“Practical recommendations for Lokomat therapy in children with Cerebral Palsy: Patient-specific considerations?”

The pediatric population has special individual characteristics which make a simple generalization from adults to pediatrics impossible. For that reason, a group of physical therapists and physicians met together and developed practical recommendations for Lokomat therapy in children with Cerebral Palsy.

The complete results are published in the 2015 article titled Practical Recommendations for Robot-Assisted Treadmill Therapy (Lokomat) in Children with Cerebral Palsy: Indications, Goal Setting, and Clinical Implementation within the WHO-ICF Framework and published in Neuropediatrics by Aurich et al.

**Anthropometric requirements**

In order to ensure proper setup, the following recommendations were made by a group of experts: (Aurich et al. 2015)

- **Body weight must be at least 15 kg**
- The **minimum femur length must be at least 23 cm**
- **Always use the Lokomat lower leg extension** (or distal cuff) to better fasten the exoskeleton to the patients’ legs

**Orthostatic requirements**

- The patient should be able to **sustain a vertical position** for at least 20 minutes as assessed by the therapist prior to initiation of therapy.
- **Emergency exit strategies** during therapy have to be set up in advance and it may be useful to practice these with a healthy volunteer in advance.
- The individual institution’s emergency call procedure must be familiar to all therapists.

**Handling of pain**

- The condition of the patient must be monitored continuously during therapy.
- **Mild occurring pain during the first therapy sessions** (e.g. muscle pain, pain caused by pressure of the cuffs or by the belt system) is frequently observed. Any sort of pain, but most critically pain in bones, joints, or soft tissue during therapy, has to be analyzed immediately.

- **Shear forces** on the joints must be avoided. Consequently, an individual fitting and adaptation of the exoskeleton must be performed with great care on the current range of motion and the axes of the patient’s legs.

- The **correction of existing anatomical abnormalities** or deformities should be made only through small, gradual changes within the software setting. This adjustments can be done by using the range of motion or offset parameters.

- If complaints **persist despite adjustments** over the second or third therapy session, the indication of robotically assisted treadmill training as a therapeutic option needs to be critically reconsidered.

Keep in mind that the treating medical experts who prescribe and carry out Lokomat therapy are responsible for the patient. It is their decision as to what kind of treatment is appropriate for individual patients in their care; this includes whether Lokomat training is appropriate for a given patient. Hocoma can only present items to consider when making the decision; Hocoma cannot make the decision as to whether Lokomat training is appropriate, especially without having any contact with the patients.

Do you have a different strategy when treating pediatric patients in the Lokomat? Write a comment and share your experience!