

In 1948, in a study that would be illegal to conduct now, a group of men with normal physical function and health were asked to stop standing, so that scientists could discover the impacts of a fulltime seated lifestyle. The impacts were huge and included decreased bone density, pressure ulcers, development of joint contractures, impaired bowel and bladder functioning, impaired respiratory function, and gastrointestinal problems.¹ Since then numerous studies have corroborated the positive impact of standing for all people including individuals with disabilities who use wheelchairs fulltime.

Health Benefits

- Maintaining bone density,^{2,3}
- Reducing risk of or acquiring and facilitating healing of pressure ulcers,^{4,5}
- Reducing spasticity,^{6,7} and managing contracture,⁸
- Facilitating gastrointestinal and respiratory function,⁴ and
- Facilitating bladder and bowel function.^{5,9}

Functional Benefits¹⁰

- Vertical reach is greater,
- Productivity and performance on work and personal care functions improve, and
- Reduces the need for caregiver assistance.

Social Benefits

- Improves psychological wellbeing by supporting autonomy and self-determination, and
- Allows enhanced engagement in activities and the community.

¹ Deitrick, J., Whedon, G. & Shorr, E. (1948). Effects of immobilization upon various metabolic and physiological functions of normal men. *American Journal of Medicine*, 4:3.

² Ward, K., Alsop, C., Caulton, J., Rubin, C., Adams, J., & Mughal, Z. (2004). Low magnitude mechanical loading is osteogenic in children with disabling conditions. *Journal of Bone and Mineral Research*, 19, 360–369.

³ Rubin, C. T., & Lanyon, L. E. (1984). Regulation of bone formation by applied dynamic loads. *Journal of Bone & Joint Surgery—American Volume*, 66, 397–402.

⁴ Eng, J. J., Levins, S. M., Townson, A. F., Mah-Jones, D., Bremner, J., & Huston, G. (2001). Use of prolonged standing for individuals with spinal cord injuries. *Physical Therapy*, 81, 1392–1399.

⁵ Dunn, R. B., Walter, J. S., Lucero, Y., Weaver, F., Langbein, E., Fehr, L., et al. (1998). Follow-up assessment of standing mobility device users. *Assistive Technology*, 10, 84–93.

⁶ Bohannon, R. W. (1993). Tilt table standing for reducing spasticity after spinal cord injury. *Archives of Physical Medicine & Rehabilitation*, 74, 1121–1122.

⁷ Odeen, I., & Knutsson, E. (1981). Evaluation of the effects of muscle stretch and weight load in patients with spastic paraplegia. *Scandinavian Journal of Rehabilitation Medicine*, 13, 117–121.

⁸ Trudel, G., & Uhthoff, H. K. (2000). Contractures secondary to immobility: Is the restriction articular or muscular? An experimental longitudinal study in the rat knee. *Archives of Physical Medicine & Rehabilitation*, 81, 6–13.

⁸ Hoinig, H., Murphy, T., Galbraith, J., & Zolkewitz, M. (2001). Case study to evaluate a standing table for managing constipation. *Spinal Cord Injury Nursing*, 18, 74–77.

⁸ Dicianno, B.E., Morgan, A., Lieberman, J., Rosen, L. RESNA Position on the application of wheelchair standing devices: 2013 Current State of the Literature. Approved by RESNA Board of Directors 23 Dec 2013.