

**EasyStand Glider – Medium/Youth
Sample Letter of Medical Necessity/Justification**

November 00, 2010

Client: D.L.
DOB:00.00.00
Ht: Wt:
Diagnosis: Quadriplegia

To Whom It May Concern:

History: D.L. is a 7-year-old with a diagnosis of quadriplegia. Due to an unknown cause, he has a gap in his spinal cord from C5 to T1. He is incontinent of bowel and bladder. His hearing and vision are both intact.

D.L. has decreased trunk strength. Without trunk support, he is unable to sit. He can actively move his upper extremities. He has no active movement of his lower extremities. Bilaterally, he has ankle clonus and Ashworth 1-2 spasticity. Currently, D.L. does not have any spinal or pelvic deformities. His lower extremity passive motion is within normal limits.

Standing has been shown to delay the appearance of contractures and improve those that already exist (1). Because he lacks the strength to stand, the standing frame will help to keep him in a good position to stretch these muscles for extended periods. This stretch will maintain and improve his lower extremity range of motion.

D.L. has spasticity throughout his lower extremities. Standing has been shown to decrease spasticity (2). Decreasing his spasticity will assist in maintaining range of motion and improving his overall level of function.

Children without disabilities stand between 8-10 months of age. This standing helps with the forming of the acetabulum (3). It is very important in children with disabilities to get them standing at a young age. Because of D.L.'s diagnosis and his spasticity, he is already at increased risk of developing hip subluxation as he grows. Standing will increase the depth of his acetabulum and decrease his risk of subluxation.

D.L. will benefit from a standing frame that can position him properly in standing. Standing also facilitates better emptying of his bladder, which can decrease his risk of developing urinary tract infections (4)

D.L. is at increased risk of developing osteoporosis due his inability to stand independently (5, 6). Gudjonsdottir, and Mercer studied the effects of dynamic versus static standing on bone mineral density in children with cerebral palsy. All subjects were non-ambulatory. Half the subjects underwent dynamic standing, the other half static standing. All but one of the subjects showed an increase in bone mineral density in the lumbar spine, proximal femur and distal femur (7). Additionally, Goemaere et al.⁹ compared SCI individuals who conducted standing 1 hour, 3 times per week with those that did not. It was found that bone mineral densities were significantly higher in the long leg bones of the standing group (8).

This standing frame will allow D.L. to bear weight through his lower extremities. Because it is easy to move the frame from a seated to a standing position and it is a dynamic stander, his parents will be able to change his position frequently. Lanyon and Rubin compared static versus dynamic loads and their influence on bone remodeling in animal models (9). They found that static loads did not have an effect on remodeling where as a similar load that was applied intermittently in a dynamic manner was associated with a substantial increase in bone

mass. The dynamically loaded group instead of bone loss demonstrated a mean increase in bone cross-sectional area.

Kawashima, Nakazawa, and Akai performed a study to see if passive leg movement in standing was sufficient to improve the oxygenation of lower limb muscles in populations with SCI (10). They compared SCI patients to neurologically normal controls. Passive movements were performed at different frequencies for 3 minutes each and then EMG activity and oxy and deoxy hemoglobin were measured. They discovered that passive leg movements did induce not only EMG activities but also an increased oxygen perfusion to the muscle in SCI populations whereas the controls showed no changes. This study demonstrates a significant benefit to individuals like D.L. for dynamic standing.

With the Glider, he will get dynamic loading of his bones rather than just static loading. Research has shown that more dynamic weight bearing results in less of a loss in bone mineral density (11). This will provide him with the maximal benefits from standing.

The other benefits of standing are well established. In addition maintaining his lower extremity range of motion, which is important for him, a standing frame has many benefits. Standing has been shown to improve circulatory, gastrointestinal, bowel and bladder, and respiratory functions (3,4). Walter et al. sent questionnaires to individuals with SCI who had purchased standing frames from two different companies (12). The data was analyzed for perceived benefits. These included improved quality of life, decreased urinary tract infections, and decreased spasticity among others. Those that stood greater than half an hour per day and a statistically significant improvement in secondary complication rates. They also quoted a study by Warren et al. that showed that compliance for standing with frames or tilt tables is greater than compliance for standing with KAFO's in the home environment.

D.L. cannot move himself independently to shift his weight. This puts him at an increased risk of developing decubitus ulcers (4). People who stand for at least 30 minutes a day have less pressure sores than those who do not stand (12).

Current Program and Standers Considered:

At this time, D.L. has an EasyStand Magician stander. He uses the stander daily. Because of the good trunk support, he uses it while he works on different reaching activities, such as turning pages in books and playing with toys.

His mother transfers him independently at home and she continues to need a standing frame that can be operated by only one person. It would be unsafe and impractical to try to lift and position him into a prone or supine standing frame.

D.L. has outgrown this stander. Without a new stander, he will not be able to continue his standing program. As a sit-to-stand stander remains the most appropriate type of stander for him, this is the least costly and most medically appropriate device to allow him to continue to stand and to get the most medical benefits from standing.

Equipment Trial

EasyStand Evolv Glider: D.L. used this unit on numerous trial occasions with excellent results. Video can be provided if necessary. His mother was able to set up the system and complete transfer and positioning help as needed.

Recommended Equipment: D.L. is currently at the shortest height range for the recommended stander once the conversion is made so he has maximal growth capability with this stander and it will last him a longer amount of time.

Standing challenges the cardiovascular system by requiring the heart to pump the blood flow against gravity in an upright position. The EasyStand Evolv Glider also provides an upper

body strengthening that D.L. is able to complete while he is standing further conditioning the cardiovascular system. The increase in cardiovascular function further decreases skin breakdown risk due to increased oxygenation to the tissues.

As discussed above, D.L. is at high risk for long term osteoporosis due to lack of weight bearing and muscle stress on long bones. The increase in calcium can contribute to renal stones, which can lead to significant debilitation and increased cost of care. Normalizing weight bearing and stress on the long bones as provided by the Glider may assist in reducing these medical complications.

After a full examination by the rehabilitation team and D.L.'s family, the following equipment is deemed medically necessary:

1. **EasyStand Evolv Glider (Medium/Youth)** that comes standard with includes chest pad, glide handles, adjustable resistance cylinders, flip-up kneepads, and adjustable footplates.

Additional options necessary to maximize D.L.'s function:

1. **Quad Grip Handle Extension:** Given D.L.'s decreased ability to grip the actuator to raise or lower himself, this grip extension is necessary so that he can hold onto the actuator. Without this, he will not be able to hold the actuator and he will be completely dependent to raise or lower the system.
2. **Secure Foot Straps:** With D.L.'s spasticity, it is difficult to keep his feet positioned properly. The foot straps will assure that his feet stay on the footplates so that he gets the necessary benefits of standing. With the glider feature, it is especially important that his feet remain properly positioned to prevent injury from falling out of the system.
3. **Hip Supports-Medium:** With D.L.'s decreased trunk control, he needs lateral hip support to maintain upright standing in the stander. These will work with the lateral supports to properly position him and allow him to remain in the stander for extended times.
4. **Glide Handle Extensions:** Given D.L.'s height and size, he requires the extension so he can reach the handles to use the glider function on the stander. Without these, he will not be able to use the dynamic feature of the stander.
5. **Contoured Back 19":** This is the contoured back support is similar to the contoured back on his wheelchair. It is needed to provide him with the necessary postural support. Without this option, he will have no support behind his back, which will make using the stander unsafe and impossible for him.
6. **Velcro Positioning Belt:** This basic positioning belt will keep him properly positioned in the stander. This is an important safety device. Without it, he will be at increased risk of falling out of the stander.
7. **Lateral Supports 9"-15" W:** With D.L.'s decreased trunk control, he needs lateral trunk support to maintain upright standing in the stander. These will work with the hip supports to properly position him and allow him to remain in the stander for extended times. With the glider, he especially needs the trunk supports to prevent him from falling out as he moves his upper extremities.

Thank you for your assistance in maximizing D.L.'s function.

Sincerely,

_____ PT _____

_____ Physician _____

References

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