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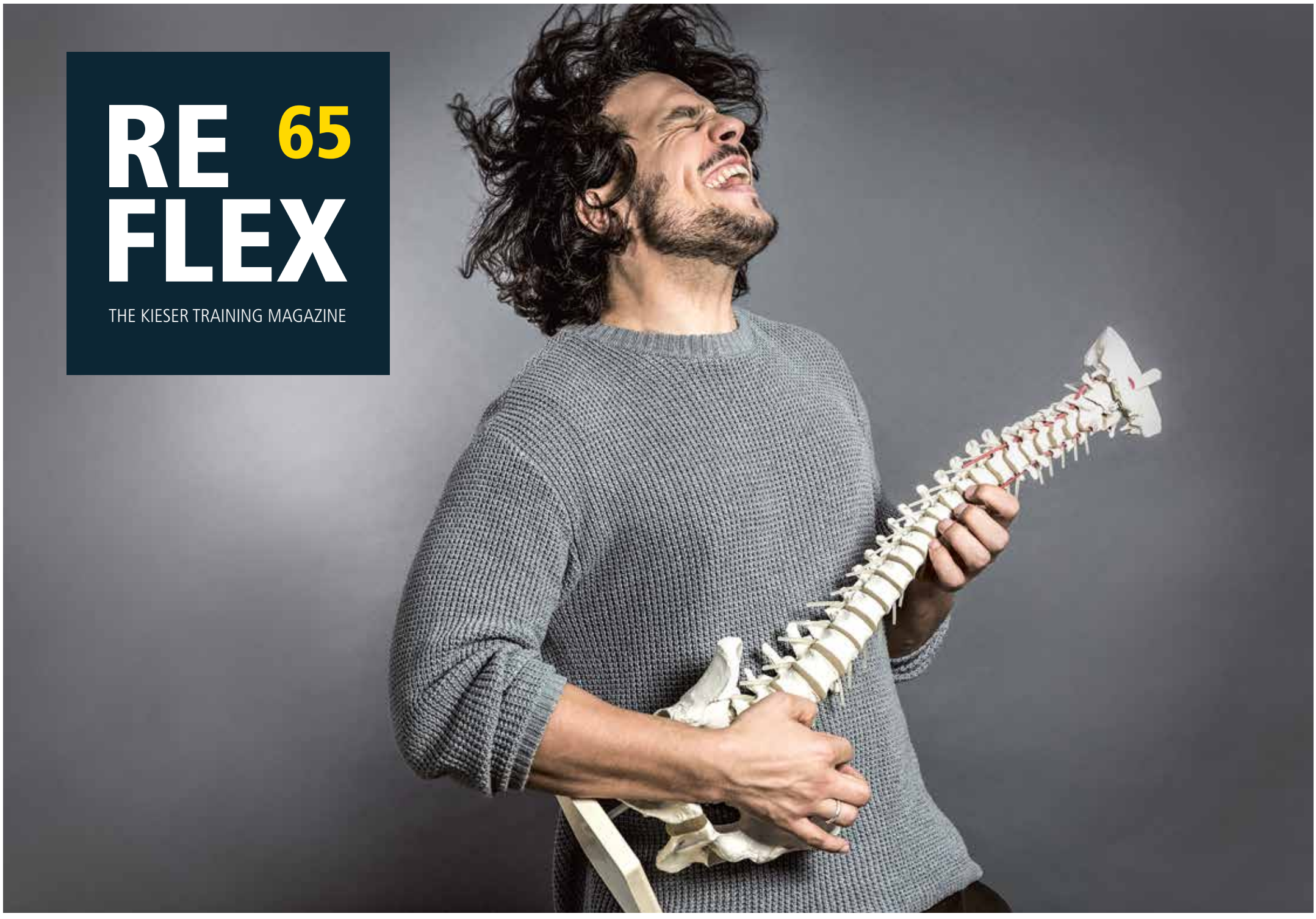
FLEX
THE KIESER TRAINING MAGAZINE



FIT FOR THE CAMERA AND THE BOXING RING

Christian Martin Schäfer is an actor but also spends long hours sat at his desk. Training at Kieser helps prevent back pain and neck tension. It also keeps him fit for his unusual hobby: chess boxing.

BY MONIKA HERBST

When the doctor told him that his back muscles were not very well-developed, Christian Martin Schäfer felt slightly aggrieved. No wonder, as at the time he was playing basketball three times a week and doing a lot of sport. Then suddenly he developed lumbago – a sharp pain in the lower back that is usually triggered by a spinal dysfunction or muscle strain. That was ten years ago. At the time, Schäfer, who comes originally from Zurich, was 28 years old and was working full time writing advertising copy. He was spending at least 10 hours every day at his desk.

When the doctor recommended Kieser Training, he was initially none too thrilled by the prospect of yet another commitment. Today he is pleased that he followed his doctor's advice. He has a fairly long back and because of a pelvic obliquity it is out of alignment. He needs the additional support that strong muscles provide. If Schäfer trains, he is more or less free from pain but if he skips the training, the pain returns. Twice a week, he trains on the machines and does a whole-body workout with a focus on the back and neck.

His neck can also be a problem! Schäfer now lives in Berlin and works as an actor. For example, this spring he played the male lead in a romantic comedy shown on TV. When he is not filming, he runs his own production company "ROCC Film" making commercials. Running his own company means a great deal of office work and often when he is out and about he has to work on his laptop or look at his phone. His head is tilted forward, putting a major strain on the cervical spine. Regular training strengthens the neck muscles and helps prevent them becoming tense when the head is bent forward.

"I really relish the time I spend on sport. With music in my ears, I work my muscles and leave the world outside."

However, it is not only his neck and lumbar muscles that benefit from the training. His hobby does as well. Christian Martin Schäfer does chess boxing. "What is that?" you may ask. It's a new sport – the first chess boxing club was founded in Berlin just 13 years ago but it is already gaining in popularity. In chess boxing, contestants box for three minutes and then play chess for three minutes. As training for chess boxing, participants alternate quickly between intense physical effort, e.g. using a punch bar or skipping and the quieter mental effort required for chess.

How did he come to take it up? By chance – Schäfer, an amateur boxer was looking for a club when he moved to Berlin. A friend introduced him to Lepe Rubingha, the founder of chess boxing. Rubingha, who hailed originally from the Netherlands, invited him to a trial session. That was two years ago and he now does chess boxing twice a week. "If I exercise, I feel good," says Schäfer. His training at Kieser is not only a must but he also enjoys it: "I really relish the time I spend on sport. With music in my ears, I work my muscles and leave the world outside."

STRENGTH TRAINING
FOR INTERVERTEBRAL DISCS

As a neurosurgeon, Professor Tronnier, Director of the University Clinic for Neurosurgery in Lübeck, is very familiar with specific back pain, including prolapsed discs: They are not always painful and surgery is not always necessary.

INTERVIEW BY TANIA SCHNEIDER

Professor Tronnier, what are the risk factors for prolapsed discs?
It is difficult to define clear risks. Patients who work mainly in a sedentary occupation such as office workers or lorry drivers are more likely to suffer a prolapsed disc than those who are very active. In addition, rare disorders such as connective tissue disorders increase the risk. In terms of the physical condition of an individual, patients who are overweight with poorly developed back muscles are at greater risk than people who specifically train their back.

By implication that means that I can prevent a prolapsed disc …
Yes, a prolapsed disc is the result of a loss of water in the intervertebral disc – this is why we are a little shorter in the evening than the morning; this causes slight movements in the adjacent vertebral bodies. The annulus fibrosus may tear causing a disc to prolapse. If we can stabilise the spine and prevent these minimal movements, e.g. by developing strong back muscles, we can prevent a protrusion or prolapse.

What are the classic symptoms?
If we use morphological imaging, e.g. a MRT scan, we often find a prolapsed disc even though the patient may not have any symptoms. Clinical symptoms are, therefore, much more important. For example, a symptom of a lumbar disc prolapse is pain that radiates down one leg. In the case of a cervical disc, the pain may radiate down one arm.

When should I see my doctor without delay?
You should visit your doctor if you have back pain that lasts for one to two weeks and does not subside despite taking ordinary painkillers such as ibuprofen or diclofenac. Your doctor will decide whether a scan or similar is required.

When is surgery required for a prolapsed disc and when not?
In our clinic, our decision is based on whether there are symptoms of a neurological deficit. Surgery is clearly indicated in the following cases:

1. Patient has severe, therapy-resistant pain for 3–6 weeks that does not respond to medication and if the patient is immobilised and is unable to have physiotherapy.

2. The prolapsed disc is causing a serious neurological deficit, i.e. the patient has a high degree of paralysis in the arm or leg. If the prolapsed disc and paralysis continues for some time, it is less likely that the paralysis will abate.

3. There are emergency indications, e.g. a so-called mass prolapse is causing a bladder or rectum malfunction. In this case, the patient needs immediate surgery, i.e. within 24 hours.

If the patient is in pain but does not show any neurological symptoms, the initial treatment is conservative therapy. First of all we prescribe medication to treat the acute pain and this is followed by physiotherapy. If the prolapse is not acute, the patient can also do muscle strengthening and this is where Kieser Training is crucial.

„For me, strength means quality of life.“

How long must I wait after an acute prolapsed disc before starting Kieser Training?
In most cases, we will not know when the prolapsed disc occurred. I would say, however, that after 6–8 weeks a patient can do machine-supported remedial exercises. In particular, this should include training on the lumbar or cervical extension machines (LE/CE) offered by Kieser Training. A major advantage of Kieser Training is that the customer is offered a medical evaluation and medical checks.

You mention machine-supported remedial exercises, what about yoga, back gymnastics and similar?
As a rule they do not reach the deep back extensor muscles. I have many patients who do yoga or back gymnastics. With these patients, you can see clearly that they have well-developed surface back muscles. However, these methods do not sufficiently strengthen the deep muscles that are responsible for back stability.

You are currently doing a study with the Research Department of Kieser Training.
Yes: We want to demonstrate that LE training strengthens the deep back muscles. We are measuring muscle density at the start and finish of the study using an MRT scan. Previous studies only measured the range of movement and strength and demonstrated that both increased. With this study we are using an imaging technique (MRT) to obtain objective evidence that strength training on the LE machine, where the pelvis is immobilised, actually changes the muscles. If we can prove that, it would be something new. We are including patients, who are not candidates for surgery and whose back problem is limited to one vertebral segment. In that one segment, they may have a prolapsed disc or a spinal stenosis. Initial results are very promising.

Then we should speak again when you have completed and evaluated the study. Thank you.

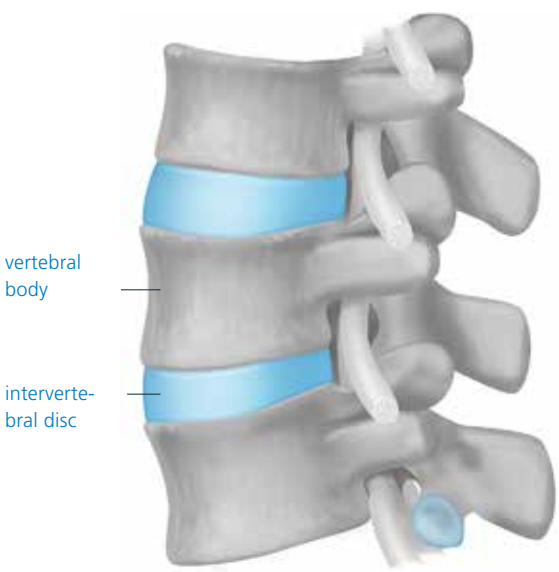
Professor
Volker Tronnier,
Director of the University Clinic of Neurosurgery in Lübeck, has trained with Kieser Training for 10 years.

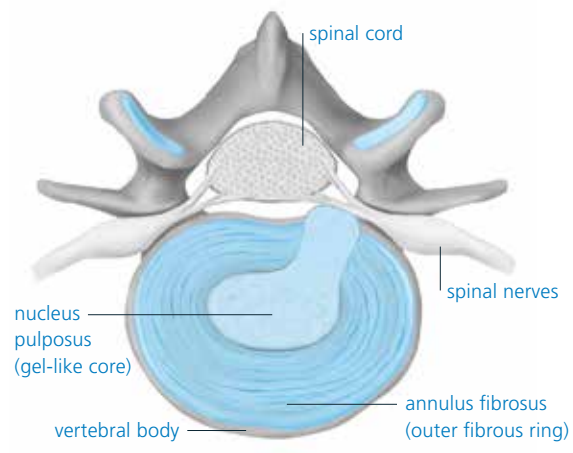
Specific and non-specific back pain

Specific back pain is pain that can be shown to have a specific cause based on a clinical or imaging diagnosis. This can include a prolapsed disc, spinal stenosis, spondylolisthesis or facet joint syndrome.

Non-specific back pain is primarily pain for which no cause can be attributed.

The two types of pain are treated differently. Specific low back pain is a case for the neurosurgeon.





INTERVERTEBRAL DISCS:
SHOCK ABSORBERS BETWEEN TWO VERTEBRAE

The spine is a flexible connection of a total of 24 articulating vertebrae, five sacral vertebrae fused together plus the coccyx. There are 23 intervertebral discs between the vertebral bodies. They are designed to act like shock absorbers.

BY TANIA SCHNEIDER

An intervertebral disc consists of a tough exterior fibrous ring (annulus fibrosus) that surrounds a soft gel-like inner core (nucleus pulposus). The fibres in this stiff outer ring are made up of collagenous connective tissue. These collagenous fibres are firmly anchored to the epiphyses of vertebral bodies and radiate into the cartilage covering the vertebral end plates. During our daily activities, we place a significant load on the annulus fibrosus. In particular, the ventral part of the lumbar spine is under significant pressure and so the annulus fibrosus is thicker at this point.

The gel-like core comprises so-called proteoglycans that are densely packed together. They are elements in the cell with a high water retention capacity – at least as long as the gelatinous core remains intact. When we are at rest, the core absorbs water, the intervertebral disc swells, presses apart the neighbouring vertebral bodies and the ligamentous apparatus becomes taut. This chain reaction ensures a high level of stability in each functional unit comprising one disc and two adjacent vertebral bodies. The "hydraulic" elongation takes the load off the small facet joints that provide the flexible connection between individual vertebral bodies. As we get older, the ability of the gelatinous core to absorb water declines. It loses its elasticity, becomes brittle and the space between two adjacent vertebral bodies shrinks. In addition, the efficiency of the collagenous tissue declines and so the thinner rear section of the annulus fibrosus becomes a weak point; this results in small tears. The gelatinous core may shift and press against the annulus fibrosus (disc protrusion) or break through completely (disc prolapse).

The decline in the natural processes of the body starts in early adulthood and advances at varying rates depending upon personal predisposition. Discs thrive by alternating continuously between exertion and non-exertion as it is this process that ensures the cartilage receives nutrients. If this dynamic change is absent, the disc does will not receive enough nutrients and it will deteriorate. The answer, therefore, is physical activity and targeted strength training of the autochthonous back extensors. This keeps the discs elastic for as long as possible and they are protected by the natural muscle corset.

DIAGNOSIS USING THE HANDS

If you are diagnosed with "non-specific back pain", you have a problem. You don't have a cause for the problem. In this case, manual medicine can help.

INTERVIEW BY MONIKA HERBST

What is the most frequent cause of back pain?

For a majority of patients, the cause of back pain is not clear and so the diagnosis in about 75% of cases will be "non-specific low back pain", i.e. the symptoms cannot be attributed to clear pathological changes in the body. In this case, the problem is often related to the muscles.

How can manual diagnosis help find the cause?

When undertaking a manual diagnosis, the doctor will examine the patient using touch in order to determine whether the vertebral joints, muscles and tissue feel right, i.e. they are not for example hard or tense. In this way, the doctor can determine whether the joint play is impaired. Normally, each joint has a certain range of motion. If, in contrast, there is a rigid stop, we use the term dysfunction. Often, the patient is not aware of any reduction in movement but is aware of the pain that develops around the dysfunction. Often, the muscles go into spasm – a sign that something is wrong, e.g. the load may be just one-sided or there may be an overload situation.

Nevertheless, orthopaedic specialists often resort to imaging techniques to make a diagnosis …

Yes, this often happens in medicine, particularly when it comes to joints, bones and muscles. Often these techniques find something that is quite irrelevant and has no effect on the body. Despite that it is often treated and the actual cause is ignored. Muscles are frequently the problem and do not function properly because they are weak or not in balance. In almost all cases, young people will be fine; they are fit and strong. As we get older, our muscles become weaker unless we train. At Kieser Training, function tests and scientifically validated back analyses provide data on spinal mobility and any weakness in the strength of the deep back extensor muscles. These are the muscles that are largely responsible for spinal stability.

What role does Kieser Training play?

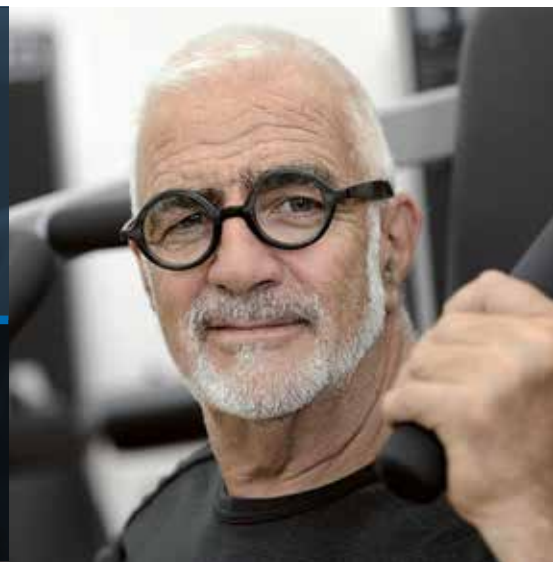
Our muscle corset takes the load off the vertebral bodies, joints and discs. Strong muscles protect us from irreversible damage, e.g. to the cartilage. Training rectifies many dysfunctions and eliminates muscle spasms. In most cases, stability and balance will improve and in the ideal scenario, the dysfunction or muscle spasm does not re-occur. If the dysfunction is not remedied, manual medicine may help. In this case, the therapist uses gentle pressure and manipulation. The aim is to restore the joint play by using mobilisation techniques and so eliminate the dysfunction or to relax the muscles by deliberately tensing and then releasing the muscles. Best of all, however, is not to wait until the problem occurs but to train beforehand. If you want to stay healthy, strength training is essential.

The physician Matthias Dahl, 50,
has been working with Kieser Training in Berlin for 15 years and prepares many special back programmes for customers.
He specialises in manual therapy and the Dorn method.

Actor **Christian Martin Schäfer** got to grips with his back pain at Kieser Training.

WERNER KIESER'S CORNER

TRAINING PRINCIPLES ARE ESSENTIAL



Training Principle 1: Train once or twice a week. Each session should cover the entire body. Why not train every day?

High intensity training (HIT) initially weakens the muscles and so if you fail to give muscles enough time to regenerate they do not strengthen but actually become weaker. Practical experience has shown that if you train twice a week, you can increase the weight on a continuous basis and so increase your muscle strength. If you train regularly and with intensity, your strength will usually plateau at the end of the build-up phase and progress will stagnate. Muscles are stronger, resistance (weight) has increased steadily and workload has often doubled. If you then extend the length of the regeneration phase and use our intensity techniques, you can often make further progress.

Why not split the training programme? For example, train the upper body at one session and the lower body at the other? That sounds logical and many use this method. In fact, opinions differ. Those who adhere to the old school of strength training assume that the body is a single unit, i.e. a system of interdependences and anything occurring in the body or affecting it, also influences the body as a whole. My mentor and teacher Arthur Jones explained it so: "You do not eat your breakfast for your legs, lunch for your shoulders and dinner for your arms." However, there are also scientists who believe that the development of strength/muscles is a local process.

However, there are also other arguments in favour of whole-body training. I will explain them when I talk about Training Principle 2 in the next edition of Reflex.

Werner Kieser

WELL DONE!

Kieser Training centres in Germany have met the test criteria of TÜV Rheinland since 2004. Now for the first time, the test organisation has also certified that these centres accord with DIN standard No. 33961. Kieser Training has become the first major chain to receive DIN standard certification from TÜV Rheinland.

Karin Ortmayer is based in Vienna and manages the Quality Assurance Department of Kieser Training.

BY TANIA SCHNEIDER

With the exception of one pilot centre, TÜV Rheinland scrutinised all centres in Germany. It checked safety standards, customer supervision, equipment and staff performance. "This certification provides customers with a high level of assurance," explains Matthias Lompa, Project Manager at TÜV Rheinland. "It shows that Kieser Training has embraced the high quality and safety standards required by an independent third party and met its criteria."

At Kieser Training, Karin Ortmayer has day-to-day responsibility for quality assurance and development and manages the department of the same name. "Our aim is to offer customers consistent quality irrespective of where they train and also to increase regularly the benefits they derive from our training," she says. To ensure that this happens, Kieser Training defines its procedures and processes in internal standards. Management staff, doctors and instructors are trained in these standards in a range of theoretical and practical courses. Having done that, the next focus is quality development. Ortmayer explains: "We carry out undercover inspections based on a defined protocol. This allows us to determine whether centres are complying with our standards in the way that we envisage and that quality meets our stringent internal requirements."

The inspectors regularly visit every Kieser Training centre – incognito – where they train as if they were a potential customer. They monitor every single detail. Were the staff friendly and attentive? Did they provide competent advice and supervision? Did staff intervene if customers were doing an exercise incorrectly? In addition to the friendly and professional service provided by staff the inspectors also look at the condition of the equipment, the cleanliness of premises and how well the administration works. "If everything is fine, then we are all pleased. If improvements are required, we work with the centre to resolve the problems."

However, not all inspections are incognito. "Our centres can make an appointment for a pre-arranged visit and coaching." This service was introduced at the request of franchisees and managers. "As part of such visits we jointly look at specific procedures and processes." For example, a centre may ask for coaching on the computer-assisted back and neck machines. At such sessions, we look at the training content in greater depth. This allows the instructors to compare their own perception with that of someone from outside. For Kieser Training, this intensive exchange is an excellent opportunity as "it allows new ideas to flow regularly into the system, which will benefit all."

Quality development pays off: whether in the form of certification by TÜV Rheinland in Germany, TÜV Austria, QualiCert in Switzerland or the seal of approval from the German consumer organisation Warentest (test 9/17).

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