

## Therapy Information

### Lokomat® Training for Multiple Sclerosis (MS)

(Also known as encephalomyelitis disseminata)

Multiple sclerosis (MS) is a disease of the central nervous system (CNS). Where it is present, inflammatory plaques attack mainly the white matter (the myelin layer) of the nerve fibers. MS is a multi-faceted illness, and its symptoms depend on what areas of the CNS are affected by the disease process. Therefore, there is no fixed pattern of MS symptoms. The symptoms vary over time; they can be very different in their severity and duration in any individual patient.

The following symptoms are the most common:

- Fatigue (tiredness)
- Spasticity
- Coordination problems
- Reduced bladder control
- Loss of strength
- Tactile sensibility dysfunction

In younger patients, the early stages of MS are often characterized by a relapse-remit pattern with very good remissions. In older patients, the disease usually follows a relapse-remit but progressive pattern.

#### How can Lokomat training help MS patients?

Gait rehabilitation is of importance for MS patients, in accordance with the severity and pattern of the disease in each individual. However, the typical MS symptoms of fatigue and spasticity often make gait training difficult. To relieve this difficulty as much as possible, the Lokomat system offers the patient task-oriented training and support that suits their specific condition. Specific settings on the Lokomat system can be used to systematically support the patient and to avoid making excessive demands on or overworking the patient, which is very important, especially in the MS pathology.

#### What are the expected effects of training with the Lokomat system on MS patients?

Treadmill training combined with other forms of physiotherapy improves walking ability, balance and endurance performance for MS sufferers.<sup>(1)</sup> In principle, increased physical activity (endurance training) in therapy of MS patients is regarded as beneficial and sensible.<sup>(2, 3)</sup> Experience has shown that training with the Lokomat system leads to reduced tonus in the leg muscles. Thus, the spasticity that is often perceived in MS patients is mostly reduced immediately after a training session.

**Note: At this point, we would like to expressly state that these improvements are not due exclusively to training with the Lokomat system. They must always be regarded as a result of Lokomat training in combination with other physiotherapeutic interventions.**

#### How often should training take place?

Leading clinics recommend that patients train at least three times a week with the Lokomat system. A training session usually lasts one hour (depending on the patient's stamina and the therapy plan). For more information, please see the "Recommendations for clinical practice" in the Products/Lokomat/Interest Groups section of our website.

**Who should not use the Lokomat system for training?**

As with any form of therapy, there are known contraindications for the Lokomat system. For a list of these contraindications, please see “Purpose and contraindications of the Lokomat System” in the Products/Lokomat/Interest Groups section of our website.

**Which clinics have experience with the Lokomat system?**

If you have any questions about therapy with the Lokomat system, please contact your local clinic directly. For a list of reference clinics, see the Lokomat / References section on our website.

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- (1) Gardner MB, Holden MK, Leikauskas JM, Richard RL. Partial body weight support with treadmill locomotion to improve gait after incomplete spinal cord injury: a single-subject experimental design. *Physical Therapy*, 1998, 78: 361-374.
- (2) Mostert S, Kesselring J. Effects of a short-term exercise training program on aerobic fitness, fatigue, health perception and activity level of subjects with multiple sclerosis. *Multiple Sclerosis*, 2002; 8: 161-168.
- (3) Rietberg MB, Brooks D, Uithaag BMJ, Kwakkel G. Exercise therapy for multiple sclerosis. *Chochrane Database of Systematic Reviews*, 2004; Issue 3