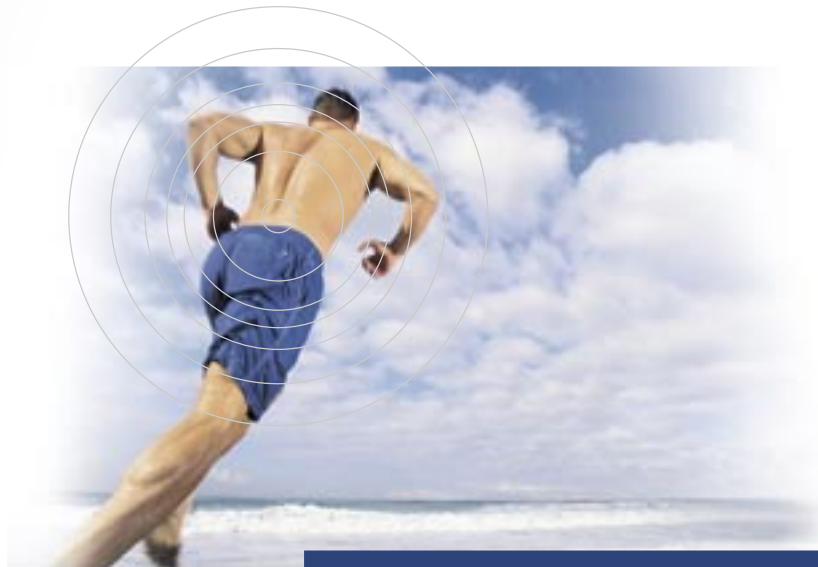




ENDOSKOPIA



# Medical Strengthening Therapy (MST)

**Specific muscle strengthening  
for a pain-free back**

# For an active life without back pain.



## MST – an aetiological therapy against dorsal pain

Today, diseases and malfunctions of the spine and the muscular system represent the most widespread and at the same time the most cost-intensive factor in public health. Health insurance companies are spending more than 23 billion € a year on dorsal diseases – a cost factor that will even escalate further.

Nearly everyone has already experienced dorsal pain and had to put up with a sometimes substantially reduced quality of life.

**In this brochure you will find a therapy that helps. Perceptibly: MST, the Medical Strengthening Therapy**

In 1972 already, scientists of the University of Florida, Gainesville, started working on a way to solve dorsal problems. Today, this solution is well-established all over the world: a specific strengthening of the lower back muscular system by means of the MedX therapeutic system.

### **To know the causes.**

### **To strengthen specifically.**

Successful therapies are always based on knowing exactly the initial cause of a problem. Today, we know that chronic back pain is often caused by an insufficiently formed autochthonous dorsal muscular system (m. erector spinae) or the bottom layer of the dorsal extensors (m. semispinalis, m. multifidus) respectively. These are the muscles that are primarily responsible for the erection and stability of the spine.



Exactly for this reason, our therapy starts here. By applying the Medical Strengthening Therapy – which means by specifically strengthening the atrophic muscular system – about 80 % of our patients are almost completely pain-free. Even patients, who have been suffering from many years of therapy-resistant chronic back pain, are now able to live an active life again – free from pain.

Our therapy can also be applied to protruding or herniated discs where a surgery is not necessary, until the patients are symptom-free.





## MST and chirotherapy working hand in hand

If the muscular corset is – in most cases due to substantial pain – no longer able to stabilise the spine, the joint capsules of the smaller vertebral joints are slackening. Vertebrae and joints may displace themselves thus causing instability. This instability on the other hand is causing blocks – a sort of “self-help” for local stabilisation – and disc damages, such as disc protrusions (discs are bulging out) or disc prolapsus (discs are herniated). Furthermore, this instability can result in irritations of the nerve branches at the vertebral joints and the compression of nerve roots (e.g. the sciatic nerve).

Chirotherapy has undergone profound medical research and is now a well-proved method for the diagnosis and therapy of this kind of malfunctions (blocks) of the spine. By applying soft manipulation, the impaired functionality of the vertebral joints is restored. The manipulative treatment of the spine is reserved to physicians exclusively.

### **Only taking active steps will bring long-term success**

The specific strengthening of the lower dorsal muscles combined with chirotherapeutic treatments serves as a prophylaxis against further faulty strain – especially on discs and vertebral joints – thus preventing degenerative affections on the spine. Back muscles that are strong and evenly formed will produce more stability, prevent from blocks and relieve the discs.

The discs (inter-vertebral discs) consist of the outer fibre ring (anulus fibrosus) and the inner core (nucleus pulposus). They allow three-dimensional flexibility, serving mostly as shock absorber and support of the spine.

A constant movement of the several vertebral segments is necessary in order to ensure the nutrition of the disc by means of diffusing oxygen and glucose. This explains very well why passive treatments will only bring short-term relief.





## Getting active – Our solution for your back problem



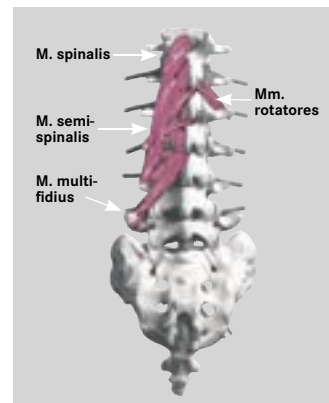
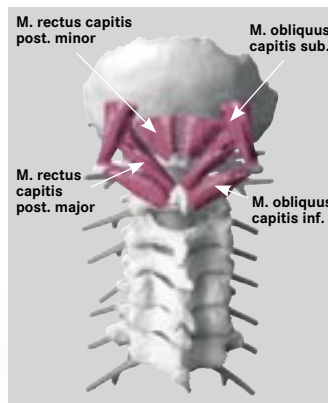
Our Medical Strengthening Therapy is aimed at restoring full functionality of the spine (power, flexibility, staying-power) by means of active reconditioning through muscle build-up training. Indirectly, the so improved blood circulation results in a substantial recovery of tissue (especially discs and vertebral substance).

MST treatments require computer-controlled and high-technology therapeutic equipment (e.g. MedX). This enables us to provide separate trainings for cervical or lumbar vertebrae while carefully saving joints and discs.

In order to do so, all synergistically working auxiliary muscles have to be eliminated from the muscular function chain. This is achieved by an optimum fixing of the patient in the corresponding equipment.

To be concise: whereas in the cervical-extension machine, the function of the neck and shoulder muscles (m. trapezius, m. levator scapulae) has to be eliminated, the lumbar-extension machine requires that the hip extensors (m. gluteus maximus as well as mm. ischiocrurales) are prevented from supporting spine erection.

Knowing how to isolate the spine-stabilising muscular system is the crucial point of our successful therapy.





# The Therapy: Indications - Analysis - Treatment

## Main indications

Every therapeutic unit is carried through as individual treatment by especially trained MedX therapists, who have received a university degree in sports as a basic training.

We will start by isometrically testing the strength of the dorsal extensors in order to evaluate whether or not the reason for the pain is really atrophy and/or an intramuscular imbalance (irregularity) of the corresponding muscle group. This isometric strength testing is carried through in specific standardised measuring positions within the individual patient's possible range of motion (ROM). The first measure is taken in the maximum possible flexion position, the last measure in the maximum possible extension position.

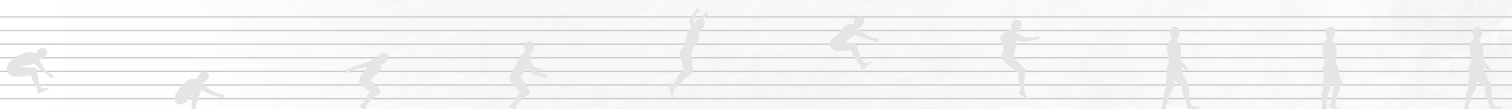
On the basis of these test values, the computer calculates the patient's strength curve. This curve is compared to the standard references as related to age, gender and weight. Nearly all pain patients show restricted flexibility (range of motion) and a strength level of the dorsal extensors which is too low, or in general a diagram deviating from the standard curve.

An objective quality control of the therapeutic measures is ensured by the International Society for Medical Strengthening Therapy.

The Medical Strengthening Therapy is prescribed upon medical indication.

Main indicators for this therapy are the following:

- **Back pain in all forms**
- **Muscular insufficiencies and muscular malfunctions**
- **Status after spine operations**
- **Osteoporosis**
- **Status after spine traumata (traumas)** (acceleration trauma, e.g. catapult trauma, fractures etc.)
- **Degenerative affections of the spine** (osteocondrosis, spondylosis, spinal stenosis)
- **Disc protusions and prolapses where no surgery is necessary**
- **Postural weakness and faults** (e.g. scoliosis, segmental instability, spondylolisthesis etc...)
- **Diseases of rheumatoid origin** (chronic poly-arthritis, m. Bechterev, fibromyalgia etc..)



# The different steps of our therapy



## Dynamic training with progressive strain enhancement



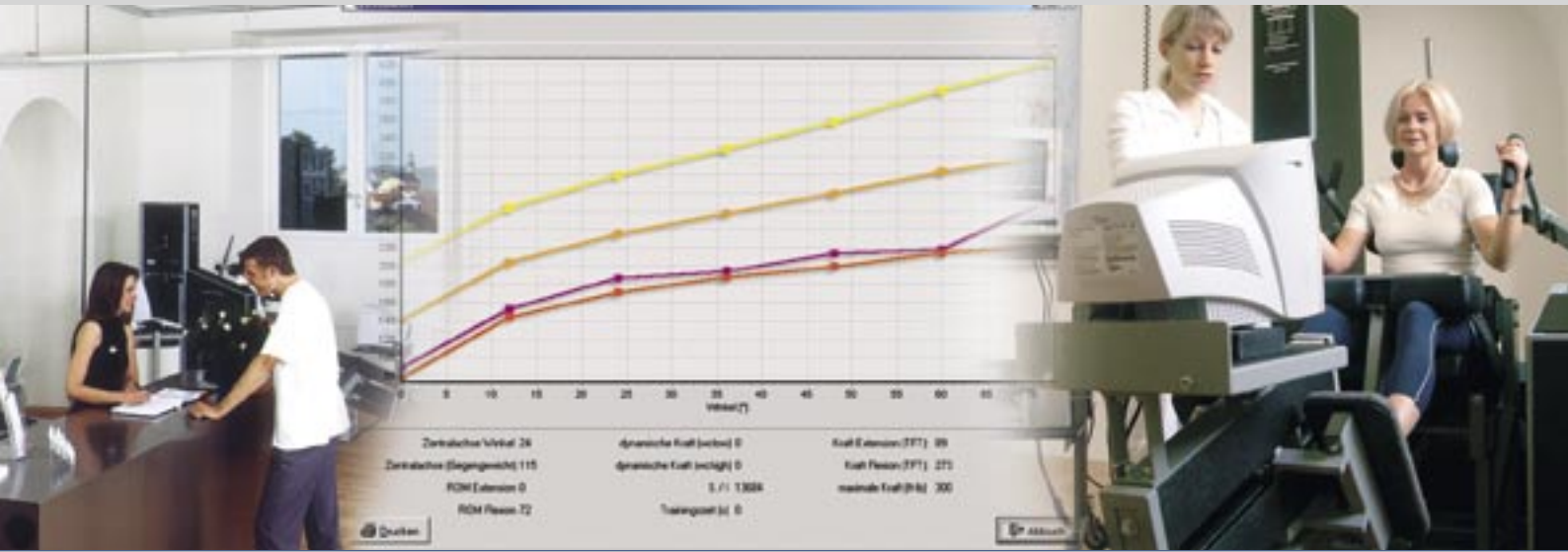
The initial thorough check-up including the spine status is carried through by our surgeon. An overall series of 12 – 18 (at a maximum of 25) therapeutic units should be taken once or twice a week. During the whole therapeutic unit and as a matter of principle, the patient is constantly accompanied and guided by an experienced therapist.

Every unit consists of a dynamic training of the lower dorsal extensors (10 sec. per repeat, i.e. 4 sec. concentric, 2 sec. isometric and 4 sec. eccentric method). The muscles will be strained up to local exhaustion. By means of a torque disk the resistance, which is the training weight, is variably adapted over the whole movement angle – corresponding to an optimum curve diagram of a physiological strength curve.

In case the targeted time under strain is exceeded, the training weight is increased in every therapeutic unit following the principle of progressive strain enhancement.

In most cases, an additional programme for the secondary stabilising trunk or neck muscles is indicated, which is carried through on the MedX training equipment.





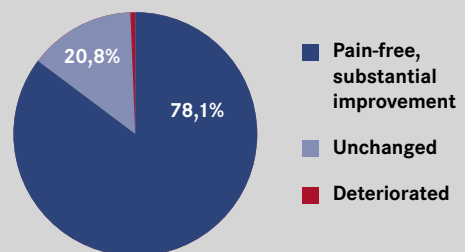
## Ensuring quality standards through scientific evaluation

After the therapeutic unit 12 or 18 respectively, the isometric strength test is repeated in order to document the improvement of flexibility and strength. Any changes in the patient's subjective pain perception are recorded in the West Haven Yale University Multi Dimensional Pain Inventory. The patient will fill out this WHIMPY pain questionnaire before every strength test.

According to the guidelines of the International Society for Medical Strengthening Therapy, the patients are regularly invited for follow-ups at 6 and 12 months after the end of the MST.

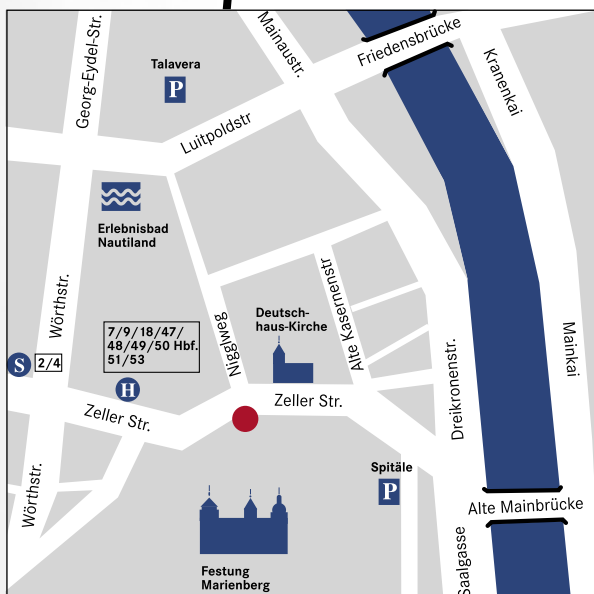
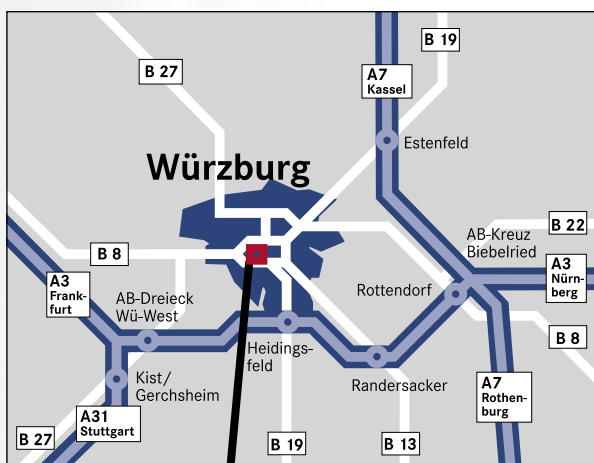
Documentation and evaluation of the data allow a scientific analysis of the therapeutic results, thus helping to ensure our quality standards. According to our own scientific studies (ENDOSKOPIA) as well as according to studies in the United States and Europe, 80 % of the patients suffering from chronic back pain remain pain-free after undergoing medical strengthening therapy. This result is confirmed in our practice – every day.

### Pain perception after MST treatment (N=945)





Dr. Florian Maria Alfen



For further detailed information on our individual treatments in spine therapy, please do not hesitate to contact us. We shall be pleased to welcome you in our practice for a check-up and a consultation.

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