RE FLEX

THE KIESER TRAINING MAGAZINE

56

NORWAY ON FOOT

THE AIR IS FRESH; THE VIEWS ARE FANTASTIC AND THE COLOURS VIBRANT! THE NORWEGIAN FJORDS ARE A SPLENDID BACKDROP FOR WALKING. ERIK SCHMIDTKE, KIESER TRAINING INSTRUCTOR FROM ROSTOCK WALKED IN NORWAY FOR SEVEN DAYS – DESPITE KNEE PROBLEMS.

"In August 2014, I spent a week in Norway walking with my father," explains Erik. For their first trip, the two of them tackled the Kjerag – a high rocky plateau overlooking Lysefjord in the southwest of the country. The high point is the Kjeragbolten; a large boulder wedged in a crevice some 1,000 metres above the ground. "Unfortunately, the weather that day was not good. The path was damp and the stones were slippery and so we did not venture onto the boulder." Despite that, the walk along the high plateau remains one of the highlights of their week-long trip.

On their next walk, father and son ascended the Preikestolen. Known in English as the Pulpit Rock, this is a rocky ledge 604 metres above the Lysefjord. From here they walked to the Trolltunga – the troll's tongue – a piece of rock that projects horizontally out of the mountain some 700 metres above a water reservoir. Next on the itinerary were the so-called Monks' Steps. Erik was really impressed and not just with the landscape and the spectacular views. He was thrilled that his knee held out. Shortly before the holiday the 24-year-old had experienced problems with his left knee as a result of intensive football training over many years.

Instructor Erik Schmidtke (top) from the Kieser Training Studio in Rostock had knee problems. To control it, he did strength training. This allowed him to enjoy in full his walking trip to the Kjeragbolten (Norway).

In order to relieve the structures of the knee and as preparation for the trip, his doctor and physiotherapist both recommended training on the B3, B4, B5, B1, B8 and J1 machines. A colleague also recommended the use of barefoot shoes for everyday walking. Erik followed their advice and is so glad that he did. "My knee pain disappeared: Something that I would not have thought possible."

Erik remained fit and well during the entire trip, walking in barefoot walking shoes throughout. "The flexible soles make you much more aware of the ground beneath you. This means you are less likely to slip," explains Erik. "Although the shoes do not support the feet, the training had strengthened my ankle muscles. Stability had improved as had my sense of balance. Even on extremely rough terrain, I did not go over on my ankle and remained free from injury." ■

NO TO BACK PAIN

In most cases, our doctor-led Medical Strengthening Therapy accompanied on a 1:1 basis quickly alleviates or eliminates back pain. We know this not only from our own experience but also the findings of scientific research. In addition, it is often possible to avoid surgery. We are not alone in being convinced of its benefits. The Allianz Private Krankenversicherung, one of Germany's largest private health insurers is as well and since 2012 has been collaborating with Kieser Training.

Allianz rewards exercise: Depending on the medical indications and the premium paid by an insured, Allianz pays up to 100 % of the cost of the Medical Strengthening Therapy offered as part of our Back Programme. To date, more than 3,200 policyholders have benefited from a programme that is good for both their back and wallet.

Innovative: Allianz also reimburses up to 50 % of the cost of independent Kieser Training – depending on training frequency. After all, regular training is essential for a long-term solution to back pain.

EFFECTIVE TRAINING
FOR WALKERS AND SUMMITEERS

PLAY IT SAFE AND STRENGTHEN YOUR MUSCLES: THIS WILL IMPROVE PERFORMANCE AND REDUCE THE INCIDENCE OF STRAINS AND BACK OR KNEE PAIN, MAKING YOUR NEXT TRIP EVEN MORE ENJOYABLE.

Walking in the Alps or other steep challenging terrain puts an enormous strain on the body. The entire day is spent climbing or descending and of course there is the little matter of less oxygen at high altitudes. All in all, it saps your energy, making a certain resistance to fatigue essential. Before you depart, you need more than just careful tour planning, the right clothing, equipment and enough provisions. You also need to train the muscles.

Without muscles nothing works

If you fail to prepare the muscles, you fatigue more quickly. Tough luck! After all, you can't simply stop in the middle of nowhere. You have to continue walking. If muscles are fatigued, you become less sure-footed and more likely to slip, turn your ankle, fall or injury yourself in some other way. In addition, you will probably develop very sore muscles and this can seriously screw up the tour. Similarly, back or knee pain during a trip can seriously reduce your enjoyment; this is often the result of muscle strain.

Benefits of stronger muscles

To enjoy your walking trip to the full, strengthen the muscles before you go. A special training programme will increase performance and make everything that little bit easier – even if the climbs are long and steep. The programme should consist primarily of exercises that strengthen the buttock, thigh and calf muscles. Each step will then be stronger; you will be more sure-footed and more resistant to fatigue. Strength training also helps strengthen the muscles that stabilise the joints. It also strengthens the ligaments and tendons – although this takes a little longer.

Don't forget to train the arms and shoulders. They are an essential for walking, e.g. when using poles for support, roped up for safety reasons or when scrambling is required. In addition, if you are also carrying a heavy rucksack, you will be glad of strong trunk muscles. ■

INTENSIVE:
NEGATIVE TRAINING

HAS YOUR TRAINING STAGNATED? ARE YOU NO LONGER MAKING PROGRESS? IF SO, TRY NEGATIVE TRAINING.

Negative training emphasises the eccentric phase of an exercise, i.e. the phase in which you lengthen the muscle and return the weight to the start position. This is why it is often referred to as "eccentric training". Although we don't know the precise reasons, we do know that muscles or individual muscle fibres are stronger during the eccentric phase of an exercise than during the concentric or isometric phase when the muscle is shortened or its length remains the same.

What to do

Pull-ups on the J2/J3, for example, can be done with negative movements only. You simply climb the steps of the J-tower and grab the bar with bent arms, shoulder-width apart. Your chin should be above the bar. Now try to slowly lower your body (negative/eccentric phase). With this exercise, negative training is achieved only through the slow and steady lowering of the body (about ten seconds).

Would you like to increase training intensity and try the negative method?
Ask your studio for advice

The exercise should be repeated until the muscle stops working (within a time span of 60 to 90 seconds).

What it achieves

Emphasising the eccentric phase increases the mechanical tension. The training stimulus is normally higher than if the emphasis is more on the concentric phase. This can help kick-start progress if training has stagnated. In some cases, it may be sensible to reduce the weight. ■

PROGRAMME FOR **WALKERS***

A1 HIP EXTENSION
Strengthens the lower back and gluteal muscles and so helps with walking.

A2 TORSO FLEXION
This exercise improves posture and ensures an optimum load on the joints when walking.

A3 ABDUCTORS
The lateral gluteal muscles stabilise the hips when the weight of the body is unevenly distributed, e.g. on uneven terrain.

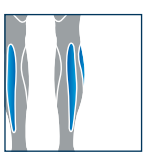
B6 LEG PRESS
The front and rear thigh muscles give you the strength you need to walk.

F3/F3.1 LOWER BACK
Walking puts a constant strain on the lower back as it works to keep the body upright.

F1/F1.1 ROTARY TORSO
Walking uses every trunk muscle. They stabilise the trunk and ensure an optimum axial load.

C1 PULLOVERS
The latissimus dorsi muscle allows effective use of arms when walking.

E2 LATERAL RAISE
Strong shoulder muscles are essential when carrying a heavy load on your back.



B3/B4 FOOT/CALF
Strong ankle pronator and supinator muscles provide additional support and keep you stable on uneven ground.

*Selection

SHOW ME YOUR FEET!

INTERVIEW WITH BAREFOOT TRAINER MARCO MONTANEZ

Marco Montanez is a barefoot expert. He is offering workshops in many Kieser Training Studios where he shows us how to develop a new awareness of our foundations, i.e. our feet.

IN ORDER TO STAND WALK AND RUN PROPERLY WE NEED TO USE THE 26 BONES IN OUR FEET, THE 33 JOINTS, 60 MUSCLES, MORE THAN 100 LIGAMENTS AND INNUMERABLE TENDONS. HOWEVER, MANY OF US HAVE FORGOTTEN THAT, SAYS SPORTS SCIENTIST MARCO MONTANEZ. THE REASON: POOR SHOES. IN OUR INTERVIEW, THE BAREFOOT TRAINER EXPLAINS THE ROOT OF THE PROBLEM AND WHY WE NEED TO RELEARN THE ART OF WALKING.

Marco, most of us are born with healthy feet but develop foot problems later on. Why?
Our feet have to fit the shape of our shoes rather than vice versa. This causes foot deformities such as flat feet, fallen or high arches or heel spurs. More than 80 % of us have a lateral deviation of the big toe, known as hallux valgus. However, our feet underpin each and every movement. They act as a sensory organ and tell us where we are in space and how we interface with the ground. If the foundations are restricted or deformed in some way, this has a detrimental effect on the statics of the body.

In other words, things start to fall apart?
It's like building a house. If the foundations are wrong we cannot expect the upper floors of the building to be OK. Cracks will develop in the walls. Similarly if the feet are not working properly, the body becomes unstable and sooner or later the resultant forces will cause problems. I see this daily in my work. People come to me with back, knee, hip and neck pain. The first thing I do is to make sure that they are standing correctly, i.e. I start with the foundations.

You say that most people have to learn how to stand properly?
For most people, standing is a problem. Shoes with heels – whether low or 6 inches high – are a massive problem; they change the statics of the body. To avoid falling over, you have to adjust the knee, hips and lumbar spine. This not only affects the strength of individual muscle chains but also joint alignment. The result is pain. That is why I start off by asking people to stand so that they can feel the forces at work in their feet.

You also offer barefoot workshops in many Kieser Training Studios …?
I consider Kieser Training an excellent partner. It introduces customers gradually to training and does not overload them. It is also the only provider offering special training for the feet. I value its focus on the essential as it accords with my priority which is to concentrate on the fundamentals.

What does your training include?
I aim to create an awareness of our foundations. I use a foot pressure plate to analyse how pressure is distributed when we stand. In most cases, I find that pressure on the big toe is almost non-existent whereas functionally, it should be the final link in the muscle chain. When we stand, the big toe should be the anchor that claws itself into the ground and when we move, it should allow the foot to roll from toe to heel. If we activate the muscles of the big toe, this realigns the arch of the foot and strengthens overall leg-muscle function.

How do you achieve that?
In principle, I keep giving the feet new tasks to complete. I seek to raise awareness by using balance boards at different angles. I use the B3/B4, B8 and the J Tower to replicate and train the four separate movements of the foot, i.e. pronation, supination, dorsal flexion and plantar flexion. Finally, the training moves outside – barefoot of course. Running barefoot is the right way for humans to move. ■

1) Flexor hallucis brevis muscle
2) Tendon of tibialis posterior muscle
3) Flexor digitorium longus muscle
4) Tibialis anterior muscle
5) Flexor hallucis longus muscle

WHY WE GET SORE MUSCLES

THE WORD MUSCLE COMES FROM THE LATIN "MUSCULUS" AND MEANS LITTLE MOUSE. PERHAPS THE PERSON WHO GAVE THEM THE NAME "MUSCLES" THOUGHT THEY LOOKED LIKE LITTLE MICE RUNNING AROUND UNDER THE SKIN WHEN FLEXED. TRY CONTRACTING YOUR BICEPS AND YOU MAY UNDERSTAND THE ANALOGY. SO WHY DO MUSCLES BECOME SORE AFTER EXERCISE?

Sore muscles – the result of lactic acid?
"Definitely not," says Dr David Aguayo, a muscle physiologist who works in the Kieser Training Research Department. "The pain is caused not by a build-up of lactic acid but is evidence of a micro inflammation. If you do a physical workout that is more strenuous than usual, this can cause microscopic damage to muscle fibres and the muscles becomes sore within 24-48 hours of the workout. In contrast, lactic acid merely reduces pH levels in the cell. This can restrict the ability of muscle fibres to generate strength but does not cause sore muscles."

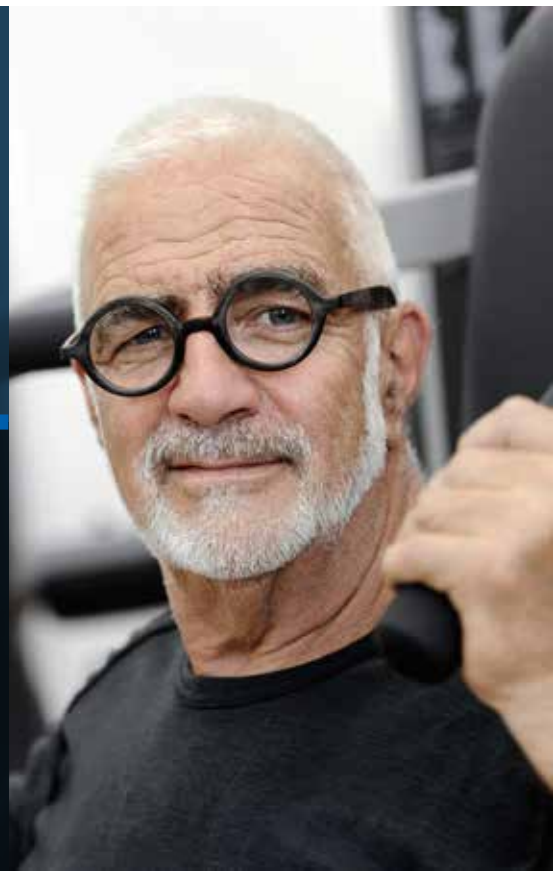
Sore muscles – are they essential for muscle build-up?
"From a physiological perspective, there is no direct linkage between muscle build-up and sore muscles," stresses Dr Aguayo. "Rather, it is evidence that you have put undue strain on a muscle. It is important, therefore, to give the muscle sufficient time to regenerate."

As a rule, the muscle soreness disappears within four days. However, this does not mean that muscle regeneration is complete. The regeneration period can take several weeks. As a result, our expert recommends that if muscles are extremely sore, you should avoiding working those muscles at the same high intensity.

"There needs to be a balance between exertion and regeneration," says Aguayo. "If you interrupt the repair process and train at an intensity that triggers further muscle damage, you can change the balance in favour of degeneration." If that happens, muscle tissue disappears and is replaced by fat and connective tissue. It is far better to put a light load on those muscles or to train different muscles and muscle groups.

Does stretching prevent sore muscles?
Does muscle stretching before or during training help prevent sore muscles? "We now know that this is not the case," says Dr Aguayo. "Admittedly, stretching can help reduce the perception of pain if muscles are already sore." ■

WERNER KIESER'S CORNER



THE WHEELS OF SCIENCE TURN SLOWLY – BUT THEY DO TURN

Just under 50 years ago I said in public that you could achieve everything there was to achieve from strength training with just one set. How did the experts respond? At best with laughter but more seriously there were those who asked why I lied.

In 1998, I wrote an article in "Leistungssport", a German-language journal of sports science. Its title was "How many sets with strength training?" Several of the trainers who read the article then tried my method. They wrote enthusiastically saying that they had confirmed what I had written. However, there were also letters from those who represented the prevailing doctrine – three sets or more per exercise. They were under pressure to justify their approach. Same "pay" for three times the "work"? That could not be possible!

One particular person adopted an ad hominem approach, attacking me as a person rather than the content of the article. I was merely a good business man seeking to get customers in and out of the door quickly. Even if that had been the case, it still does not mean that athletes should be wasting their time.

A new generation of scientists, working internationally and independently of one another, has now examined the content. They have not only confirmed what I had written but – and this surprised even me – have gone even further. These extremely interesting findings are the subject of a medical congress, "The Powerhouse of Life – Muscle Training 2015", to be held at the Hygiene-Museum in Dresden, Germany on 25-26 September 2015.

Werner Kieser

THE POWERHOUSE OF LIFE – MUSCLE TRAINING 2015: PRESENTATIONS HELD IN ENGLISH

James Fisher
School of Sport, Health and Social Sciences, Southampton Solent University, United Kingdom
"Advanced Resistance Training Techniques"

Professor Dr Bente Klarlund Pedersen
Centre of Inflammation and Metabolism and Centre for Physical Activity Research, Rigshospitalet and University of Copenhagen, Denmark
"Muscle as a Secretory Organ – the Role of Myokines Mediating Muscle-Organ Crosstalk"

Dr Jeppe Bo Lauersen
Department of Cardiology, Endocrinology and Nephrology, Frederikssund Hospital, Denmark
"Exercise Interventions to Prevent Sports Injuries"

Dr Doug McGuff
USA
"12 Minutes HIT Per Week – Is This Enough?"

Dr Patrick O'Connor
Department of Kinesiology, University of Georgia, USA
"Strength Training and Mental Health"

Dr James Steele
Centre for Health, Exercise and Sport Science, Southampton Solent University, United Kingdom
"Questioning the Aerobic/Resistance Training Dichotomy – Does Exercise Mode Impact Adaptations?"

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INTERNATIONAL MEDICAL CONGRESS: THE POWERHOUSE OF LIFE – MUSCLE TRAINING 2015

Kieser Training, in conjunction with GMKT (German Association for Medical Strengthening Therapy) and the Association for Sports Medicine in Saxony (a member of DGSP, the German Association for Sports Medicine and Prevention), is organising an international medical congress, "The Powerhouse of Life – Muscle Training 2015", to be held at the Hygiene-Museum in Dresden, Germany on 25 & 26 September.

Information and registration at:
kieser-training.de/fachkongress-dresden

In recent years, scientific research has produced consistent evidence of the importance of muscles for our organism and our physical and mental health. During the Congress, internationally renowned experts from Denmark, Germany, England, Switzerland and the United States will give an insight into recent findings and the value of High Intensity Training (HIT).

Speakers:
Professor Dr Wilhelm Bloch, James Fischer, Professor Dr Dr Jürgen Gießing, Professor Dr Wolfgang Kemmler, Professor Dr Bente Klarlund Pedersen, Dr Jeppe Lauersen, Dr Doug McGuff, Professor Dr Patrick O'Connor, Dr Marco Toigo, Bernd Sigl, Dr James Steele and Dr Joachim Wiskemann.

Topics include:
- Myokines – the muscle messengers
- Muscle training for the cardiovascular system
- Effective weight reduction
- Back pain therapy
- Prevention of sports injuries
- Muscle training for cancer patients
- Epigenetics and sport
- Psyche, thought and the sensation of pain

Join us on an exciting trip through the fascinating world of muscles.

The congress is targeted at medical professionals; two days are worth 13 CME points. ■