

# Whole-Body vibration in combination with verticalisation in the very early phase of neurological rehabilitation

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## Introduction:

The early mobilisation out of the bed and the verticalisation are well established in the early neurological rehabilitation. To enhance the outcome of early verticalisation whole body vibration might be a beneficial tool. The wholebody vibration does not saturate, it aims at a muscle tone reduction, muscle strengthening via the tonic vibration reflex, prevention of pneumonia and thrombosis, and the promotion of awareness via the afferent stimulus to the sensorimotor cortex

## Methods

Our group designed a slim (5 cm) vibration platform (20-50 Hz) combined with a commercially available standing device ((Mobilizer®). The current study included 10 severely affected patients (all tetraparetic, wearing a tracheal canula, limited awareness), being investigated while standing with the vibration on and off, the on-period was 15 min.

## Results

The on-condition did not alter significantly the vital parameters, while the muscle tone decreased and both the alertness and awareness improved in six patients. The EEG recorded in two of these six patients during the vibration on and off revealed an accelerated EEG rhythm. Relevant side effects, in particular a lung embolism, did not occur.

## Conclusion

In conclusion, the combination of verticalisation and wholebody vibration might be a useful tool in neurorehabilitation. Randomized controlled studies should be the next step.