

# Rehabilitation

WINTER 2010

## 2 A Matter of Necessity

The Centers for Medicare and Medicaid Services has changed the requirements for documenting medical necessity. Bruce M. Gans, M.D., discusses the ramifications and important elements of the new rules.

## 3 Brace Yourself

From arthritis to age to repetitive overuse, the knee joint can suffer debilitating dysfunction. Yekyung Kong, M.D., and Geoffrey Hill, CPO, detail the hope offered by advances in knee brace technology.

## 4 Speaking Up

Aphasia is a "hidden disability" that results in serious communication deficits. Anna Barrett, M.D., and Elizabeth Alfano, M.A., CCC-SLP, reveal the keys to diagnosis and individualized treatment that can increase patient independence.

## 6 Living Within the Rules

Bruce M. Gans, M.D., describes how the government's recent update to Medicare requirements will impact the role of the rehabilitation physician and affect documentation of all aspects of patient care.

## 8 Balancing Act

Vestibular rehabilitation may be a relative newcomer to physical medicine, but as Joseph Caccavo, P.T., explains, the field provides patients who have balance disturbances or dizziness multiple options to help quickly restore function.

## YOUTHFUL WAYS



Innovative approaches are helping to meet the unique rehabilitative challenges presented by adolescents

MONIFA BROOKS, M.D.

SERVING THE NEEDS of any rehabilitation patient requires a comprehensive, individualized care plan. Providing these services to adolescents, however, carries additional challenges because of their complex medical, physical, social, behavioral and emotional circumstances. Therefore, it is vital to understand the aspects of care unique to this group, particularly for those individuals with traumatic brain injury (TBI) or spinal cord injury (SCI).

### Keeping It Simple

Young people are most likely to need rehabilitation services as a result of violence or accidents. Teens 15 to 19 years old have the highest risk of TBI, and more than half the cases of SCI occur between the ages of 15 and 29. Injuries most often result from automobile collisions; sports-related incidents; or gunshot wounds, domestic abuse or other assault. Importantly, youths lack the fully developed cognitive skills of adults, and they can become easily overwhelmed when attempting to process too much information at once.

At Kessler Institute for Rehabilitation—where there are typically eight to 10 adolescent patients undergoing rehabilitation at any given time—staff use innovative methods to convey important points to their younger patients. This includes the use of technologies familiar to today's teens, such as videos and computer applications, and a focus on keeping the material simple without "dumbing it down." The popular Nintendo Wii, for example, can be utilized to turn potentially tedious but critical rehabilitation exercises into enjoyable, rewarding activities. In a game of virtual

tennis, patients do not need to remember to flex the wrist extensor muscles as a separate activity; the game controller guides them into doing this naturally during the session.

### Toward Independence

As with adults, the objective of rehabilitation for teens at Kessler is to maximize autonomy. Given that this is also a major aspect of adolescence itself, it becomes critical for younger patients to "buy in" to all goals. Establishing a collaborative, multidisciplinary relationship among the staff, family and patient, in which all parties can speak and be heard, is the best way to ensure that everyone understands and supports the management plan.

Making decisions is one important way for adolescents to assert *(continued on page 7)*

*Adolescents in the rehabilitation hospital tend to form strong bonds with their peers.*



FOCUS ON

## Rehabilitation

Editor-in-Chief

**Bruce M. Gans, M.D.**

Chief Medical Officer  
Kessler Institute for Rehabilitation  
bgans@kessler-rehab.com

Managing Editor

**Gail Mallor Solomon**

AVP, Corporate Communications  
Kessler Institute for Rehabilitation  
gsolomon@kessler-rehab.com

Editorial Advisers

**Uri Adler, M.D.**

Director of Stroke Rehabilitation  
Kessler Institute for Rehabilitation  
uadler@kessler-rehab.com

**Jonathan Fellus, M.D.**

Director of Brain Injury  
Rehabilitation  
Kessler Institute for Rehabilitation  
jfellus@kessler-rehab.com

**Steven Kirshblum, M.D.**

Medical Director and Director of  
Spinal Cord Injury Rehabilitation  
Kessler Institute for Rehabilitation  
skirshblum@kessler-rehab.com

**Bruce Pomeranz, M.D.**

Medical Director and Director  
of Amputee Rehabilitation  
Kessler Institute for Rehabilitation  
bpomeranz@kessler-rehab.com

Contributors

Mary E. King, Ph.D.; Emily Kuhl,  
Ph.D.; Patricia A. French

# Kessler

**INSTITUTE FOR REHABILITATION**
*a Select Medical company*

Volume 8 • Issue 4

*Focus on Rehabilitation* is published quarterly by Kessler Institute for Rehabilitation to bring current issues in rehabilitation to the attention of the members of the medical community.

Contents of this newsletter may not be reproduced without the express written consent of Kessler Institute for Rehabilitation.



## A MATTER OF NECESSITY



Recent rule changes from CMS highlight the importance of documentation of medical necessity



THE FIELD OF MEDICAL rehabilitation is in a relative “cease-fire” at the moment regarding retroactive denials over medical necessity being made by recovery audit contractors and other Medicare contractors. This presents us with an opportunity to reflect on the issue of medical necessity.

The Centers for Medicare and Medicaid Services (CMS) recently published its yearly update to the Inpatient Rehabilitation Facility (IRF) Prospective Payment System. The 2010 IRF Rule, which became

effective Oct. 1, 2009, changed the activities and documentation needed to demonstrate medical necessity. The full impact of this rule has now been published by Medicare in the online Medicare Benefit Policy Manual, found at [www.cms.hhs.gov/Manuals/IOM/list.asp](http://www.cms.hhs.gov/Manuals/IOM/list.asp).

CMS has also published its intention to rescind the Health Care Financing Administration ruling 85-2. This 1985 ruling provided legal guidance on the criteria for Medicare coverage of inpatient hospital rehabilitation services. CMS has indicated that the changes published in the 2010 Rule supersede this ruling, hence making it unnecessary. All rehabilitation inpatient hospitals and units (IRH/U) must become familiar with the new rule, especially the sections that pertain to medical necessity. The old legal standard for medical necessity will not be applicable to discharges occurring after Jan. 1, 2010.

While the modifications made to the 2010 IRF rule are too broad to cover in detail, a few key elements should be noted:

1. CMS has eliminated reference to less intensive care settings.
2. CMS has added several steps that the rehabilitation physician must take during the patient pre-admission screening and post-admission phase to provide clearer medical necessity assertions.
3. The rehabilitation physician must also create an individualized overall plan of care within four days of admission.

Since the duties and responsibilities of the rehabilitation physician in determining medical necessity have been expanded, the suggestion was made to CMS that this determination should, in fact, form the legal definition of medical necessity. CMS did not adopt the proposal, however. Documentation of this CMS-required approach to determining medical necessity may yet prove to be the basis for a compelling argument that facilities can use when fighting a denial of care. Nevertheless, IRH/Us should consider putting considerable energy into obtaining the highest quality physician statements of medical necessity before and after admission and documenting compelling individualized overall plans for care.

I recently completed (with co-workers) a study to examine the difficulty in obtaining expert consensus about what constitutes medical necessity. We studied IRH/U admissions for which coverage was retroactively denied by Medicare and compared the determinations by Medicare reviewers with those we solicited from expert physiatrists. We found expert consensus on what constitutes medical necessity is uncommon, and when consensus does occur, it is generally in strong disagreement with CMS reviewers at all levels of the Medicare review process ([www.pmrjournal.org/article/S1934-1482\(09\)00802-8/fulltext](http://www.pmrjournal.org/article/S1934-1482(09)00802-8/fulltext) provides additional reference information).

Whether these problems with medical necessity and denials of coverage will continue to the same extent under the 2010 rules remains to be seen.

Bruce M. Gans, M.D.  
Chief Medical Officer

# BRACE YOURSELF

> With advances in materials and design methods, knee brace technology has taken significant strides in customization and functionality

**YEKYUNG KONG, M.D., AND GEOFFREY HILL, CPO**

INDIVIDUALS WITH knee joint conditions usually find themselves at the doors of Kessler Institute for Rehabilitation's Brace/Orthotic Center due to diagnoses such as arthritis and other degenerative joint diseases, or muscle weakness secondary to neurological disease, including stroke. Additionally, the factors of age, obesity, repetitive overuse of the knee, osteoarthritis in other areas of the body and prior knee trauma make joint dysfunction more likely. Regardless of the cause, however, recent innovations in knee orthoses, or braces, are providing patients with pain relief, compensation for muscle weakness and restoration of functionally efficient gait.

After extensive evaluation that includes a history and physical, muscle strength tests, and walking exercises, patients are fitted with a simulated brace to determine potential benefits to ambulation and acceptance in terms of appearance and comfort. While some braces are ordered from outside manufacturers, many are made on-site at Kessler.

Braces are highly customized to a patient's diagnosis, symptoms, anatomy and individual needs. For instance, a 20-year-old with pain secondary to torn anterior cruciate ligament will require a different brace than an 80-year-old with arthritic pain. Patients on dialysis frequently experience periodic leg edema and can be fitted with a brace that attaches to the shoe rather than the leg itself, leaving room to accommodate swelling. Braces also can be adapted to cosmetic preferences, such as for individuals in professions that demand particular types of clothing or footwear.

## Less Is More

Although the fundamental mechanics of knee braces have remained the same over the past few decades, significant

advances in the use of materials and design methods have enhanced their overall function. Greater strength-to-weight ratio and reduced bulkiness have been achieved through the use of lighter metal alloys and composite materials, such as carbon fiber or Kevlar. This is imperative for reducing the burden on patients. Individuals with multiple sclerosis, for example, can experience significant fatigue, making the use of lighter materials for this population vital. Computer-aided methods for modeling custom bracing, along with greater anthropomorphic data for prefabricated devices, offer even more enhancements in support and comfort.

Some of the greatest improvements have been in the shaping and assembling of knee-ankle-foot orthoses, indicated for sagittal instabilities of the knee and associated ankle-foot deficits. These braces have incorporated stance-control knee joints that allow for stability during weight-bearing movements, even with slight flexion of the knee, as well as release of the locked joint during the swing phase of ambulation. This offers patients a more normative and efficient gait pattern.

New braces also permit patients not indicated or not yet ready for surgery to experience improvements in quality of life. For those with compartment syndrome, collapsed spaces in the knee joint often lead to cartilage degradation. The osteoarthritis unloader brace, for example, uses a three-point mechanism to relieve stress on the inner and outer knee. Therefore, without undergoing surgery, patients can experience a reduction in the amount of bone-to-bone contact and significant improvements in symptomatic pain and functionality, such as walking more quickly or climbing stairs with greater ease.

## Next Steps

With the goal of regaining functional independence, bracing is a useful adjunct to the rehabilitation process, particularly during the transitional stages of therapy. In some cases, it provides a long-term solution to chronic instabilities of the knee complex. Through technology, the field manages to fabricate orthoses that mimic nature's intended design and continues to refine development of braces that are stronger yet lighter than the metal supports of the past.



*Yekyung Kong, M.D., is the director of Outpatient Stroke Services and oversees the Brace/Orthotic Center at Kessler's West Orange campus. She holds board certifications in physical medicine and rehabilitation, spinal cord injury medicine, pain medicine and acupuncture. Kong also manages Kessler's Videofluoroscopic Swallowing Center. She can be reached at [ykong@kessler-rehab.com](mailto:ykong@kessler-rehab.com).*



*Geoffrey Hill, CPO, is a senior orthotist/prosthetist and orthotic spinal specialist at Kessler's Chester and West Orange campuses. He holds certifications in both prosthetics and orthotics and is certified in most microprocessor lower and upper limb applications. Hill has more than 12 years of experience in prosthetics and orthotics. He can be reached at [gehill@kessler-rehab.com](mailto:gehill@kessler-rehab.com).*

# SPEAKING UP

> Aphasia significantly impacts a patient's communication abilities, but carefully tailored treatment can help increase independence

ANNA BARRETT, M.D., AND ELIZABETH ALFANO, M.A., CCC-SLP

APHASIA IS A COMMUNICATION DISORDER caused, in most cases, by an injury to the brain. It is a "hidden" disability, not readily apparent to an onlooker in the way that paresis caused by a stroke or brain injury is quickly evident. Only when someone begins to communicate with the person with aphasia do the deficits become known. Aphasia patients may benefit tremendously from augmentative or alternative communication (AAC) devices, ranging from simple

nontechnical approaches to high-tech instruments, but AAC must be carefully matched to an individual's needs and capabilities.

*Focus on Rehabilitation* spoke about aphasia, its diagnosis and treatment, and AAC devices with two experts from Kessler Foundation Research Center and Kessler Institute for Rehabilitation: Anna M. Barrett, M.D., director, Stroke Rehabilitation Research, Kessler Foundation Research Center, and consulting neurologist, Kessler Institute

for Rehabilitation; and Elizabeth Alfano, M.A., CCC-SLP, speech-language pathologist at Kessler Institute for Rehabilitation, West Orange campus.

**Focus on Rehabilitation:** How does a person with aphasia typically present to his or her physician?

**Anna Barrett, M.D.:** Every case of aphasia, like every stroke, is a little bit different, but all persons with aphasia have in common a difficulty with some aspect of communication. Some individuals experience a problem understanding language, while others may have trouble speaking, reading or writing. Almost all have difficulty with communicating by phone, where the usual visual and nonverbal cues that we rely on in everyday conversation are lacking.

**Elizabeth Alfano, M.A., CCC-SLP:**

Symptoms can differ widely. For example, one person may substitute words close in meaning and have reduced vocabulary; another may have excessive verbal output and use words that follow the sound pattern of the language but are unintelligible. Individuals with aphasia have a breakdown in language. Some patients may also have coexisting problems with motor speech, but the issue with aphasia involves language.

**Focus:** How is aphasia diagnosed?

**Barrett:** Aphasia is often picked up during a neurologic evaluation after brain injury or stroke. Because about 95 percent of individuals have the critical areas that control speech located on the left side of the brain, if a person is admitted with symptoms of right-sided weakness due to stroke or brain injury, or if a brain scan shows damage on the left side of the brain, he or she is automatically screened for language problems in addition to other deficits.

## COMMUNICATING WITH THE APHASIA PATIENT

It is important for all members of the rehabilitation team to speak directly to the person with aphasia, and to treat the patient with dignity. If all of the talking is done around the individual, not to him or her, this can lead to feelings of frustration, embarrassment, isolation and exclusion. It also is helpful to assure the person that you know the problem is with aphasia, not with intellect.

To further these objectives, team members should not speak too loudly. They should use short sentences and illustrate what they are saying with gestures and illustrations and write down key words. Comprehension should be assessed by asking "Am I clear?" not "Do you understand me?" Finally, staff should always speak naturally, not in jargon. These skills require practice, and therefore it may be useful to solicit feedback in these techniques from a speech-language pathologist.

When working with a person who is using an AAC device, rehabilitation professionals should not assume it is acceptable to finish the patient's message. All team members need to be good listeners and allow time for the individual to formulate a message. When saying "hello" to a person with aphasia, use expectant waiting, so that the patient has the opportunity to initiate his or her own topic of conversation.

Assisted communication techniques benefit not only the relationship between the medical provider and the person with aphasia, but also critical aspects of care. Some aphasia patients have understood and given consent for a procedure, or provided input into medical decisions, with assisted communication techniques. Sharing that experience, and moving past just "words" to effective participation, will reinforce the importance of these efforts.



*New tools and technologies can facilitate and support communications for a person with aphasia.*

**Alfano:** Once the physician makes a referral to speech-language therapy for suspected aphasia, we assess four different domains of language: auditory comprehension, oral expression, reading comprehension and written expression.

**Focus:** What types of treatments are available?

**Barrett:** Most interventions for aphasia are based in speech-language therapy. Our speech-language therapists are very knowledgeable about the range of therapeutic techniques and AAC devices that are available, and they tailor therapy to individual needs. No specific medications have been approved to treat aphasia in the United States, although piracetam has been used in Europe. Other drugs are used occasionally in this country, including a cognitive-enhancing drug and a dopamine-enhancing agent, but these do not carry FDA approval for use in aphasia. In our stroke research laboratory at the Kessler Foundation Research Center, we are now completing a pilot study of an antiepileptic agent related to piracetam to see if it can enhance speech and language in persons with aphasia.

**Alfano:** We consider both the strengths and weaknesses of the patient when tailoring therapy. For example, for a person who has deficits in auditory comprehension, we may use multimodal stimulation, such as a combination of photo, written word, gesture and spoken word to help the patient comprehend what we

are saying. To aid oral expression, we may incorporate melodic intonation therapy, which involves the use of rhythm and signing (melodic phrases). As patients progress, they are trained to use normal prosody (patterns of stress and intonation) to facilitate the return of speech. We may also begin with what

we refer to as “low-” or “lite-tech” AAC approaches, such as a simple communication board with picture symbols or words.

Some patients can benefit from everyday technologies, not just augmentative communication devices. Dictation systems may provide assistance to some patients with agraphia, a deficit in written expression. And for the many aphasia patients who have difficulty communicating over the phone, Skype can reduce comprehension barriers by providing the visual and nonverbal cues of the communication partner.

**Focus:** Can you elaborate on how you match AAC to individual patient needs?

**Barrett:** Every patient is different and requires a unique treatment plan. For example, we are doing research now with a specific AAC device to see if someone with aphasia who also has problems with visual-spatial function is still able to use this particular device. Other issues that determine whether

a device is useful for a given patient include the degree of dexterity with hands and the presence of memory impairments. Some people with aphasia have trouble understanding, and others have difficulty talking; those who have trouble understanding but can talk very well don't have as much need for an instrument that generates speech. How well the caregiver can interact with the AAC device is another area of concern.

**Alfano:** Many electronic options are available for the individual who can benefit from an AAC device to assist in communication, and the function, sizes and costs of these instruments vary widely. Some technologies (such as the Tech/Speak, Go Talk) utilize static displays, where the vocabulary set does not change; limited navigation skills are required.

Other higher-tech alternatives, such as the Dynavox V, Survivor Speech Companion System or Lingraphica, use dynamic displays, where the page set changes following a selection. These devices can be arranged in a grid display or visual screen display and may enable patients to upload digital photos of their own, allowing for more personalized, transparent symbol sets.

Some products are quite large and are designed to be mounted on a wheelchair. They would not be a good fit for an ambulatory person, while a similar but smaller device, the size of an iPod Touch, might be an excellent match.

Once we narrow the selection, we can test the instrument with the patient to determine if it is appropriate.



**Anna Barrett, M.D.**, graduated from the New York University School of Medicine and completed a residency in neurology at Columbia-Presbyterian Medical Center/the Neurological Institute of New York. Her interest in aphasia arises from her deep scientific curiosity about so-called “hidden disabilities” in the brain and how these affect people's lives. You can reach her at [abarrett@kesslerfoundation.org](mailto:abarrett@kesslerfoundation.org).



**Elizabeth Alfano, M.A., CCC-SLP**, received her undergraduate degree in Speech, Language and Hearing Sciences at Hofstra University in Long Island, N.Y., and her Master of Arts in Speech-Language Pathology at Queens College. Because of the challenges faced by patients with aphasia, she finds her work in this area extremely rewarding. You can reach her at [EAlfano@selectmedicalcorp.com](mailto:EAlfano@selectmedicalcorp.com).

# LIVING WITHIN THE RULES

 The 2010 IRF rule comes with new requirements that impact the role of the rehabilitation physician and affect documentation of patient care

**BRUCE M. GANS, M.D.**

**THE 2010 UPDATE** to the Centers for Medicare and Medicaid Services (CMS) Inpatient Rehabilitation Facility (IRF) Prospective Payment System was published on Aug. 7, 2009. This final rule contains several new elements that inpatient rehabilitation hospitals and units (IRH/U) must follow to justify payment for individual Medicare cases. In particular, the rule significantly emphasizes the role and responsibilities of the rehabilitation physician. The rule also discusses new requirements for documenting all aspects of rehabilitation patient care.

In addition, the 2010 IRF rule clarifies timelines for therapy initiation and how the intense therapy requirement is measured, which may help reduce inconsistent interpretations by various Medicare intermediaries around the country. The rule also

(MAC) using a data tool from CMS rather than by manually reviewing a sample of patient records to determine compliance with the 60 Percent Rule (formerly the 75 Percent Rule).

Furthermore, the 2010 IRF rule eliminates the previously acceptable three- to 10-day evaluative admission option. This had allowed rehabilitation physicians to admit a patient to the rehabilitation facility for a short evaluative period to see if the patient would, in fact, benefit from intensive rehabilitation care.

It is a basic fact of life for all IRH/Us that compliance with the new 2010 IRF rule is now an obligation for all who participate in the Medicare program. Any case reviewed by a Medicare contractor is susceptible to denial of payment if all the criteria are not adhered to. Furthermore, a

opportunity to determine if it is using the most efficient and effective practices in the hospital.

CMS has stated that it is also looking at revising the eligibility criteria for IRH/Us, so it is important that all rehabilitation facilities are aware these changes may be coming. It is conceivable, for example, that CMS will make additional modifications to the 60 Percent Rule, such as a change in the types of conditions that count toward the requirement for eligibility as an inpatient rehabilitation facility.

The rehabilitation field has been advocating the use of evidence-based policymaking by government when it makes or modifies IRH/U rules, but there does not appear to be any reliance on data for the changes that have been introduced. It remains to be seen whether these changes will be helpful or harmful to our ability to provide care to those who need us.

Certainly the proposed Medicare changes do not solve the fundamental problem that confronts all of us: The post-acute care system in this country is fragmented and confusing to patients, providers and payers. The field of medical rehabilitation has been advocating for the opportunity to test a new care delivery model, the Continuing Care Hospital (CCH), as a demonstration project. The CCH would consolidate the rehabilitation care provided in IRH/Us with that of hospital-based Skilled Nursing Facilities and the Long Term Care Hospital. As of today, language supporting this exploration is included in both Senate and House of Representatives health care bills, so it is possible that a trial of the CCH could occur in the near future.

*Certainly the proposed Medicare changes do not solve the fundamental problem that confronts all of us: The post-acute care system in this country is fragmented and confusing to patients, providers and payers.*

adds Medicare Advantage patients (that is, those who use the Medicare premium to purchase managed health care insurance) into the pool of patients who count toward determining the percentage of patients admitted by an IRH/U in a reporting period. Facilities that have more than 50 percent of their admissions from Medicare (and now Medicare Advantage) may be reviewed by the Medicare Administrative Contractor

facility jeopardizes its eligibility to be paid as an IRH/U rather than as an acute care hospital if it does not comply with all the eligibility criteria, including the 60 Percent Rule.

## **A Time for Review**

Becoming compliant with the new version of the IRF rule provides facilities with an option to review and freshen all their operating practices. For example, a facility can use this as an

## YOUTHFUL WAYS

(continued from page 1)

their independence, and they should be given choices about their care whenever possible. For example, although state law may require that facilities provide space for parents to stay with a minor patient 24 hours a day, it may be in the youth's best interest to have some time alone. Staff should provide opportunities for patients to voice their needs and thereby have input into their care.

Privacy is another crucial component of adolescent independence. Although rehabilitation professionals should provide appropriate openings to discuss potentially sensitive topics, such as menstruation and sexuality, some youths may feel more comfortable talking with a peer rather than an adult. Kessler's Peer Counselor Program (see sidebar) provides a model for these patients to obtain accurate, relevant information from someone closer to their own age.

### Psychological and Physical Issues

People can regress emotionally because of illness or injury. In adults, this process does not typically have major consequences, but in adolescents it can affect the dynamics within the family and compliance with the treatment plan. Regular psychological screening and follow-up are a part of the rehabilitation process for all teens at Kessler.

Furthermore, younger patients often can become anxious about keeping up with their schoolwork. Kessler has a dedicated, on-site tutor to help adolescents stay on target with their homework and educational progress. When a student is ready for discharge, the staff tutor will facilitate the transition back to public or private school, or to home-schooling or private teaching if more appropriate. A vocational rehabilitation counselor also consults on the case, to ensure that adolescents have what they need to create effective learning environments, such as visual aids or assistive devices.

For young women, it can be normal for the menses to disappear for the first four to six months after TBI or SCI. Staff should communicate this information proactively and discuss methods of

hygiene that are appropriate for the specific clinical and developmental situation.

Boys and young men, on the other hand, have the highest risk for hypercalcemia due to immobility. To address this concern, staff must have a higher index of suspicion and monitor serum calcium levels frequently. Muscle stretching and electrical stimulation can be used in cases of limited mobility, although these interventions have not been shown to decrease the risk of hypercalcemia.

For all adolescents at Kessler, staff members educate patients and their families about living with their injuries and resuming an active lifestyle. In addition, Kessler conducts community outreach to adolescents on prevention of TBI or SCI. The focus is on making good choices with regard to driving, sports and other activities that place youths at highest risk of injury.

### Fitting In

Adolescents generally do not like to "stand out in the crowd." Goal planning during rehabilitation therefore must take into account the patient's perception of disability and his or her emotional maturity. For example, teens are much less likely to be compliant in managing certain needs—such as wearing a leg brace—if these activities set them apart in any way from their peer group. Again, fostering a collaborative effort that gives them options and emphasizes progress is one of the best ways to garner acceptance.

No specific guidelines exist regarding the management of adolescents undergoing rehabilitation, primarily because most research protocols have excluded this age group. At Kessler, patients age 16 and up can participate in research with a parent's or guardian's consent. Until further evidence accrues, however, the consensus is that a multidisciplinary program such as Kessler's is necessary to achieve optimal outcomes in young patients.



## KESSLER PEER COUNSELOR PROGRAM

Teens sometimes accept information more readily from someone closer to their own age than from an adult. Recognizing this, Kessler has for many years offered a Peer Counselor Program as a resource for its youngest patients and their families. These volunteer counselors, former adolescent TBI or SCI patients successfully treated at Kessler, undergo an extensive training program that covers both general considerations for those undergoing rehabilitation and issues specific to adolescents, such as their emerging needs for privacy, independence and peer acceptance. New patients can call on these peer counselors for advice or support at any time. The counselors also can offer hope to families, by providing a tangible reminder that positive outcomes can and do happen after TBI or SCI.



**Monifa Brooks, M.D.**, is a staff physiatrist at Kessler Institute for Rehabilitation. She attended Temple University School of Medicine in Philadelphia and completed her residency in physical medicine and rehabilitation (PM&R) at the National Rehabilitation Hospital in Washington, D.C. She is board-certified in both PM&R and SCI rehabilitation. You can reach her at [mobrooks@kessler-rehab.com](mailto:mobrooks@kessler-rehab.com).

## BALANCING ACT



Targeted exercises, functional movement protocols and innovative new devices are helping patients in vestibular rehabilitation take the fast track to recovery

### JOSEPH CACCAVO, P.T.

VESTIBULAR rehabilitation is a relatively new area of physical medicine that is making great strides in helping patients with inner ear disorders quickly restore function. The most common cause of balance disturbance or dizziness is benign paroxysmal positional vertigo—a displacement of the otoconia secondary to traumatic brain injury or normal aging. Inner ear infections are the second most likely etiology, followed by cardiac arrhythmias and hypotension.

Depending on the diagnosis, vestibular symptoms may include vertigo, perceptions of environmental motion, lightheadedness, sensations of “fullness” inside the ears, tinnitus, nausea and vomiting. Unlike musculoskeletal disorders that require use of ambulatory assistive devices, vestibular degradations do not necessarily exhibit observable signs of impairment.

In time, most vestibular dysfunctions will improve somewhat without treatment. However, rehabilitation expedites the process and maximizes quality of life by restoring functioning, sometimes in as few as four sessions. All Kessler Institute for Rehabilitation campuses have certified vestibular therapists, who adapt treatment protocols to a patient's symptoms and etiology. For instance,

the ability to maintain steady vision despite head movement, known as gaze stability, helps the body preserve balance. Dizziness resulting from gaze stability deficits can be effectively treated with vestibular-ocular reflex exercises.

Dynamic movement exercises are also essential. These are more functional than traditional static balance exercises, taking into consideration that we all live a movement-oriented lifestyle. These activities address the various components that compose the balance system, including the vision, somatosensory and vestibular systems. In general, functioning can be maintained provided that at least two of the three mechanisms are intact. Dynamic training isolates each of the systems, helping therapists determine where impairments lie. For example, to assess somatosensation (stability provided by sensing pressure from the ankle and floor), patients might be asked to ambulate on unsteady

surfaces, like foam blocks.

Vestibular rehabilitation at Kessler includes use of computerized dynamic training with the SMART Balance Master system, wherein patients perform functional exercises while responding to movements in the surface or visual environment. This includes maintaining the center of gravity while balancing on a shifting floor. Computer feedback helps the therapist identify the underlying impairment and monitor progress. Exercises can then be adapted to the patient's level of improvement. Another innovative tool, BrainPort, which is currently in clinical trials, utilizes electrocutaneous tongue stimulation to train patients how to position their head in space more effectively.

Dizziness is the most common complaint among geriatric patients, and as the elderly population increases, the importance of vestibular rehabilitation will likely continue to grow.



**Joseph Caccavo, P.T.**, has been a certified vestibular therapist and clinical specialist at Kessler's West Orange campus for eight years. He holds a master's degree in physical therapy and has been working in vestibular rehabilitation for seven years. Caccavo also teaches courses in physical therapy and vestibular rehabilitation at Dominican College in Orangeburg, N.Y. He can be reached at [jcaccavo@kessler-rehab.com](mailto:jcaccavo@kessler-rehab.com).