

# BALANCE TRAINER®

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**TOGETHER FOR A LIFE IN MOTION**

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Balancetrainer in the early stage rehabilitation of the clinic for neurology of the  
Knappschaftskrankenhaus Recklinghausen

Dear Mr Mack,

We have been using your Balancetrainer with patients very successfully for a few weeks now.

The exerciser was mainly used in our department for early stage rehabilitation/neurology.

Since we already have the standing trainer Campus, we were able to draw the comparison between the two exercisers regarding advantages and disadvantages. Unlike the stable standing trainer where the patient stands in a more static way the Balancetrainer offers the patient the opportunity to shift his weight actively. While standing startle reflexes of the trunk could be facilitated a lot easier. The active training has a high influence on the reciprocal innervation of the sternum (e.g. ataxias of MS-Patients and following cerebellum infarcts).

Especially the economical component for the exerciser deserves to be taken into account.

Especially if the patient ought to work against resistance or if you are facilitating startle reflexes the therapist will be noticeably relieved. Furthermore the therapist does not have to fix the patient during the weight shift and therefore can use both his hands optimally for the therapy.

Conclusion:

During the stay at the hospital activities of daily living can be accomplished a lot easier as the mobility is increased by the Balancetrainer. From our point of view including the exerciser in the German list of technical aids is very important as there is no comparable device with a similar therapeutical use in the early stage rehabilitation.

Experience Report with the BALANCE-TRAINER in the BG Unfallklinik Frankfurt am Main, Department for spinal injury patients – K8

In the whole Rhine-Main area the Berufsgenossenschaftliche Unfallklinik Frankfurt is the only center for spinal injury patients. It comprises 25 beds which are occupied by both recently injured patients and patients whose spinal injuries occurred already a while ago and who have complications like decubitus ulcers, contractures or infections.

Since July 2004 the Unfallklinik Frankfurt has had the opportunity to test a BALANCE-Trainer by medica in the clinical daily life.

All of our patients in the spinal cord department complete a one-hour standing training if there are no contraindications on hand.

Among other things capable patients are put into a free standing bar.

The aim of this exercise is:

- Circulation training
- Contracture and thrombosis prophylaxis
- Decreasing spasticity

The new BALANCE-Trainer integrates all these positive effects of a free standing bar with those of a balancetrainer. Due to its stable stand (in spite of the transport rollers) the BALANCE-Trainer also allows paraplegia patients with a high lesion height to perform a stability training while standing. The transfer from the wheelchair to the standing position is accomplished by an electrical strap system which proved to be very safe.

We observed that the contracture prophylaxis is even more effective with the movement of the BALANCE-Trainer. The trunk activity above the lesion height of the patient is stipulated and ameliorated by a lot.

The movement also improves the metabolic processes, bladder and bowel function and the function of the lung.

Patients who never paid attention to plenty of movement in their lives also benefit from BALANCE-Trainer because they get to know their body better. The startle reflex of the head is improved.

Last but not least the patients are enthusiastic about exercising with the new BALANCE-Trainer and therefore are highly motivated.

12. August 2004

Therapeutical benefit of the Balancetrainer by medica

Dear Sir or Madam,

We are a hospital having a neurological and a internistic department and all in all we are in the possession of 154 beds. The main emphasis of our neurological department lies in multiple sclerosis and stroke patients. Part of our institute is also a stroke unit.

For purposes of testing a Balancetrainer including the following accessories was placed at our disposal for a few weeks:

- Manual strap system
- Strap for the patient
- Hip pads
- Knee pads

Contrary to other current models of standing desks on the market in which the patient stands statically and does not alter his position the Balancetrainer offers the possibility to shift his weight. Thereby occurring balance reflexes build up the musculature of trunk and legs in particular.

Many patients are afraid of shifting their weight and falling when standing without support and practicing weight shifts. When exercising with the Balancetrainer, however, the patients are not frightened since the device stands stable and the patients also perceive it this way. This way the patients are animated to execute a much larger movement radius as they would if standing without any support at all. Thus their sense of balance while standing is improved.

Even patients who are able to walk can ameliorate their skills and walk more safely after exercising with the Balancetrainer and patients who cannot walk anymore but are able to stand without support show better balance reactions and are less endangered to fall.

After a few minutes our brain does not perceive a stimulus anymore, if it does not vary but stays always the same. This mechanism is called "fading out". Thus after standing in a standing desk for a short time our brain does not recognize the provided stimulus directly any more and therefore is not able to build any new synapses. The constant change of position and weight shifts which you experience when exercising with the Balancetrainer do not reduce the threshold but lead to a permanent new input for the brain which in turn leads to a multiplication of synapses.

For the care of patients in the ambulatory domestic sector the device presents an enormous facilitation since the therapist can work on the standing skills of patients who are not able to stand just supported by the therapist. At the same time balance reflexes are improved and thereby the mobility of patients at home is influenced positively particularly for activities of daily life.

Another reason for the domestic use is the possibility to use the Balancetrainer on your own and thereby for a daily muscular training. This way the phases without therapy in between the physiotherapeutic training sessions are minimized.

Indications which make the Balancetrainer an essential part of the physiotherapy are: every patient with impaired balance while standing and walking that often appears in connection with stroke, MS, Parkinson's disease and muscular diseases.

Paraplegia patients are also able to perform muscular training while standing. This exceeds the usual prophylaxis of a standing desk by far.

Geriatric patients having problems with standing and walking also benefit enormously by the device.

Contraindications are existent if the patient has strong contractures so he is not able to achieve a standing position at all or if the patient has tender spots in the ventral part of the knees. Patients who were confined to bed for a longer period of time present another contraindication since their circulatory system has to be stimulated first. An abrupt mobilisation into the standing position could lead to orthostatic problems.

In our opinion accepting the Balancetrainer to the list of technical aids is a crucial step since there is no comparable device on the market that would provide these therapeutical possibilities and that would show assimilable results.

30. Juli 2004

Verification of the therapeutical use of the Balancetrainer by Medica Medizintechnik, Hochdorf.

The Neurological Clinic Hilchenbach is in charge of 210 beds. The clinic specializes in the treatment of patients with the following disease patterns: disseminated encephalomyelitis, the time after ischemic seizures, Parkinson's disease, craniocerebral injury, transverse spinal cord syndrome, Guillain-Barré syndrome, polyneuropathy, myodystrophia, and diseases of the spine like e.g. after operations of a herniated disc.

The Balance-Trainer that we were able to test featured the following accessories: mechanical strap system, strap for the patient, knee pads, and hip pads. We have been testing the device since March 1<sup>st</sup>, 2004.

The Balance-Trainer was tested with patients who suffered from disseminated encephalomyelitis and the time after ischemic seizures.

Especially scary patients had a safe optical impression from the very beginning on. Even more important they felt safe if they stood in the device. This encouraged the patients additionally to use all their possibilities of activity. Particularly apparent was the fact that the patients were not afraid to fall anymore.

The training and the therapy with the Balance-Trainer had extremely good effects. This way various movements were optimized. Due to the physiological correct posture which can be achieved with this device the proprioception and the balance sense was emended. Weight shifts were performed by our patients in a remarkably good way since they felt safe and knew they were not able to fall. Exactly this safety of the Balance-Trainer allows the therapists to work with the patients much more efficiently as they are supported safely by the device. This constitutes a good foundation for the patients to keep the therapy successes or to improve or enhance them once they are practicing self-dependently at home as well as here in the clinic. The motivation of the patients in this device was extraordinarily high.

The treatment of patients with Balance-Trainer showed positive effects on the balance reactions while standing and while walking, both the standing leg and the non-supporting leg phases were ameliorated and an improved weight shifting was diagnosed.

Even patients who were not able to walk anymore showed an improved activity in the area of the abdominal muscles, the gluteal muscles and the back muscles. The patients experienced a perceptible reduction of spasticity of all the muscles of the lower limbs. The physiological standing in general and the uniform pressure distribution on the bottom side of the feet the body perception and the startle reflexes of the head improved.

The positive influences with regard to circulation stimulation, contracture prophylaxis, and bladder and bowel function are improved substantially by the possible movements while standing. It can be assumed that the osteoporosis prophylaxis is also improved exactly because of these movement possibilities while standing.

Using the Balance-Trainer is particularly good for patients with the so called “pusher syndrome”. Standing itself is one of the only possibilities to retrieve their body center. Although with some of our “pusher” patients you are actually not able to practice standing for safety reasons, the Balance-Trainer allowed it in a very safe way.

The Balance-Trainer could be used by our wheelchair patients without any problems. The device is wide enough in between the two beams to allow access even with broader seats. Using the four caster wheels you were able to align the device in the direction of the wheelchair easily.

The actuators (strap system, balance) can be reached by the patients without any problems. We encountered no dangerous situations during our trial. We did not detect any potentially hazardous parts at the device.

From our point of view the Balance-Trainer is a technical aid that will be very useful especially in the domestic area since it provides a stable stand and it is very safe for the patient while standing or balancing and therefore it is very capable of keeping or even improving the particular therapy success.

In connection with the ambulant physiotherapy the Balance-Trainer offers a much more efficient way of working as the patients are supported safely by the device and thus allow a more active training while standing and while moving.

The configuration of the Balance-Trainer was very suitable for our patients. It can be adjusted individually in all concerns. The big adjustment range for the body height and the possible abduction adjustments of the knee pads in particular are a great advantage over all the other standing trainers that we use in our clinic.

As a result of our experiences and the positive feedback by our patients we think the Balance-Trainer is at any rate commendable and suggest that the device is accepted to the list of technical aids.