

The Brucker Biofeedback Methode®

A special treatment method for patients suffering from damage to the brain or spinal cord

What is the Brucker Biofeedback Methode®, or BBFM® for short?

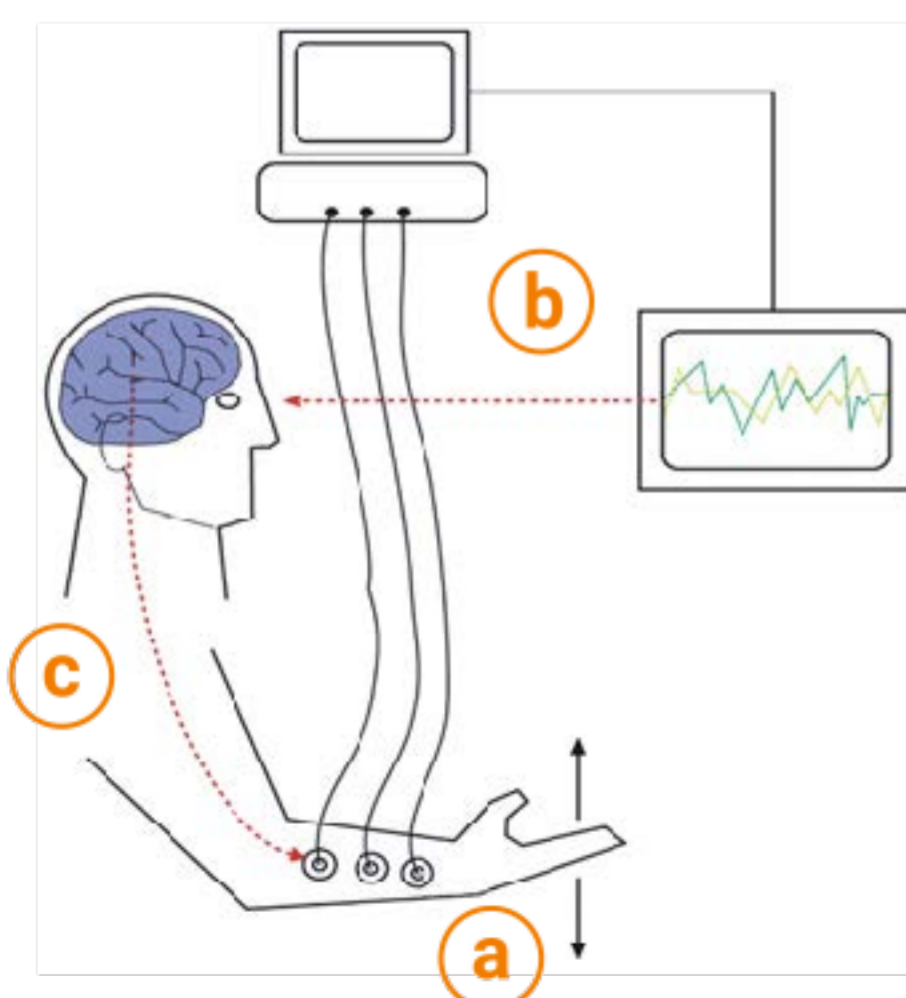
With the Brucker Biofeedback Methode®, muscle function can be improved. Biofeedback is a technique taken from behavioural medicine (which is used in many fields of application).

By using the BBFM®, neuromuscular signals not normally detectable can be visualised on a computer screen and modified by the patient. The brain registers the information and processes it accordingly at the next attempt. Using accurate and immediate feedback, specific movements can be influenced to exert voluntary control, something which was previously considered impossible.

For whom is BBFM® an appropriate method?

Enormous success can be achieved in neurology patients following a stroke, cerebral palsy, or brain and spinal cord injuries. Frequently, they suffer from motor activity disorders such as poor trunk control, gait disorders, spasticity, poor coordination or muscle weakness.

How does BBFM® work?



A muscle can only move if the brain sends the right signal. Patients with motor functional disorders have fewer signals from the brain to the muscles. In the case of a spinal cord injury, BBFM® teaches the brain to search for pathways that may still be intact between the brain and the muscles; pathways that can bypass the damage. Patients with brain damage can, with the help of BBFM®, create new connections in the brain to take over the task of the damaged cells. The computer program identifies neuromuscular signals, electrodes are placed on the muscle in question and the patient is asked to try to perform a movement (a). Signals from the brain are registered by the computer and displayed as lines on the screen (b). The patient can watch the neuromuscular signals increase on the screen by concentrating his attention on the muscle being measured (c).

Summary

BBFM® is an effective treatment alongside physiotherapy, occupational therapy and other forms of therapy. With the help of BBFM®, patients learn to gain better voluntary control of their muscles, improving coordination, reducing spasticity and strengthening muscle function. In children with cerebral palsy in particular, improved voluntary motor activity often enables the various 'milestones of development' to be achieved: sitting, standing up and walking without difficulty, leading to a much better quality of life. Not to be underestimated, is the motivation experienced by patients when they recognise what can be achieved through their own efforts.

How does Brucker Biofeedback work?



Electrodes placed onto the respective muscle (Fig. 1) are able to detect even the slightest signals on the muscle surface. The patient then performs the corresponding movement (Fig. 2).



With the help of a specially developed computer system, the signals are processed and displayed immediately, in other words without delay, on a monitor (Fig. 3).



The patient learns in this way to control unintentional spastic movements and/or to better coordinate movements, such as movements of the feet when walking, as shown here.

