Relationships after Traumatic Brain Injury!

This **Hot Topic** series helps individuals with traumatic brain injury and their partners enjoy meaningful and fulfilling relationships. It includes videos featuring a married couple, Hugh and Rosemary Rawlins. The Rawlins share how they worked with TBI Model System researchers to address challenges they faced after Hugh experienced a TBI.

Access the Hot Topics Module at http://www.msktc. org/tbi/Hot-Topics/ Relationships.



Hot Topics is brought to you by the Model Systems Knowledge Translation Center.

### **Brain Game: Forming Words**

This puzzle gives you four key words to work with. Each key word can be inserted in one or more of the letter groups below to unlock a new word.

### Key words:

BRAIN HEAD

IDEA

MENTAL

First, add one of the key words above to the letters below in order to form a word. Then draw a line matching each word to its meaning in the right-hand column.

()IEST		(outlook)
DOUBLE(	) E R	(kind of combat)
( ) I T Y		(essential)
()LLY		(it's a snap!)
ELE()		(baseball bonus)
( ) TO (	)	(most intelligent)
N O ( ) E R		(secret retreat)
H()WAY		(in a perfect world)
Answers:		





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