



**BRAIN INJURY  
ASSOCIATION  
OF NEW JERSEY**

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No Brain Injury is  
Too Mild to Ignore,  
or Too Severe to  
Lose Hope

## **Unexpected Medical Problems Can Surface After Brain Injury**

*By Carolyn Rocchio*

Following a brain injury, the initial focus is naturally on preserving life and achieving medical stability. Most individuals surviving car crashes and other catastrophic events are transported to the nearest hospital and/or major trauma center. Trauma care is reasonably consistent nationwide, and is expected to preserve the brain from secondary damage, bring the patient to medical stability and prepare the individual for transfer to rehabilitation. Individuals in acute care settings commonly experience repeated infections and other reversible conditions. In addition to the commonly encountered medical problems, there are others less customary and vigilant families are often the first to notice subtle changes that may indicate a problem.

Individuals have very different experiences with rehabilitation. While some need extended physical rehabilitation to improve motor capabilities, others may need more intensive rehabilitation to increase cognitive functioning. Early (acute) rehabilitation is focused on gross motor improvements, such as ambulation and restoration of communication. Few in this era of cost containment will receive long-term rehabilitation services, thus, families become the primary caregivers and need to be alert to various problems and changes that may indicate the need for re-evaluation or follow-up treatment.

Equating the brain to a computer enables one to understand its complexity. When the brain is damaged some conditions are readily apparent, such as: coma, loss of speech or motor function. Many other areas -- less visibly obvious -- are adversely affected and may cause difficulty. Often the individual lacks sufficient communication skills to adequately describe problems and alert the treatment team or family. Additionally, a low level of cognitive awareness may prevent the individual from realizing there is a problem.

Problems developing after the individual is home and no longer involved in medical or rehabilitation settings may not be as readily recognized as a result of brain injury, and valuable treatment time can be lost if caregivers are unaware of some possible medical consequences of brain injury.

### **Heterotopic Ossification (HO)**

HO is a secondary condition in which there is abnormal bone growth in selected joints, most commonly in the hips, shoulders, knees and elbows. It usually occurs within the first nine months after injury and is most often discovered by the physical therapist when limited or painful range of motion is seen. However, HO is frequently spotted first by families when



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their family member grimaces upon being turned, ranged or when developing a swollen or reddened joint. Prophylactic medications are sometimes used, but in general, once HO is confirmed through clinical observation and lab tests, medication is started to retard or slow the growth of the excess bone.

There is some recent evidence suggesting that HO can occur as the individual with brain injury ages. This, along with changes in musculoskeletal system problems, i.e., various forms of arthritis, osteoporosis, and worsening spasticity and dystonias portend future problems that must be addressed. Evaluation by a physiatrist (specialist in physical medicine and rehabilitation) may be indicated.

### **Hearing Loss**

Hearing problems can occur for a number of reasons, both mechanical and neurologic, particularly when the inner ear and/or temporal lobes have been damaged. All patients should have an otoscopic examination and hearing screening followed by behavioral testing. External bleeding in the ear canal, middle ear damage, cochlear injury, and/or temporal lobe lesions can cause auditory dysfunction.

### **Visual System Changes**

Vision and visual functioning is often adversely affected by brain injury. Even in the earliest stages when a patient with a tracheostomy, over which a nebulizer is placed, is susceptible to infection as a result of the mist circulating past the eyes. The results of an untreated infection of this nature may cause corneal ulcers and other undesirable problems related to the eye. Families, vigilant at the bedside, are often the first to notice changes in the eyes, e.g., redness, watering and other signs of a problem and should alert the nursing staff. A consultation is usually arranged with an ophthalmologist and with treatment, the problem can be brought under control.

Traditionally the occupational therapist evaluates visual perceptual functioning and teaches methods for compensating for any perceptual deficits. In addition, it is important that visual processing and visuo-motor ability be evaluated. Some of the more common visual systems problems include double vision, field cuts, sector losses, rapid eye movement and nearsightedness. Consultation with a neuro-ophthalmologist and/or behavioral optometrist should provide valuable information about visual systems changes and recommendations about the use of corrective lenses or other modalities to treat any existing problems.



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The eye is only the window that takes in the visual image, and it is the brain that in turn must interpret and give meaning to that image. Families need to know how and what their family member is seeing and understanding before realistic goals can be achieved.

### Neuroendocrine Disorders

At this time, there is very little substantive research information about an individual's predisposition to other medical conditions as one ages with a brain injury. However, in response to a focus group of 50 women conducted by the Research and Training Center on the Community Reintegration of Individuals with Traumatic Brain Injury, information is emerging to suggest that chronic neuroendocrine difficulties are occurring in women some years post injury. Although these functions may have been monitored well in the acute phase of recovery, the participants reported five or more years later that they were experiencing problems such as weight gain, thyroid disorders, changes in hair and skin texture and perceived body temperature changes. The women additionally complained of chronic sleep disturbances, difficulty controlling blood pressure, a reduction in levels of immunity to infections and arthritic complaints. Indications are that damage in the hypothalamus, limbic system and pituitary may play a role in these disturbances.

Most individuals with brain injury are expected to experience a normal life span, barring unforeseen circumstances. However, research into chronic conditions to which individuals with brain injury may be predisposed is essential to their quality of life.

### References

Cohen, A. H. & Rein, L. D. The effect of head trauma on the visual system. *Journal of the American Optometric Association*, 63(8), 533.

Hibbard, M.R., Uysal, S., Sliwinski, M. & Gordon, W. (1998). *Undiagnosed health issues in individuals with traumatic brain injury living in the community*, 13(4), 47-57. J Head Trauma Rehabilitation, Aspen Publications.

Trace, R. (1995). *Assessing hearing loss in patients with brain injury*. Advance for Speech-Language Pathologists.

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*Carolyn Rocchio is the parent of a son with a brain injury sustained in a 1982 automobile crash. She is the founder of the Brain Injury Association of Florida and a former member of BIA's Board of Directors.*



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