

Letter Of Medical Necessity

To: To Whom It May Concern
From: Dr.
Re: Requesting coverage approval for the Superstand Standing Wheelchair

Patient/Beneficiary: John Doe
DOB: 99/99/1999
Dx: Multiple Sclerosis
ICD-9: 340 Multiple sclerosis
781.3 Lack of Coordination/Ataxia

To Whom It May Concern:

The purpose of this letter is fourfold: First and foremost to obtain financial insurance coverage for the manual Superstand Standing Wheelchair Model HPS-2 for the individual, _____. Secondly, to provide pertinent background information on the medical and health status of _____. Thirdly, to provide pertinent information about the Superstand Standing Wheelchair in addition to evidenced-based research supporting this letter's request. Fourthly, to provide important key information on the critical features of standing-which is a key characteristic of the requested equipment.

Patient Background and Current Health Status:

Let me begin by providing important background information on the patient, _____. _____ is a _____ year-old gentleman who was diagnosed with Multiple Sclerosis in 1984. He has therefore endured the effects of this debilitating disease for approximately 22 years. Thus far, these effects have included, but are not limited to the following:

- Increased muscle spasticity in the trunk and extremities
- Muscle atrophy with decreased muscular girth and strength in the trunk and extremities
- Impaired/Decreased muscular coordination (both gross and fine motor)
- Impaired/reduced swallowing/speech abilities
- Range of motion deficits at joints such as the hips, knees, ankles, shoulders, trunk
- Skin sensitivity and fragility over the gluteal and lower sacral areas due to impaired independence with gross mobility tasks
- Impaired bowel and bladder function with loss of volitional control
- Reduced pulmonary and cardiovascular function

The above effects are not uncommon in cases of progressing Multiple Sclerosis as the disease gradually has a deleterious impact on the conduction of neural impulses to the body's musculature (specifically damaging the Schwann cells and Myelin Sheath covering of the nerves).

More recently, _____ was hospitalized in December of 2005 with the chief problem of respiratory distress related to aspiration pneumonia – ultimately related to reduced and impaired pulmonary function, reduced swallowing, decreased time in upright positions, and reduced gross motor strength.

_____ at this hospitalization, failed a barium swallow study and had to undergo placement of a PEG tube in order to meet the nutritional demands of his body. It is also important to note that _____ has had a history of UTI diagnoses and was again diagnosed with this at this hospitalization.

In addition to the above hospitalization, _____ was again hospitalized in January of 2006 with an initial chief complaint of severe abdominal pain and an initial clinical impression of gall stones. As diagnostic testing ensued, the final concluding impression was that of bowel impaction, which once cleared alleviated his signs and symptoms.

_____ current functional health status and abilities are as follows:

- Alert, well-oriented, shows high intelligence and cognitive function
- Speaks and converses with others, understood when speaks slowly
- Impaired ROM at joints such as ankles, knees, hips, shoulders
- Dependent for ADL's, i.e. shaving, dressing, bathing, meals, etc.
- Requires assistance with basic transfers from bed to wheelchair and from wheelchair to commode
- Unable to ambulate with or without assistive device
- Demonstrates ataxic and uncoordinated movements in the trunk and extremities
- Use of PEG tube for providing nutritional needs, progressing to puree/thickened food
- Unable to propel manual wheelchair for lengthy distances or on uneven terrain, able to propel inside short distances
- At risk for pressure sores, bone strength loss, continued UTI and bowel problems
- Reduced respiratory and cardiovascular function

In an effort to improve and optimize the quality of _____ health and reduce the risk and occurrence of further medical illness and complications, the Superstand Standing Wheelchair is recommended. As its name obviously denotes, the wheelchair is unique from others in that it has the ability to move from the seated position to the standing position. The patient can change the position frequently or as often as he/she would need, desire, or tolerate. It is recommended that the position be changed often throughout the day. The patient can gradually increase the time in the standing position. The ability to (independently) move from the seated to the standing position, frequently and intermittently over the course of the day, is of unique and superior benefit compared to a fully seated position and/or the infrequent, brief periods of partial standing during basic assisted transfers from bed to wheelchair, and wheelchair to commode.

Critical information on standing benefits

The benefits of standing allowing weight bearing through the axial skeleton and the lower extremities are multiple and well documented. These benefits include, but are not limited to the following:

- Improved joint alignment and range of motion
- Improved/Promotion of bone strength
- Lessen muscle spasms and contractures
- Stretch hamstrings and heel cords
- Improved circulation
- Reduced focal pressure over the gluteal and lumbosacral areas

- Improved cardiopulmonary function
- Improved bowel and bladder function
- Facilitation of improved psychological health
- Aide in independence of daily living

Specifics regarding the above benefits are noted below. However, the reader is encouraged to consult the medical literature and resources that are included with this letter.

Musculoskeletal System- With regard to bone strength and calcium levels standing for lengthened periods of time and/or frequently each day has been shown to reverse the increased calcium excretion (loss of calcium) caused by immobilization. It has also been shown that neither sitting nor exercising while seated was able to reverse the increased calcium excretion of immobilization. Thus, it has been concluded that it is the gravitational stress acting along the long axis of the bones that affects the calcium metabolism of bone.

In a review of medical research and of NASA literature, the act of weight bearing or exercises designed to simulate weight bearing were found to be the most useful therapy for the prevention of immobilization osteoporosis. Studies have also demonstrated the effect of immobilization on bone mineral content and have found that the mineral loss was greatest in the weight bearing bones of the skeleton. Yet, this mineral loss was found to be reversible with weight bearing.

With regard to spasticity and abnormally increased resting muscle tone, research has found positive effects of standing and weight bearing through the feet of individuals having long-term paraplegia. Specifically, in a study by Odeen and Knutson a 26-32% reduction of spasticity was demonstrated. Other studies have show reduced H-Reflex following periods of weight bearing through standing. As spasticity is reduced and tone is improved, the ability to move joints through their normal range is also facilitated and improved.

In order to improve the available ROM at a joint, the soft tissues must be able to lengthen and shorten to adjust to the changing range. In the healthy individual, this changing of tissue length will happen via normal gross motor movements. Yet, in _____ situation, the poor functional strength and lack of ability to stand and walk impede his ability to maintain optimal ROM and soft tissue length. In order to obtain a permanent change in the length of soft tissue structures such as muscle, tendon, ligament, three main characteristics/qualities must be present: force, time and positioning. This is often referred to in the medical literature as the Visco-Elastic-Plastic Curve. We know that the longer a soft tissue is positioned into a specific length, the more permanent the change of length will be. With immobilization, this has a negative effect, i.e. with an individual seated predominately in a wheelchair the softer tissues on the anterior (front) aspect of the hips and the posterior (back) aspect of the knees and ankles will shorten and actually lose sarcomeres (the subunits of the muscular tissue) within the muscles.

The position of standing addresses the aspects of force, time and positioning as noted above. The characteristic of force is addressed via the body weight through the lower extremities in the standing position. The characteristic of positioning is addressed through the presence of foot plates/rests, tibial pads, and the actual standing position. Finally, the characteristic of time is addressed through gradually increasing time in the standing position in addition to the ability to easily and frequently assume the standing position throughout the day.

Renal System- The health status of the renal and urinary tract is also improved with standing. It has been documented in the medical literature that the hypercalcuria

(increased calcium excretion) associated with immobilization or continuous seated position is due to the reduced axial weight bearing and loading on the long bones of the skeletal system. This in turn causes loss of increased levels of bone calcium which is then passed through the kidneys and bladder. The increased calcium excreted leads to stones or calculi and promotes the presence of urinary tract infections. Authors and researchers have shown reduced incidence of UTI's in those individuals who stand and ambulate versus those who do not.

Digestive/Gastrointestinal System- The position of being upright has been stated to improve gastrointestinal activity, i.e. Improved mobility and secretory function. This improved function reduces constipation and the vulnerability for fecal impaction and serious intestinal dysfunction. The upright position also aids swallowing function and reduces the risk of choking and aspiration.

Integumentary System (skin)- Another system positively impacted by the position of standing is the skin. For those individuals who are unable to change their body position easily or independently, there is increased risk for reduced circulation at areas of sustained pressure, i.e. the ischial tuberosities of the buttocks and lumbosacral spine. The sequel of this can lead to the development of skin breakdown and pressure sores. The ability to alleviate pressure over a focused area by changing positions has been shown to significantly prevent the development of skin breakdown and pressure sores. The Superstand Standing Wheelchair allows the patient to shift the pressure off the ischial tuberosities and sacrum to the long bones of the legs.

Cardio Palmonary System- Cardiopulmonary function is also positively affected by standing upright. The upright position allows for greater range of motion and motion excursion at the costovertebral and sternocostal joints of the rib cage, thus allowing for greater available chest/thoracic room and lung expansion. The ability to produce a forceful cough is also enhanced in the more upright position. With the immobilized individual, the cough mechanism is diminished and there is decreased strength of the respiratory musculature which adversely affects respiratory function and efficiency. The latter causes the individual to be more susceptible to pneumonia.

Psychological Effects- When serious illness occurs it dramatically erodes the personality of the individual because it prevents many behaviors that have characterized the individual and which have provided self-esteem and a sense of having control over one's life. The result of this loss of perceived effectiveness is depression. It is well established that clinical depression suppresses the human immune system and has a deleterious effect on many bodily functions. Having opportunities that only this Superstand Standing Wheelchair can provide to a person will contribute dramatically to their emotional well-being, alleviate depression and thus bolster physical health, and provide the encouragement and motivation to continue to strive to fight their disease.

The Superstand Standing Wheelchair- The information outlined above notes the many benefits of standing and the multiple positive impacts on the various systems of the body. Being mindful of this and of the current medical status of the patient _____ the Superstand Standing Wheelchair is strongly recommended as a device that would positively address any of the current health concerns for him. This standing wheelchair would have the foremost feature of being able to move from the sitting to the standing position as often as needed or desired. Changing the position would be under the control of the patient, but could be performed by a family member or health care worker if needed.

Features of the wheelchair which are important to note for _____ are as follows:

- Power mobility
- Sit-to-stand seatlife feature
- 17 X 17 seating
- Roho Low Profile cushion
- Jay 2 back
- Auto style seat belt
- Safety anti-tips
- Fold down footplates
- Flip back armrests

In conclusion, it is the recommendation of this clinician that the Superstand Standing Wheelchair be approved for _____. _____ has the cognitive and current upper extremity ability to utilize this chair to enhance his physical health and quality of life. It is important to note that the physical assistance of family members and caregivers would greatly decrease which is a plus for them also. Finally, The Standing Company has demonstrated the ability to stand with ease and safety in the Superstand Standing Wheelchair.

Physician Signature

Date