

# A PERSONAL VIEW INTO PRESSURE MANAGEMENT

## WHAT TO DO WHEN A CLIENT IS NON-COMPLIANT WITH “STANDARD” TILT RECOMMENDATIONS

*This case study is unique and personal for me in that I have known Jerry Segal since before he sustained a spinal cord injury and well before I became a physical therapist and mobility and seating specialist. While my training and continuing education has formulated important therapy constructs in my daily practice, Segal’s “I won’t take no for an answer,” approach challenged those constructs and has taught me invaluable lessons in working with the “client” to help them meet their functional and life goals.*

Segal has worked hard for all his successes in life. He has never expected anything to be easy or to be handed to him. He has pushed the barriers since he worked his way through law school and started his own law firm. At 48 years of age, Segal had a C1-C4 cervical laminectomy and fusion that resulted in C4 tetraplegia, incomplete. He has lived with partial motor skills and no sensation below the level of the chest for the last 26 years. Despite this, he pushed himself to “memorize” the gait pattern, so he could “walk” his daughter down the aisle at her wedding. I’m not sure if Dad stole the moment, but the guests were in awe.

From day one, Segal was committed to daily exercise in some form, sometimes up to three hours, whether it be supported treadmill training or water therapy (See Pictures 1 and 2). This was in addition to working full-time, fundraising and serving on multiple boards. He maintained consistent physical therapy to work on his gait and balance and maintain muscle mass. Functionally, he maintained his gait with two Loftstrand crutches for short distance ambulation and used a manual wheelchair and scooter as his primary means of mobility. He would often transfer from his scooter or manual wheelchair to his office chair without skin protection mediums, but with dynamic reach and his exercise regimen, he had no history of pressure injuries. There is no question that aging with a spinal injury took its toll, but Segal adapted and used his multiple means of mobility options based on his activity requirements that day.

In December of 2014, Segal had an anoxic event while exercising in his pool. He had a significant decline in all his mobility and thus, was unable to ambulate or use his scooter and was dependent for all transfers. He experienced impaired motor planning, initial decrease in short-term memory and reduced insight into his change in status. Segal also had significant pain in his shoulders, kyphosis and high blood pressure.

While Segal was an in-patient, a facility power chair with all power seat functions was provided as he was unable to maintain static (independent upright posture) or dynamic sitting balance (shifting or reaching within and out of his base of support) or perform his own weight shifts (See Picture 3). He was given instruction on the use of this wheelchair but could not report the specifics of power tilt for pressure relief. He was far more interested in the fact that he could elevate his seat to speak to family and colleagues at eye level. He did recognize its

advantages for antigravity positioning for fatigue.

Segal required constant reminders and encouragement to utilize the power tilt for specific pressure relief by therapists and his wife, but did not initiate this himself. Segal, who had been able to use his scooter and manual wheelchair to meet all his needs for 26 years, saw this mobility device as temporary at best and carryover, required constant reminders, mostly from his wife, during his stay and initial discharge at home. Remember, his activity pattern had included daily water therapy, other exercise, daily transfers and working from a seated position – so his pressure “management” had been addressed in other ways besides the “typical” and “recommended” power tilt for pressure management.

In the ICF Model (International Classification of Functioning, Disability and Health), positioning and pressure goes beyond the wheelchair to the other support surfaces the client has in the home. We know that research supports weight shifting activities including, but not limited to, tilt to help prevent pressure injuries in persons with spinal cord injuries.

### PRESSURE RELIEF VS. WEIGHT SHIFT BEHAVIORS?

Therapists generally associate the magnitude and duration of a pressure relief with decreasing occurrence of pressure injury development. However, studies investigating pressure injury prevalence in clients with SCI do not find pressure relief behavior



PICTURE 1

Jerry riding it out on a recumbent bike- manual assist



PICTURE 2

Physical therapy gait training to maintain muscle mass and mobility



PICTURE 3

Surrounded by family, Jerry overcomes an anoxic injury



PICTURE 4

The manual chair...my chariat! Its gets me to dinners out and meetings!

or frequency to be associated with pressure injury occurrence (Sprigle and Sonenbum, 2014). In Jerry’s case, this would be true, at least up until his anoxic event and subsequent change in functional status. Protective weight shifting behaviors include activities other than dedicated pressure reliefs, and include many functional movements performed while seated in a wheelchair which also redistribute pressure off high risk areas. This was the key for Segal, as he was extremely active in any of his mobility bases. Working at his desk, transferring, and sitting on other surfaces, though unprotected, required frequent unweighting of his body which maintained the health of his skin.

Segal’s functional movements seemed to have the greatest impact on his seated pressure, blood flow and overall tissue health. Specifically, the type and frequency of movement during his everyday activities (e.g. wheelchair usage, weight-shift activities) directed the design and implementation of clinical interventions (e.g. education, training, equipment).

So, is it possible that the influence of small, functional movements on ischial pressure, blood flow, temperature, and humidity are effective in reducing pressure injuries? Segal did not comply with recommended tilt magnitude and duration designed to reduce pressure injury risk. However, his smaller, more

frequent movement, activities and use of other mobility and exercise equipment seems to have prevented pressure injury development. Sonenblum suggests it might very well be the case, but further study is necessary (Sonenbum, Vonk, Janssen, Sprigle, 2014).

Segal and I had a serious conversation about the use of the power wheelchair, power tilt and other power positioning options. He did understand initially after his anoxic event that he was unable to roll independently, was dependent for all transfers, and was not able to effectively perform a weight shift. He had been lucky that he had not developed pressure injuries, but he was pushing the limits. He also acknowledged that increased weakness and pain in his shoulder joint was limiting his ability to move himself. So, in good faith, he agreed to a power wheelchair with a power tilt for use after discharge. I was a part of the outpatient therapy team that was treating Segal in his home, and I could see his struggle with operating the joystick. He was used to a scooter tiller and learning to use the joystick was a steep learning curve. Driving frustrated him, and while he understood the need for the power wheelchair tilt, he simply found the “tiller” of his scooter to give him the functional mobility he needed.

This is the moment during his treatment which challenged my own construct. Everyone else had left when I arrived at his home, and Segal seized the moment. He said, “You know, Lois, I can drive my scooter, but no one will give me the chance.”

I was a part of a treatment team, so this was not my “decision” to make on my own, but I knew Segal. He was going to initiate the use of his scooter whether I participated or not. So, I had a choice – be a part of the assessment and safety check or not. I chose to go to his garage and retrieve the scooter. We discussed the serious risks of a non-pressure relieving seated surface, the lack of postural support, and his current difficulty with his static and dynamic sitting balance. He agreed that, if he had access to both, that he would choose which mobility base he needed depending on his schedule that day. Of course, the scooter was stored in the garage where he could not get to it. Despite his decrease in trunk strength and balance, he could operate the tiller better than the joystick, as he is used to this motor pattern. I called the team, discussed the situation with his wife (who knew she would not win this one), and I supported Segal’s wishes. If I let myself stay within the construct of his diagnosis and status, then Segal would not have been able to maximize his mobility. He agreed he was not safe driving the scooter outside his familiar home environment without supervision and assistance for transfers.

As a sidebar, Segal, with no sensation in his hands and decreased motor planning, had difficulty using a standard joystick configuration and handle. Perhaps if he had tried an

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alternative driving method, he would have been more successful. I introduced Segal to Active Controls, which offers a “tiller” type driving method for power wheelchairs and he will be trialing this in a few months. Segal will do all he can to ensure he has choices in mobility products for as long as possible, but he also knows it is likely he will need the power wheelchair as he continues to age with his spinal cord injury.

Segal recently asked me about a possible upgrade to his current scooter which is quite old, and has a low-profile captain’s seat and back. I told him I would consider a new scooter with a solid seat insert and modify the base to attach a more supportive lateral contour backrest. If you can’t beat them, join them!

Aging with a spinal injury brings with it many challenges, but if we can find creative ways to help Segal continue for as long as possible using his preferred mobility options functionally, then we have done our job! If we allow our assumptions to influence us, we can further limit the “client” from reaching their maximum functional outcomes. Segal is a “defy the odds” kind of guy. He won’t take no for an answer because he insists on trying an option first. Sounds like a smart guy! (See Picture 4).

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#### REFERENCES:

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