12 Physiological Benefits of Tilt-in-Space Chairs
By American Seating and Mobility

Many different types of wheelchairs are available on the market. However, tilt-in-space wheelchairs (manual or powered) offers a wide variety of benefits to certain consumers which cannot be obtained by a traditional seating system without the ability to force a weight shift by tilting. Throughout the day, people keep changing their positions. They sit up, tucking their feet under the chairs for some time, and then they slouch and stretch their legs out. Tilt systems have traditionally been used by clients who require pressure relief. However, they are beneficial in many other ways as well. Here are 12 physiological benefits of a tilt-in-space wheelchair.

#1: Pressure

People move, on average, 30 times in an hour when they are seated. However, those suffering from cerebral palsy, muscle diseases and head and/or spinal cord injuries may not have the strength or ability to change their body position and provide relief to the pressure points. It is important that they reposition themselves at least once every 15 minutes to prevent development of ulcers. If a person sits for too long without changing his/her positions, even the best cushions would not be of any help. A pressure of 32 millimeters of mercury is sufficient to constrict a capillary. Even if a person using a ROHO cushion is positioned properly without tilt, the pressure exerted is approximately 40-60 millimeters of mercury. Tilt-in-space wheelchairs allow users or caregivers to change their position, enabling them to shift pressure away from one point and redistribute it over a larger surface area.

#2: Shear

The problem with reclining is that pressure gets transferred to the sacrum, the triangular bone at the bottom of the spine. This pressure, referred to as shear force, causes discomfort and breaks down the skin fairly quickly. Studies show that tilting the wheelchair by 20 degrees helps to significantly reduce shear force. Further, a tilt of 25 degrees eliminates shear.

#3: Management of Edema

For optimal management of edema, the legs have to be positioned either at the level of heart or above the heart. It is not possible to achieve this either by elevating the leg-rests or using tilt alone. A tilt-in-space wheelchair enables the user to do both in conjunction to achieve optimal results.

#4: Postural Hypotension

In order to manage acute symptoms like dizziness associated with orthostatic hypotension, the patient has to be maintained either in a semi-recumbent or recumbent position. This can be achieved only by using a tilt-in-space wheelchair, which allows a combination of recline, tilt and elevation of leg-rest.

#5: Positioning

Tilting is helpful in preventing a patient from falling forward when he/she is in sitting position. It is also beneficial in passively correcting scoliosis (lateral curvature of the spine) and kyphosis (convex curvature of the spine).

#6: Stability/Balance
Tilting enhances the patient's feeling of security as the possibility of falling forward from the sitting position often makes him/her very apprehensive. Additionally, tilt ensures stability, especially when going down a slope.

#7: Endurance/Fatigue
The tilt-in-space wheel chairs are designed to minimize the fatigue caused when patients holds his/her body upright for a long period of time. This type of wheelchair option, therefore, improves the overall sitting tolerance or endurance of the patient.

#8: Independence
Patients who experience the least discomfort when sitting are often more productive. Users who are able to spend more time in their wheelchair and out of their bed will have more opportunities for participating in day-to-day life along with others in the household, greatly improving their quality of life.

#9: Vestibular System Stimulation
The tilt-in-space wheelchair is the best option if the patient requires vestibular system stimulation. The tilt system is helpful in orienting the patient's head and trunk position. This in turn helps to improve the line of sight of the patient.

#10: Patient Lift Transfers
Patients that need 90 to 100 percent assistance for getting into and out of bed can pose a great deal of injury risk to both patients and caregivers. Tilt-in-space wheelchairs help to greatly reduce this risk since the caregiver can tilt the client fully. It reduces the effort required for positioning the patient.

#11: Back Pain
The anterior annulus of a slumping patient (whose spine is flexed) experiences 50 percent more pressure than when the spine is in its natural position. This can cause back pain. This can be avoided if a tilt-in-space wheelchair is used.

#12: Comfort
Comfort may not be a medical necessity, but the patients need to be seated comfortably in order to feel better. Therefore, comfort contributes a great deal to improve the condition and recovery.