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Head Injury Recovery: Interview with Larry E. Schutz, PhD

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Douglas L. Beck, AuD, speaks with Dr. Schutz, neuropsychologist and first author of *Head Injury Recovery in Real Life*, about head and brain injury, motor vehicle accidents, traumatic brain injury, diffuse axonal injury, physical, cognitive and behavioral injury, and more.

Academy: Hi, Larry. Thanks for speaking with me today.

Schutz: Hi, Doug. My pleasure, thanks for the invitation.

Academy: You're welcome. For the benefit of those who may not recognize your name, I should mention you served as a clinical professor in the graduate program for speech language pathology and audiology at the University of Central Florida. Larry, please tell me, when and where did you get your doctorate?

Schutz: I studied developmental psychology at Johns Hopkins and then earned my doctorate in clinical psychology from the University of Kentucky, which was awarded in 1983. At the end of my education, I took an interest in neuropsychology and pursued an internship in neuropsychological rehab at the Palo Alto Veteran's Administration Hospital. That's where I first worked with speech language pathologists, almost 30 years ago.

Academy: I'm sure the Palo Alto VA sees an enormous and highly diverse group of patients. What was it that got you interested in head injury patients?

Schutz: The patients with head injuries were usually relatively young, and many of them had special needs for training to go back to work, school, or parenting. For the most part, they were also harder to treat. Most were mobile, active, and strongly motivated to exit rehab and go home. Most importantly, they unequivocally rejected the explanation that they had suffered brain injuries and needed the rehab. The interdisciplinary team depended on us to convince the patients to remain in treatment and cooperate with the therapies. The psychologists were also charged with educating the patients about their injuries, as well as rallying their motivation to keep working on recovery issues after their return to the real world.

In the Palo Alto program, the psychology staff actually provided hands-on cognitive therapies, whereas very few neuropsychologists in other facilities around the country ever directly treated cognitive deficits. The work was fascinating because it was so complex and difficult, and exciting because psychology took the lead role in addressing these issues.

Academy: I noticed the quote from the Brain Injury Association, which you've placed at the beginning of the book, "After head injury, life is never the same." And that's supported through the current demographics that also seem to indicate head and brain injury patients are at both ends of the spectrum, very young and very old?

Schutz: Exactly. Elderly people are more fragile and more susceptible to falling, they're weaker and often cannot protect themselves from injury when they fall, and of course, infants have the same issues. However, the other population that is very susceptible to head and brain injury is teenage and young adult males in the age range from 15 to 24. Of course, males are involved with more motor vehicle accidents and assaults, fights, athletic injuries, and so on. In general, they're more aggressive, more active, and less careful.

Academy: I recall that in my eight or nine years working in the audiology department of a level one trauma center in an urban center. Our ENT residents would often refer to the Friday and Saturday night patients as members of the "gun and knife club."

Schutz: Yes, those incidents tend to involve males in the same age range. And it's interesting that only in the inner cities are gun and knife injuries to the head and brain more frequent than motor vehicle accidents (MVA).

Academy: What is the single most common etiology of head injury that you address?

Schutz: The patients we see most often in medical rehabilitation are there secondary to motor vehicle accidents.

Academy: And there's more to it than banging one's head into the windshield or the dashboard?

Schutz: Right. The issue is often the sudden acceleration and deceleration of the brain within the cranium. So the person who experiences a sudden stop with benefit of air and shoulder straps and an airbag, may not sustain an actual impact trauma to their head. However, once the head stops moving forward suddenly and the brain keeps moving (as it is somewhat suspended in fluid within a bony vault) until it physically hits the inside of the skull—that produces the lion's share of the MVA injuries as significant force is transferred from the vehicle to the brain.

Academy: Which part of the brain typically suffers the most injury in sudden stop situations?

Schutz: Well, as you can imagine, the variation is tremendous, but yes, there are some injuries that are more common than others. Diffuse Axonal Injury is very common and it selectively affects long white matter tracts and structures because they're the ones most easily torn and damaged as the brain and the resultant pressure wave moves through the cranium. Once those neural structures are torn, they release chemicals that can do additional damage. The worst damage is usually done to the networks that perform problem-solving and other executive functions—essentially the brain systems we use for behavioral adaptation.

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Academy: Is it true that the quicker someone recovers, the more likely a complete recovery is? Likewise, if little progress is made in the first 6 to 12 months after injury, the chance of a complete or significant recovery decreases?

Schutz: Well again, the variation is tremendous, but yes. In general, for physical recovery, your point applies. However, cognitive and behavioral recovery can be achieved even many years after the onset of injury. Many of the patients we treated in the first- and second-generation neurorehabilitation programs were between five and ten years post onset. There are other factors that matter, too. For example, the amount of adaptation that is needed for a good recovery depends largely on the overall severity of the diffuse injury (as estimated by the duration of coma and the duration of post traumatic amnesia). However, the most important factors are attitude and motivation.

Academy: Can you explain the "stair step" effect in brain injuries?

Schutz: Well, what you're referring to is the fact that there is not a direct relationship between disability and impairment in head injury. That is, a relatively minor brain injury that causes only a few hours of coma may nevertheless be sufficient to disconnect and deregulate the executive system. If that happens, behavioral adaptation stops taking place and even the minor symptoms of such an injury produce unremitting disability. However, advanced rehab helps some survivors learn to cope with vast amounts of severe impairment effectively. The survivors who tell their stories in the book *Michael and I* wrote have all had very severe injuries, yet all of them ended up functioning remarkably well. They accomplished their amazing recoveries because they opened their minds to input, learned about their injuries, and then spent the rest of their lives making great efforts to adapt.

Academy: And just to get an idea as to how common head and brain injuries are, can you tell me how many cases of traumatic brain injury (TBI) occur annually?

Schutz: Sure, the numbers for TBI in the United States run from about 1.5 to 3 million cases annually, and of those, some 75 to 90 percent are relatively minor. However, the estimates also indicate that some 10 percent of TBI hospitalizations will be associated with permanent total physical disabilities. Nonetheless, the larger portion of people with head and brain injuries experience cognitive and behavioral injuries, similar to the executive function issues we just mentioned. Again, many of these people appear normal to the casual observer, but many of my colleagues refer to them as "walking wounded." These are people who appear normal but cannot maintain jobs or friendships. So there are many millions of people with head and brain injuries and the range is from slight to profound and everywhere in between, and includes physical, emotional, cognitive, behavioral and other damage.

Academy: And I think I read that the number one complaint of TBI is forgetfulness?

Schutz: Yes, from the patient's perspective, that's what they complain about the most.

Academy: And I should mention that in your book, you review in some detail the histories and stories of 15 people, some of whom recover by themselves and some with amazing support from loved ones.

Schutz: Yes, I think those stories are very useful and instructive and they do tend to demonstrate that effort matters. In fact, as we say in the book, "Effort may be the primary curative factor."

Academy: Can you tell me just a little about effort and outcomes?

Schutz: Well, oddly enough, it's very straightforward. Rehab requires effort, and with more effort, the outcome improves. It takes extra effort to learn to use the appropriate compensation strategies and even more to master them. It takes still more effort to transfer them from the clinic where they were taught to the real world. So effort is essential to the effectiveness of any kind of rehab. However, it also appears that effort can reactivate the dormant executive system and power it to take control of behavior. This is what we mean by the primary curative factor.

The former patient who has learned to think hard enough whenever hard thinking is called for can defeat the most common disabilities associated with the injury. And those who achieve outstanding recoveries are also distinguished by how much effort they make in their daily lives to compensate for their permanent impairments. The take-home lesson for those of us who specialize in this area is that we cannot fix the damage to the brain ourselves, but we can train our patients to do so. If we focus on teaching them how to be their own self-therapists, they will take care of recovering the functions that are important to them.

Academy: Okay, Larry, thanks again. I enjoyed the book and learned quite a bit. Thanks for your time!

Schutz: My pleasure, Doug.

Larry Schutz, PhD, is a neuropsychologist and first author of Head Injury Recovery in Real Life.

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