



Upsee

Sample Letter of Medical Necessity

Portable assisted
Mobility device



Every child is unique, and every child is assessed individually to see which products are required to meet their specific individual needs. Health care providers will make the ultimate decision on which products are appropriate for an individual, based on their clinical judgement, and the funding applications will take these individual requirements into account. Firefly cannot guarantee the success in obtaining insurance funding.



Sample Letter of Medical Necessity

Please note – for sections highlighted in blue, please replace with details specific to the child’s presentation and clinical need. The text provided is for example purposes only.

Introduce yourself, highlight your relationship with the client and describe the product for which you are seeking funding.

As Jane Doe’s therapist, I am requesting insurance funding for a Firefly Upsee. This DME device has been prescribed by Jane’s physician and is a medical necessity which would not be used in the absence of disability, illness or injury. It is essential for performing Mobility related activities of daily living (MRADL), such as standing and walking, to stretch and strengthen muscles thereby promoting neurological and musculoskeletal development. The following explains the medical justification.

Explain the child’s diagnosis and disability. *(Include ability to stand, sit, walk or transfer, and limitations in control of trunk, head or limbs resulting from the condition, diagnosis or injury.)*

Jane is a X year old boy/girl who has been diagnosed with XX. She has difficulty standing, walking and needs additional trunk support in most activities of daily living. She also has limited head, upper limb and lower limb control. Jane’s medical condition is such that she does not experience the movement necessary to stimulate muscle and bone growth. This is detrimental to her long-term development and physiological function.

Jane’s requirement for constant postural support makes it difficult for her to participate in many activities, and causes her to miss out on events that family and friends partake in. Other upright mobility equipment such as walkers and gait trainers, being mechanical in nature, are wider and longer, and make indoor environments inaccessible. These wheeled devices require smooth, flat surfaces; meaning gardens, playparks, and anywhere with a step are inaccessible.

It is physically difficult for Jane’s carers to support her during various activities, and unsustainable for any duration, so she is frequently left to watch from her wheelchair while others take part.

Discuss the impact of the child’s diagnosis on their life. What will the implications be without Upsee?

Physiological benefits: Jane is unable to walk or stand independently. The benefits of standing are well established and include an increase in bone mineral density, decrease in spasticity, improved range of movement, improved bladder and bowel function and increased pressure relief (Glickman, 2010). Moreover, a systematic review on the benefits of a gait trainer for children with motor impairments revealed a range of other positive trends including: increased walking distance, increased number of steps, improved mobility, improved bowel function, improved bone mineral density and improved motivation and participation (Paleg



and Livingstone, 2015). A strong correlation between lack of upright movement and incidence of hip displacement has been shown, with up to 90% of the least active children experiencing hip displacement (Soo et al, 2006). Unfortunately, hip displacement is associated with pain, spinal deformity and surgery and hence reduction through increased activity is a major focus for all health care professionals.

Jane is in a standing and walking program with her therapist. However, such equipment is heavy and difficult to transport from therapy setting to typical child-friendly places, such as; in the garden, at the park off the path or at relatives' houses so usage is restricted to specific therapy settings like purpose-built schools. The Upsee would enable Jane to practice standing and upright movement in regularly in almost any setting.

What are the specific clinical benefits of using Upsee for the child in question? *(Focus on their gait, what makes it challenging and how Upsee can help.)*

Facilitated movement: Jane has difficulty moving in a co-ordinated rhythmic pattern. Although other gait trainers can keep her upright, they do not enable a carer to assist with the hands-on synchronised movement patterns which therapists employ to facilitate co-ordinated movement. The Upsee is unique in enabling a carer to use their body to guide the child's legs and trunk in a smooth reciprocal pattern. This is crucially important to help the initiation, organisation, and grading of movement. The double sandal permits the carer to guide the foot placement, controlling for internal or external rotation at the hip, knee or ankle to regulate challenging gait patterns such as scissoring. This 'double walking' means that gait programs set by the therapist can be executed by the carer at home where dosage can be increased to daily therapy.

MAP program: Walking can be enhanced by following the accompanying Upsee MAP (Mobility, Ability, Participation) program which steers the carer through a range of stimulating activities which gradually increase in duration, skill and complexity. The MAP can also be used to focus on different body parts and thus muscle groups, encouraging safe and purposeful exertion, something which children with complex disabilities do not experience enough off (Verschuren, 2016).

Repeated exercise consolidates motor tasks into muscle memory patterns which can be embedded and strengthened through repetition. This is evidenced by a recent published case study on a child who used the Upsee repeatedly over a 24-week period. The child showed increased step length, heel strike and gait velocity, decreased knee hyperextension, scissoring, in-toeing and delays in swing initiation and an overall significant improvement in her gross motor control (Fergus, 2017).

Fine motor development: Many gait trainers require a child to use their hands to support themselves and/or guide the device making it difficult to interact with toys and therapy aids in their environment. The Upsee is unique in not just being hands-free but having a carer close by to guide movements and practise fine motor skills such as opening buttons or using utensils, as well as gross motor activities such as hitting a tennis ball. Hands-free is particularly important for Jane to learn the diagonal and spiral patterning of gait (right arm/left leg and vice versa).

Variety of movement: In addition, other gait training equipment only support children in one position – fully upright. They do not allow the child to practice the full repertoire of normal everyday movements which are important for balanced musculoskeletal development e.g.



flexing at the waist to reach forward or pick something from the floor, twisting to the side, squatting down and extending up, ascending or descending a single step. These movements increase the number of muscles which are strengthened, the number of joints and bones which are loaded and the range of movement through which the muscles and joints move. All add up to increased musculoskeletal benefit.

Describe the device requirements and safety factors for children with complex needs.

There are major challenges involved in finding a portable and safe device which supports upright movement. The device needs to have trunk, hip and leg support to compensate for weak muscles and mitigate the risk from uncontrolled movements. It needs to be made from breathable materials that will not cause irritation to the skin. The upper limbs and head should be able to move freely, to allow the child to interact with others in therapy and social activities – this can lead to improvements in fine motor skills and head control as well as being good for their cognitive development. The system must be light and fully portable so that it can be used outside the home setting. This widens the variety and effectiveness of the therapy program.

Insurance funding is requested for the Upsee as it is the only portable medical device which will meet all the above needs.

Describe the equipment and accessories being requested. (Include details on adjustments for growth.)

The Upsee is a lightweight, compact, portable mobility device designed to allow children to partake in an unsurpassed range of activities including stepping, squatting, standing and walking, as well as participating in other activities such as dancing, sport or at the beach. It is designed and manufactured as durable medical equipment and is a registered medical device.

- The Upsee is available in 4 sizes to accommodate children aged approximately 1-8 years, with a max user weight of 55 lbs. It consists of 3 main component parts: the adult hip belt, the child harness and the shared sandals.
- The trunk is at the core of all movement and the Upsee harness is designed to give the child's trunk a deep wraparound support to improve head, upper and lower limb control.
- The Upsee facilitates gradual weight bearing, through a wide range of natural movements: from swaying to side-stepping, forward and back rocking, stepping and stair climbing, allowing Jane to exercise and strengthen all muscle groups.
- Through the double sandals the adult is able to initiate reciprocal lower limb movement and guide the child's foot placement to improve stepping patterns and gait.
- The Upsee is extremely lightweight (weighing just 4 lbs). It is small, compact and easily packed up and transported enabling therapy to take place in almost any setting.
- As a latex free product, the Upsee will not harm or be detrimental to a sensitive child's skin, keeping them safe and comfortable throughout the lifetime of the product.
- The therapist or carer can set goals in a highly sensory environment, such as at water/

sand tables or out in the garden. This has been shown to increase compliance and effectiveness.

- The Upsee can be adapted as **Jane's** abilities develop such as removing the double sandals when foot positioning improves, loosening the shoulder straps as head and trunk control progress or removing the groin straps when weight bearing is secure.

Regular use of the Upsee will improve muscle strength, endurance and control - the pre-cursors to independent gait.

Describe the Firefly Upsee components being requested. *(Delete components as appropriate.)*

Item	Description of Medical Necessity
<p>Adult hip belt</p> 	<p>The belt goes around the hips of the adult and attaches to the child harness. This is essential to support the child in an upright position.</p>
<p>Child harness</p> 	<p>The child harness gives full wrap-around trunk support from the shoulder through to the groin. Supporting the core improves both head control and upper and lower limb movements and is particularly helpful for children with weak abdominal muscles.</p>
<p>Double sandals</p> 	<p>The Upsee double sandals are worn by adult and child simultaneously and ensure the adult can guide the child's movements in a controlled reciprocal stepping pattern.</p>



Discuss the psychological benefits of using Upsee for the child.

The Firefly Upsee motivates children to move and participate more than other gait devices. In a study of the Upsee by Mitson et al (2016), 80% of the comments made by parents were positive regarding access to the environment, activity and participation. In a further study by Issac (2018), all parents fed back that their child had an opportunity to engage in social activities and explore with their hands with this having a significant positive knock-on effect in improving receptive cognition, receptive language, fine motor and gross motor skills compared to the control group.

As well as conventional physiotherapy and occupational therapy, the Upsee will enable Jane to partake in a wide range of extracurricular activities with her peers such as dance classes, soccer and attending summer camps. Unlike other gait trainers where she is restricted by the mechanical frame, in the Upsee Jane will have her hands free to truly participate in rather than simply be present at these activities. Simple activities like helping her parents sweep the floor (Ardolino et al, 2017) will change Jane's role from a passive bystander to active participant. Research has shown that active participation has massive psychological benefits in how she perceives herself and how others perceive and interact with her (Casey et al, 2016).

The correlation between physical development and emotional wellbeing is well established (Hoare et al, 2016) and has been shown to positively affect mental wellbeing. The Upsee is unique in offering this individualised support, often perceived as a supportive dance between adult and child.

Discuss the cost of alternative products, reiterating the benefits of the Upsee.

(Describe how other potential therapy methods/equipment which have been considered are not adequate. Include specific details e.g. the make and model of less expensive items and the reasons they have been rejected.)

There is no alternative device which will provide the portability and variety of movement as an Upsee. No alternative device supports the same guided range of movements. Expensive surgeries and increased medical intervention will be avoided as the Upsee will assist in maintaining functional skills and musculoskeletal health.

Summary/conclusion.

- This Upsee is essential to Jane's physical and mental wellbeing, enabling her to experience the benefits of standing and walking therapy, inside and outside the home.
- Unlike a typical gait trainer, the Upsee enables Jane to partake in a wide range of other natural movements which are the building blocks to independent walking. This makes it an extremely useful adjunct to her current therapy program.
- The close hands-free, adult-child design enables active assisted movements which will enable Jane to develop her fine motor skills alongside her gross motor movements.
- The Upsee has multiple sizes and will provide support to Jane as she grows up until approximately 8 years (max weight 55 lbs.)
- The lightweight, compact and portable design of the Upsee means that Jane can benefit from standing or walking therapy every day, everywhere.

References

1. Glickman L, Geigle P and Paleg G (2010). A systematic review of supported standing programs. *Journal of Pediatric rehabilitation medicine*. 3. 197-213.
2. Outcomes of Gait trainer use in home and school settings for children with motor impairments: a systematic review. Paleg G, Livingstone R. *Clinical Rehabilitation* 2015; 29(11)1077-1091.
3. Soo B, Howard J, MD, Boyd RN, Reid SM, Lanigan A, Wolfe RN, Reddiough D, Graham HK. Hip Displacement in Cerebral Palsy, *Journal of Bone and Joint Surgery- J. Bone Joint Surgery* 88-A ·1 Jan 2006
4. Verschuren O, Peterson MD, Balemans ACJ, Hurvitz EA. Exercise and Physical Activity Recommendations for People with Cerebral Palsy. *Dev Med Child Neurol*. 2016 August; 58(8): 798-808
5. Mitson C, Walk-Ley M, Wallace A, Conigliaro C (2016). 'Feasibility of the 'Upsee' as a new community mobility device and its impact on gross motor function in young children with Cerebral Palsy (Gross Motor Function Classification System level II- IV)'. *APCP Journal*. 7(1): 33-45.
6. Fergus A. (2017). 'A Novel Mobility Device to Improve Walking for a Child with Cerebral Palsy'. *Pediatric Physical Therapy*. 29: E1-E7.
7. Barría P, Tapia E, Andrade A, Bandera A, Moris, A, Henriquez H. (2017). 'Gait Exercise Program with a Low-Tech Device for Children with Severe Cerebral Palsy: Physiologic and Neuromotor Effects'. *Converging Clinical and Engineering Research on Neurorehabilitation II* (pp. 1311-1316). Springer, Cham.
8. Meyer D, Angeli J, Kiefer M, Garcia M, Long J (2018). 'A biomechanical analysis of loading patterns in children with cerebral palsy using the Upsee'. *Developmental Medicine and Child Neurology*. 60: S3
9. Issac, D. 2018. 'Investigation into the Effect of the UPSEE on the Cognitive, Social and Physical Development of Young Children with Down syndrome.' *Masters in Physiotherapy*. Institute of Technology, Tralee, County Kerry, Ireland.
10. Casey AF, Pickard V, Ullrich C, MacNeil Z. (2017). 'An adapted walking intervention for a child with Pitt Hopkins syndrome'. *Disability and Rehabilitation: Assistive Technology*. 13(1) p 25-30.
11. Ardolino E, Flores M, Manella K. (2017) 'Gross Motor Outcomes After Dynamic Weight-Bearing in 2 Children with Trunk Hypotonia: A Case Series'. *Pediatric Physical Therapy*. 29:360-364.
12. Hoare, E., Milton, K., Foster, C. et al. The associations between sedentary behaviour and mental health among adolescents: a systematic review. *Int J Behav Nutr Phys Act* 13, 108 (2016)



Firefly Friends Ltd
19c Ballinderry Road
Lisburn BT28 2SA
Northern Ireland

(+44) 28 9267 8879
hello@fireflyfriends.com