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## 6 MOTomed and walking ability

### Promote walking – at home

In order to be able to walk, a number of different physical skills and abilities are required. We have divided the most important ones into two categories in order to show how walking can be promoted with the MOTomed Therapy.

#### Two of these important preconditions for walking are:

##### 1. functioning interplay of movements

- movement control
- coordination
- balance

In order to achieve a smooth flow of movements, the coordination between the different muscles has to work properly. In many cases, obstructive muscle tension (spasticity) has to be reduced. With the MOTomed, this can be supported by the user at home: The reciprocal (repeating) movements of the MOTomed Therapy can have a positive effect regarding tone regulation, movement control, coordination and balance.

##### 2. sufficient basic fitness

- muscular strength
- stamina

In order to maintain or build up walking ability, a certain degree of muscular strength and physical stamina (= basic fitness) is necessary. This basic fitness is usually maintained by daily movement in everyday life (a person walks an average of 4,000 to 6,000 steps per day). However, this basic fitness suffers if walking becomes either tiring or disappears due to physical limitations. Result: an important precondition for walking diminishes.

### How can the necessary basic fitness be maintained?

For a person with physical restrictions, walking, cycling or training with a home trainer is only possible to a limited extent. In most cases, this amount of activity is insufficient to maintain the necessary level of basic fitness.

#### Problems with walking, cycling or training with a home trainer:

- Risk of falling, balance problems
- Fear of a spasm that might occur
- Increasing muscle tension or cramping due to awkward movements
- Pain due to uneven strain (e.g. hip, knee or wrist joints)
- Initial resistance is too high for the small amount of strength available
- Rapid exhaustion due to loss of strength

#### The MOTomed functions provide:

- **Safe training** from a chair or wheelchair
- **Warm-up and wind-down:** The MOTomed SmoothDriveSystem gently moves your arms and legs to ensure a thorough warm-up of the muscles before active cycling (using your own strength). At the end of the session, the muscles are relaxed again by the smooth movement of the motor in order to prevent any remaining muscle tension.
- **Harmonious movement:** Awkward movements are evened out by the smooth running of the MOTomed.
- **Safety in the event of sudden spasticity:** The MOTomed MovementProtector detects any sudden spasm. In this event the MOTomed SpasmControl with automatic direction change is activated and works to ease the muscle contraction.
- **Longer cycling periods – even with minimal muscular strength and stamina:** Finely graduated gears and partial assistance from the motor make it possible to train effectively for longer periods (MOTomed ServoCycling function).

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