

# FLEXI-BAR

The best workouts  
with the ingenious  
vibration training tool



Frank Thömmes

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with the ingenious  
vibration training tool



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Frank Thömmes, born in 1968, is a graduate PE teacher, soccer and back training teacher, as well as head in coronary sports exercises. He has numerous trainer and advanced vocational qualifications at his disposal in the field of some sport disciplines, as well as additional therapeutic qualifications.

As an author, he wrote several publications about the exercise with the FLEXI-BAR and the »XCO-Trainer,« as well as articles about workplace health promotion.

His agency, *[www.fit-projects.de](http://www.fit-projects.de)*, organises health and exercise projects for health insurances and other clients throughout Germany.



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A healthy person has no clue how much wealth that is.

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# About this Book



For more than 15 years, I have been working within the scope of by now over 1000 prevention classes with patients who seek professional help dealing with back problems. During my sports studies, I already got to know the complexity and the individual fates connected to it. In the course of my education in becoming one of Germany's first teachers for back training and later as an instructor for the Forum Gesunder Rücken - besser leben e.V., I also became aware of the discrepancy between modern and seemingly out-of-date ways of therapy approaches for back problems. Considering exercise as a measurement of all things when it comes to prevention and therapy of back pain, still has not been put into practice. After such a long time, it very well

should be permitted to ask what the problem seems to be: even today I am still confronted over and over again with patients whose doctors only know about the therapy order of injection, pills and rest. Exercise is rarely recommended, and often it simply seems to be too late or too expensive to take deconditioning steps against the pain cycle through exercise therapy.

In search of practical assistance for affected persons and of feasible programs to pursue oneself, the FLEXI-BAR came to my attention years ago already, and I have ever since regularly used it in every group. The simplicity of the operation, the complexity in its effect, the positive results in strength, reflex control, and coordination, as well as the applicability in self-training at home combined with short duration of exercise, proved to be a logical concept with a widespread impact on back problems.

For these reasons, I have tried to take a closer look at the whole topic of »training with dynamic bars and vibration« in the current book. However, the more closely I did my research and reinforced the topic, the more I reached the convictions that the topic is perfectly depicted through the FLEXI-BAR and the accompanying concept. Thus, the book came to its title.

Shortly before the printing of this book, a large grocery discount store included a low-priced model of a dynamic bar in their product line – a further indicator for the increasing interest in this concept of training.

Every reader is welcome to try reaching the described effects with any model of a dynamic bar or rather to perform the introduced exercises. Mind you that I do not recommend this, but it would be possible. In my experience, most users will end up with the FLEXI-BAR, which I still use in all classes, from competitive sport over sport for seniors, all the way to therapy.

*Have fun with swinging!*  
*Frank Thömmes, autumn 2011*

# 1

## The Development of Vibration Exercise



## The History of Dynamic Bars

How old the idea of a flexible dynamic bar held in one's hand really is, cannot be exactly determined. Therapeutic and scientific efforts have equally influenced the effect of the transfer of vibration by means of dynamic bars to the human body, and both have left their mark on different developments. An end to these efforts cannot be expected yet, since more and more vibration devices are getting invented and developed. The »Propriomed,« a dynamic bar, and the »Posturomed,« a vibrating floor space, took a root on the therapeutic level. On the huge market of fitness home equipment and accommodations, however, only the FLEXI-BAR, which developed into the only dynamic bar with broad acceptance, accomplished this. The FLEXI-BAR is more than a trend though, due to the constantly increasing ways of use and the perceiving of the mode of action of the swinging bar of more and more groups of people.

## Starting Point Vibration Exercise and Physical Therapy

Vibration exercise means in a more narrow sense a form of exercise in which the performer stands on a vibrating disc or a vibrating subsoil. Thereby, the vibration hits the body from the bottom up. **The goal of this form of exercise is the stimulation of stretching reflexes in a high number and the contractions of muscles related to that.** During the likewise known biomechanic stimulation (BMS), individual groups of muscles are locally affected through attached vibration devices. The promised results of these

reach from pain reduction for patients to increased performance for athletes.

Vibrating medical auxiliary tools go back farther in their tradition. In the 19th century already, patients with back pain in the USA were cured with vibration devices, and vibrating chairs were tested as a treatment for patients with Parkinson. In a large number, these devices mainly operated through steam, were also to be found in Europe. The publication by Doctor Biermann, which describes the effect of cyclic oscillation (swinging) on the human body, dates back to 1960. In 1970, the idea found its entrance to the field of sports. Nazarow, a Russian physician, established the biomechanical stimulation (BMS) as a method of exercise for the gymnastics squad of the Soviet Union at the time. This method is still in practical use today. Since the beginning of the new millenium, there are more and more producers offering vibrating platforms and dynamic bars for the fitness market.

The effect of vibration exercise has not been verified sufficiently by science yet. Studies exist, which were frequently carried out on non-athletes. This favours good results. Furthermore, there are numerous non-scientific studies with contradicting results, usually carried out on very small groups of patients.

## **Different Frequences of Base Plates and Dynamic Bars**

Partly, the effects of swinging subsoils and swinging bars differentiate enormously, especially when the dynamic bar must be set swinging and is not externally controlled. The main difference lies in the coordination of movement here, because the impulse to bring a dynamic bar to vibrate has

to be controlled arbitrarily. For externally controlled base plates or attached vibration devices this is not the case. Vibrating base plates additionally swing with considerably higher frequencies than dynamic bars. Through improper use, this involves risks for one's health. Thus, there is no unrestricted recommendation for externally controlled vibration exercise.

The theoretical framework of the effect of low frequencies of about 5 Hz (swingings per second) is justified in the system of the postural ontogeny (cf. p. 21). **Practically, this means that these frequencies favour the reflexive, active erection of the muscles close to the spinal column, and therefore develop their stabilising effect intersegmentally (between the individual segments of the vertebrae, which means between the vertebral body and the small neighbouring vertebral joints).** In the therapeutic practice, surprising successes in therapy seem to be possible. Vibrations above 10 Hz produce multiplied stretching reflexes in the muscular system. Over reflex arcs, this then leads to tightness in the muscles, which otherwise is only caused by exercise. The latter, not in such a high frequency though. There is an increased ability to tense the muscles and, thus, an increased tension of the muscle base at the bone, which can theoretically increase the strength of the bone and should stimulate its stabilisation tendencies. All in all, however, are the therapeutic as well as the athletic effects only verified in individual cases and need further scientific support. Although it is a fact that it is often the case in the field of back problems that successes in therapy are not sufficiently supported by science, it does not cut down their administration or spread.

## The Beginning of Dynamic Bars



In the 60s already, Russian researchers experimented to retain their muscle strength and bone stability like astronauts under weightless circumstances without any bigger equipment. As a result, they had forms of exercising, in which external vibrations played an immense role. In 1991, physical therapist Bruce Hymanson invented a medium-long, flat swinging blade, the »Bodyblade,« in the USA. The therapeutic motivation behind his efforts, and the invention as a result to that, was the ability to go through a neuro-muscular exercise with an injured shoulder, without having to take painful exercise amplitudes to the damaged joint: a goal he reached with the »Bodyblade,« which one swings by hand. In the USA, however, the Bodyblade is only a moderately known exercise device. In about the mid 90s in Germany, shortly after that, therapeutic research results on patients were the basis of the idea of dynamic bars. These studies reported about diagnostic possibilities and exercise effects on patients, caused by swinging subsoils and swinging objects. However, a more specific distinction regarding the swinging objects did not take place. The therapeutic effect (a better balance, more strength in the erector spinae and better coordination) was comparable to classic spinal exercises.



*FLEXI-BAR group class at a sports club*



*You can integrate the FLEXI BAR in varied ways into your workout program.*

Results of these researches, which by the way were ordered by the industry, were the »Posturomed« and the »Propriomed« - therapeutic exercise devices, which up to today are in use in almost every physical therapy office. However, they are in need of professional care and were not planned for private use. Before, the manufacturer already produced ergonomic seating furniture and devices to lay down on, which can support the swinging of the body, and can so develop health supporting effects.

Henceforth, building up on this, the FLEXI-BAR and the »Stability Bar,« which still exists today under the term »Staby,« developed. Both devices consequently converted the available knowledge and therapy approaches with their development into something accessible for private users. All other forms of dynamic bars which entered the market afterwards and which still enter, can safely be called reproductions, trying to imitate the success of the FLEXI-BAR. These, however, offer no development work or any other support.

## 2

# Effects of Vibration Exercise with Dynamic Bars





*The FLEXI-BAR reacts to effects of strength externally, and is itself free from any mistakes.*

## Simple Principle - Brilliant Effect

The idea of the dynamic bar, which is actively set into a swinging mode, has to thank its combination of an apparent simplicity and a complex effect on the human organism for its success. The FLEXI-BAR is itself without faults with its reactions towards effects of strength. It reacts exclusively to the provided impulses of strength of the exercising and partly returns these through its structure. The swinging demands high standards from the motoric control to specifically tense and then relax the working muscles. **The better the swinging is mastered, the better is the exercise's success - which will be reached with consistent effort after a short period as well.** Every user of a dynamic bar experiences of course the visual control of whether or not the swinging works. This direct response in combination with the pleasant feeling of the swinging are as well very significant factors for the use of

the FLEXI-BAR. The dynamic bar sets an exercising task for the performer through its composition and effect, with the goal that he or she has to and wants to compete with it. This favours the motivation to exercise, which, beside the »hard facts« of the effect of the sequence of movements, is part of the decision making on whether the movement will be performed or not.

## **It All Swings**

Human activities are controlled all the way into every single cell of the body through a large number of rhythms and recurring cycles. Natural forms of therapy, such as the bioresonance therapy, take advantage of this in order to be therapeutically effective. The swinging of the FLEXI-BAR, which transfers onto the whole organism, can have a stabilising effect in this context, and not only on muscles. Several users of the FLEXI-BAR said that the swinging of the exercise device helps to all in all stay in balance, and that a longer period of time without exercise draws one's attention to that through an unpleasant feeling.

## **Training the Lower Back Muscles - Working with Reflexes**

Examined in a more detailed way, our everyday life motoric activity is a highly complex process, which needs an even more complex control of movement through our brain. A lot of this runs through reflexes and cannot be controlled by us arbitrarily. Our ability to move upright through the world is an achievement we partly have to pay tribute to: our motoric capacities do not always have sufficient conditioning at their disposal to keep up all functions of the

muscular system, which is especially the case if someone does not or exercises too little. This partly inadequate stabilisation of the vertical orientation of the body counts most likely among the most common reasons for back problems.

#### **The Promised Effect Begins Immediately - Goodbye, back pain**

Many people suffering from back problems do not use the FLEXI-BAR until they have acute back pain. **Regardless of the reason, the swinging with the FLEXI-BAR, or rather the body's reaction to it, is so intense that the complaints frequently subside or alleviate at once.** This is due to the depth effect of the FLEXI-BAR, which intrudes in the tension regulation of the muscular system and calms it. A field of use for vibrating devices has always been the reduction of pain. Despite this effect, the preventative use, which means before the complaints begin, is surely the more advisable version in the use of the FLEXI-BAR.

## **Segmental Muscles - Tension Inside the Spine**

The anatomical foundation to help someone understand the effect of the exercise with the FLEXI-BAR is the distinction of back muscles into local and global muscular systems, established for the first time in 1989 by Bergmark. **Local muscles stabilise the individual segments of the spine. This takes place close to the spine, from vertebra to vertebra. At this point, the exercise effect of the FLEXI-BAR begins by responding to these areas as a reflector and by strengthening them.** The global muscular systems, positioned further outwards, stabilise the entire torso and can only provide indirect protection for the spine. If they have to work excessively, they tend to get tight, and another consequence could be a blocked SI joint (sacroiliac joint), which is the agile crossing between spine and pelvis: a last, desperate attempt of the body to remain stable.