English edition 04/2010

Reflex 38

The Kieser Training Magazine

Strength training...

... makes you happy

"I'm on Cloud 9 – as is my back and my soul": This was the answer given by Heike Zedler, a customer from Berlin when asked last March why she came to Kieser Training. Strength training for the soul? That really made us curious and we wanted to find out more.

The 41-year old has been a customer of Kieser Training for two years. "I started because of serious disc problems." She initially experienced symptoms in the legs and found it extremely difficult to move her left leg. Her thigh felt numb. "It was if my legs had gone to sleep – permanently," was how she described this unpleasant feeling. On a holiday, she suddenly experienced a stabbing pain and realised that she had to do something. Something that would produce a more lasting solution than the acupuncture and massage that had only provided temporary relief. So she came to Kieser Training. Since she started training, her symptoms have disappeared completely.

Kieser Training costumer Heike Zedler

And where does the soul come into this? "I am much more optimistic about the future because I know that my symptoms will not return," explained the bank clerk. In addition, by doing Kieser Training she finds it easier to cope with the minor problems thrown up by daily life. She has a desk job and her work often triggered neck and shoulder pain. They have also disappeared. "Going to Kieser regularly is now part of my life," she explained, "it just makes me feel on top of the world!"

Foto: © Kieser Training/Michael Ingenweyen

A time bomb ticking

Whether it is obesity or back pain – statistics of children in the developed world show a dramatic increase of both conditions. That is the result of changing life styles, where television and computer screens have replaced the campfires, but without the need to go out and collect wood to keep the fire going.

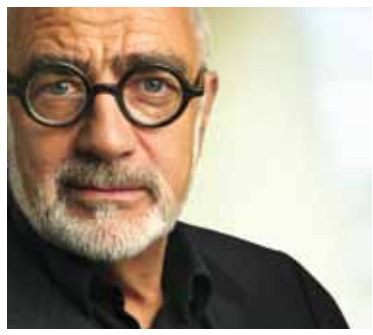
Today's young adults are the first generation ever to do less physical exercise than the biological minimum required for good health, and the situation is worse still in the next generation, in today's children and adolescents. Recent studies show clearly that adults find it much harder to ensure they get a healthy amount of physical activity if they had not done so as children. So with our children becoming more and more inactive, we are not only facing the problems of obese kids (some of them already developing adult onset diabetes) or children with musculoskeletal pain, but we are storing up many more problems for the later stages of life. The time bomb is ticking.
However, the standard fitness recommendation to get more cardiovascular exercise may not be the best advice for overweight, underactive children. The fact is, very few children choose to spend 20 to 30 minutes doing any kind of continuous endurance exercise, regardless of the benefits or incentives. Most youngsters prefer to play hard or run fast for 30 to 60 seconds, rest a minute or two, then repeat their performance, essentially alternating brief bouts of vigorous exercise with longer recovery periods.*
Ideally, children should have access to exercise programs that meet their physiological needs and match their personal activity patterns. Fortunately, it is possible to provide such exercise programs through sensible strength training.

Dispelling Myths & Misconceptions
Many people mistakenly believe that strength training is an inappropriate and unsafe activity for youth. Conceptually, this does not make sense. If strength training is safe and effective for your frail elderly clients (see our story on the back page of this issue), it is even better for healthy young people with full movement capacity and plenty of energy.
Another common misconception is that strength training can be detrimental to bone development in children, but this has never been demonstrated. However a study involving 9- and 10-year-old girls showed that bone mineral density increased by 6.2 percent in those who performed both strength and aerobic exercise, compared to 1.4 percent in those who did not strength train.
It is also said that for children, calisthenics exercises are safer than strength training exercises on machines. This is likewise untrue. Most children—especially those who are under-fit and overweight—cannot complete a single pull-up, bar-dip or push-up. However, it has been found that using resistance equipment, these same kids can adjust the weight load as necessary and are able to perform 10 to 15 controlled repetitions of every exercise.

Good supervison paramount
The training programmes offered by Kieser Training are geared to the needs and ability of the child or adolescent. Its medical evaluation guarantees a safe introduction to training. In the event of pre-existing problems, the doctor can modify the content of a programme or the way an exercise is done. Regular check sessions are provided to monitor not just the quality of the exercises but also the machine settings, as they can change rapidly when children are growing.
However, there is one physical restriction: The child or adolescent must be at least 1.50 metres tall to be able to use the Kieser Training machines.
(Further reading: "Faktum 09 – Strength training for children and adolescents" on www.kieser-training.com/en/quality/research-development or "Topic 3 – Strength training for children and adolescents" available at your Kieser Training facility.)

*A. Faigenbaum, "Strength training for children and adolescents" Clinics in Sports Medicine, Volume 19, Issue 4, Pages 593-619.

Dear Reader,



The arrival of the New Year is traditionally a time for resolutions. It was the view of the philosopher Harry G. Frankfurt that our ability to make resolutions was what distinguished us from animals. Unfortunately, Frankfurt was not so forthcoming about how to keep them.

Many who resolve to do something for their body at the start of the year give up within a few months. Why? Initially, everything is new, interesting and exciting. Friendly staff are on hand to provide instruction; we meet nice people and sense that something good is going on both physically and mentally. Moreover, we experience a sense of pride that we actually managed to take that first step. However, after the introductory phase, motivation can decline. The training session is no longer seen as a highlight in our day and so our will to continue wanes.

What is more, this happens at the very time when we are being called upon to train at a higher intensity in order to maintain progress. We need to get through this critical phase; if we manage to break through this "firewall," motivation becomes intrinsic and after a few days we experience a strong need for physical exertion. We have banished those dreaded inner demons and in those final seconds of each exercise we feel what it is like to push ourselves to the limit. What is more, we come back for more because we realise that something positive is happening within us. That has nothing to do with esoterics. The root cause – like everything – can be found in the physical. Neurologists and endocrinologists can provide us with the necessary evidence but what's important is that it makes those resolutions superfluous.
Werner Kieser

The Psyche

Photo: © Kieser Training/Michael Ingenweyen

In the German dictionary of psychiatry and medical psychology, the term "psyche" is defined as "the sum total of all conscious and unconscious mental processes with no differentiation between mind and soul and as a dualistic opposite to the biological and physical elements of Man." Often, it is used in the context of opposing pairs: body and soul or psyche and soma. "Even the ancient Greeks and Romans reflected on the psyche as a concept. Aristotle (384-322 BC) – doctor, philosopher and writer of "De Anima" (On the Soul) – defined the psyche as the soul that determines the thoughts, actions and feelings of Man. The assumption at the time was that the soul was located within the mind, which led to the supposition that the soul was immortal. This in turn led to the separation of the body and the soul.

It was many centuries before new ways of thinking found acceptance. It was Sigmund Freud (1856-1939), the founder of psychoanalysis, which at its core contained a method of treating "disorders of the soul," who achieved a breakthrough in the way we view the concept of body and soul. Nowadays, we talk less about the problem of the body and the soul. Rather we talk about the interaction between psychological and physiological processes. For example psychological strain may trigger unpleasant somatic reactions, gastric and intestinal disorders, migraine or skin complaints. Our idioms reflect this close relationship between the body and soul: "He got right under my skin," "He's a pain in the neck" or "I can't stomach him."

Modern psychosomatic medicine deals with the relationship between the soul and the body (psyche and soma). Psychosomatic and psychological disorders are treated not only by medication but also by psychotherapy. The aim of psychotherapy is to identify the root cause and so pave the way for positive changes. In addition, for several decades sports scientists have been looking at whether and to what extent physical activity can improve our mental health. Juvenal, a poet in Ancient Rome realized this when he wrote "mens sana in corpore sano" – a sound mind in a sound body.

Text: Petra Pribil

What effect does Kieser Training have on...

... our psyche?

Photo: © Kieser Training/Michael Ingenweyen

It has been known for decades that muscles affect health in previously unsuspected ways. Strength training protects us from back pain, osteoporosis and high blood pressure. It strengthens the cardiovascular system and stimulates the metabolism. More recently, there have been numerous studies demonstrating the positive effects of strength training on the psyche. If we make "progress" in the physical dimension, we experience an effect in our psyche as well. We realise that we have within us not just negative qualities but positive ones as well.

Physical activity reduces stress

A sign of a healthy psyche is an ability to cope successfully with stress. Stress can arise in a variety of situations, e.g. conflict in our personal life, problems at work or serious events in our life. For both our physical and mental health, we need to develop strategies for reducing stress; one such strategy is physical activity and I am not referring here to the levels of exercise undertaken by elite athletes. No, I am referring to controlled strength training – tailored to individual needs – which will allow each and everyone of us to achieve success without pressure and stress.

Strength training boosts self-esteem and mental well-being

Controlled strength training improves our mood, because it increases self-esteem and general satisfaction with life. It also improves health. If we have a positive perception of our body – in terms of the way it feels and looks – and if we recognise the need to take personal responsibility, we boost boosts our confidence. We feel more competent and socially we are a member of a group with an awareness of their health. Strength training requires concentration. We cannot think about anything else and so when we train, we are unable to ponder the things that are making us stressed. The root cause of these positive effects is not only psychological but also physiological. Strength training improves the hormonal balance, regulates the function of neurotransmitters – responsible for transmitting information in the brain – and improves general well-being.

Strength training not only looks after the muscles that literally keep us upright and improves our general body tone but also helps to strengthen the psyche and improve general confidence.

Participants in a current study by the Research Department of Kieser Training have discovered for themselves the positive effects of strength training on the way they feel and their personal self-esteem (see Reflex 37, Recent Research).

Text: Petra Pribil

Psychologist's tip

What to do about depression?

Everything seems hopeless, alien and grey – these are words used by those with depression when they describe how they feel. According to estimates from the World Health Organisation, depression affects some 121 million people worldwide.

The precise causes are still unclear but it is known that apart from a genetic predisposition, psycho-social factors also play a role. For example, unresolved internal or external stress can trigger what is known as exogenous depression. Whereas milder forms of depression can be likened to "feeling low," its severe or very severe manifestation often causes thought processes to slow down. Sufferers often feel very sad and succumb to a feeling of hopelessness, despair and agitation. Similarly, they often experience an unjustifiable anxiety. They find it a trial just to get through daily life and cannot make decisions or only after strenuous effort.

The treatment required by each client will differ and must be decided by a medical specialist or psychotherapist. Psychotherapy can help, as can medication. However, no less important is the ability of the client to heal themselves – physical activity is one of the ways in which this can be promoted.

Research by psychologist James Blumenthal and his team at the Medical Centre of the Duke University in Durham North Carolina demonstrated the connection between regular sport and improvements in the symptoms of a group with slight to moderate depression. This involved no medication at all. Actively confronting our own body, listening to its messages and feeling that we are taking personal responsibility makes us feel good and generates positive feedback from those around us.

Text: Petra Pribil

Petra Pribil
Psychotherapist and Supervisor

Reflex

Publisher
Kieser Training AG
Kanzleistrasse 126
8026 Zurich, Switzerland

CEO
Michael Antonopoulos

Editor
David Fritz
reflex@kieser-training.co.uk

Layout
Fritsch Publishing
St.-Paul-Straße 9
80336 Munich
Germany
www.fritsch-publishing.de

Reflex on-line
www.kieser-training.com

Reflex is published quarterly

Machine of the Month – D7

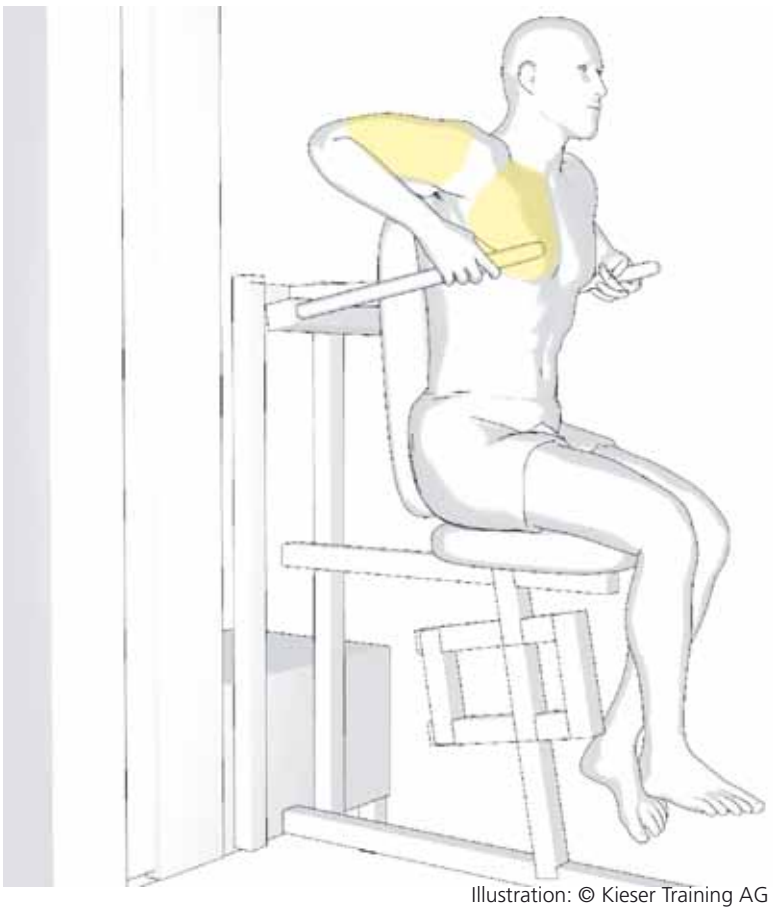


Illustration: © Kieser Training AG

The D7 – seated dip – is an exercise where you hardly have to think about isolating individual muscles as it uses almost every arm and trunk muscle, i.e. the pectoral, trapezius and triceps muscles. At the same time, it mobilises the entire shoulder. To ensure that your efforts are productive, it is important to keep the trunk still and to look straight ahead during the exercise. The more upright you sit the greater the load on the triceps. In contrast, if you bend slightly forward and keep the elbows pointing outwards, you increase the work done by the pectoral muscles. To do the exercise, press down on the handholds but don't fully straighten the arms. Then consciously lower the shoulders. This is invigorating and will mean that your arms are able to provide maximum support. In addition, the exercise has a "traction effect." This is both soothing and relieves stress as individual lumbar vertebrae are only minimally pulled apart – something akin to the well-known suspension.

Expert's Tip

In the last two editions, we explained the two phases of starting training and then building up strength. Customers who have been training for some time with Kieser Training and are quite happy with their strength level, might want to enter a third phase: Maintenance. As you do not need to go to full fatigue on every muscle in this phase, training will feel easier than during the build-up phase.

There are two ways to maintain strength at high levels for a long period:

1. If you have no health constraints, use a weight with which you can do an exercise for 90 seconds but only do the exercise for 60 seconds.
2. If you have health constraints, reduce the weight to 80 % and do the exercise for 90 seconds.

In both cases, you should do at least one training session per week. Every two months, check that your strength is still where you want it to be. To do this, complete each exercise with the original weight for 90 seconds. If you can achieve this without compromising training quality, you can continue with maintenance training. If not, revert to the build-up phase.

Anika Stephan
Research Department Kieser Training

Latest research – achieving training aims quickly

People start strength training for a wide variety of reasons. Some want to eliminate pain, others simply want more strength. In a current study by the Research Department of Kieser Training, the 531 participants were asked to select a specific aim before they started their six-month training period. About one third of participants wanted to "strengthen the back." 30.7% said "improve general strength." 10% wanted to "eliminate pain," 9% to "reduce pain" and 5.5% wanted to "eliminate a specific muscle weakness or strength deficit."

After 3 months, there was an interim survey. This revealed that the majority of participants were well on the way to achieving their personal aim. On average, 69.5% of the participants in the strength training group had achieved their aim whereas in the group doing 1:1 therapy, 68.1% had already achieved it. By the end of the study, the percentages had increased to 75.1% and 69.4% respectively.

In both groups – "training" and "therapy" – the results for individual training aims were equally good: Of those in the training group who wanted to "strengthen the back" or "improve general strength," an average of 74.3% and 74.9% respectively had achieved their aim. For those who wanted to eliminate pain, the average was even higher at 80.8%.

In the therapy group, an average of 74% wanting to "reduce pain" had achieved that aim. For participants who wanted to eliminate a "specific muscle weakness or strength deficit," 75% on average had achieved it.

The extremely good results in terms of the percentage achieving their aims were matched by extremely high rates of satisfaction with the quality of training. 97.6% of participants in the training group and 98% in the therapy group rated the training as "good" or "very good." Participants also awarded top marks for quality of service: 75.2% rated the service provided by instructors and therapists as "very good" and 24.6% as "good."

5 Questions ... on training technology

28 different exercise machines and two medical machines seat on the floor of a Kieser Training facility, waiting to get your muscles burning. The key attribute of these steely grey colossi is their efficiency.

Werner Kieser, why do we actually need machines?
If you have one leg that is weaker, say after surgery, you tend to protect that leg and so put more strain on the stronger one. This further increases the imbalance. Our training machines force you to put a load on the weaker leg, so eliminating the imbalance. In other words, the machines help you to target the weaker muscles.

What makes the machines so effective?
Our training machines can be adjusted to suit individual needs. Each has a system of pads, supports and restraints that allow you to isolate individual muscles and muscle groups. As a result, the training is targeted. Muscles are then subject to a precise concentric and eccentric resistance. The strength exerted by an individual muscle is not constant but changes as it moves. Our machines have a torque adjustment that takes account of this change in strength. By calculating the precise tension through the range of motion, the muscle is permanently under load and therefore strengthened throughout its range of motion, i.e. from maximum extension to maximum contraction. This ensures a high level of training intensity and means that each session takes just 30 minutes.

Is it safe to train on machines?
The strength machine is one of the safest things in the world. Each movement is guided and is done slowly. This minimises the strain on the joints. Daily activities such as going down stairs or jogging produce a higher exertion peak than even the hardest training session on a leg machine. Machines are also easy to use and there is no complicated process to learn. This provides security, particularly to those who are less strong or elderly. All machines are tested by the TÜV, the German Technical Inspectorate.

Who designs the machines?
I learned from Arthur Jones – the inventor of the first scientific training machines (Nautilus) – what was required for the design and construction of training machines. Our engineers produce the technical drawings and build the prototypes, which our Research Department then test. When we are sure that everything is right and the machine can achieve the desired effect on the target muscle, we start production.

The machines weigh as much as 846 kilograms. Why are they so heavy?
Minimum friction is an essential attribute. Our machines have two features, which allow us to eliminate friction almost completely:

1. Unlike conventional machines, we do not use standard guide shafts. The weight plates are raised from below, i.e. you don't pull on them. The weight plates "hover" and are kept in the centre by balls located on the surface.
2. To minimise the initial friction, we use a higher weight with gear reduction. If your range of motion is 50 cm and you raise the weight by only 25 cm, the initial friction is almost zero. Even if you do an exercise too fast, the weight does not develop its own momentum (this would reduce the load on the muscle itself). As a result, the machines are almost twice as heavy as conventional machines.

Column

If two people want the same thing then only one can prevail and by definition the other has to lose. In his social contract, Thomas Hobbes sought to pacify the resultant "war of all against all" in society: According to Hobbes, each of us must give up a part of our freedom to the sovereign who in turn guarantees security. In contrast Max Stirner in his work "The Ego and His Own" wrote as follows: "because each thing cares for itself and at the same time comes into constant collision with other things, the struggle for self-assertion is unavoidable." This struggle is unavoidable because only in that struggle with our own existence do we find ourselves and so win over ourselves. However Stirner's "Ego," which is merely a reflection of his own concern, a "concern that is neither the divine nor the human, not the true, good, just, free etc. but solely "his concern," needs more than Nietzsche's "Will to Power," it also needs strength. Whether it is just the strength to walk upright that gives him courage to take his place with certainty against the world and others – in order to catch sight of himself.

Dr. Siegfried Reusch
Editor-in-chief of journal
"der blaue reiter" – Journal for Philosophy
www.derblauereiter.de und
www.verlag-derblauereiter.de

The art of omission

The Swiss architect, Martin Eglin, explains why less is almost invariably more. He has implemented Kieser Training's austere architectural concept in London, Melbourne, Singapore and Germany.

Martin Eglin

Mr. Eglin, does the Kieser Training facility in Singapore look exactly like the facility in Berlin, Melbourne or Barcelona?
Yes, of course: clear design guidelines ensure the same image, the same materials and colours, the same type of lighting and naturally always the same machines.

So wherever you are in the world, you feel – if you will pardon the expression – as if you are entering a factory?
Yes, industrial architecture creates a rational and sober atmosphere. In architectural terms, the focus is on the essential so that you can concentrate on the short but exacting training session.

And so you create an atmosphere of anonymity...
When you are training, anonymity is a good thing. Nobody wants to watch their neighbour sweating. It's all about training the body, i.e. focussing on it. It's not about social interaction. In addition, anonymity is a great leveller; everyone feels equal. This impersonal atmosphere also means that the machines belong to nobody but to everybody.

And to do this you create an environment in which something is omitted rather than added?
In architectural terms, the art of omission consists of reducing materials to the minimum: wood flooring in the training area, grey ceramics in the wet areas. In addition, we use white paint for everything that is not floor or stainless steel – i.e. showers, lockers, lighting and reception units. We dematerialise, so to speak, the training "shell" so that it recedes into the background. Further reduction would be almost impossible.

As the architect you even economise on the walls...
This reduction also applies to the actual premises. We want a design that is clear and open. To do this we reduce the number of walls to the minimum. In visual terms, the lockers provide the separation between the training and changing areas. The showers are part and parcel of the overall spatial continuum. That creates privacy without the need for concrete walls and even doors.

Please can you help us with an architectural question: What is the purpose of the joint between the wood floor and the wall?
It provides an important benefit: We use a floating floor, which is subject to a high load and so expands significantly with the passage of time. In addition the parquet floor is like a wooden platform. It is not fixed to the existing concrete floor and does not touch the walls. This means that the area in which you do your strength training can be likened to a stage.

And this stage is always the same – irrespective of where in the world I tread the Kieser boards?
It's important that the floor looks natural and it should be sustainable. For that reason, we prefer local wood. For example in Melbourne, we did not use a typical beech floor but a similar but local wood. We do not apply design criteria too strictly as that would conflict with environmental considerations.

Interview: Michaela Rose

Three doctors who know what's good for them

"I started with Kieser Training in spring 2009. Early on, I made strong progress. After a fall in January this year I hurt my shoulder. After a short break, I felt a real urge to return to training. And that really helped speed up the healing process," Hildegard Haussmann explains.

So what? Many Kieser Training customers will tell you such stories. What makes this story stand out is the fact that the paediatrician Dr. Haussmann was 88 years old when she joined Kieser Training in Kreuzlingen, a picturesque small town on the Swiss side of Lake Constance. She did so on recommendation of an old friend from her student days, Edith Wolfsperger, who had joined back in 2006 at the age of 86.

A show of strength: Edith Wolfsperger, Hildegard Haussmann and Lore Deggeller

Photo: © Kieser Training

The ophthalmologist had started to feel a distinct weakness in her legs. "That's when I decided to act and then I read about Kieser." Both her orthopaedic specialist and her physiotherapist recommended that she should try it. "Now it feels much easier to get up from a chair than a few years ago," she describes one of the simple benefits. And she still enjoys cross-country skiing in winter and playing tennis.

That Hildegard Haussmann was making good progress from the start was also noticed by Lore Deggeller. "At first, I observed how this lady was having problems with the machines and could not even master minimal weights. But then I was quite astonished, how quickly she came to grips with the machines with the assistance of the instructors and she increased the weights continuously," the 1920-born General Practitioner commented.

She has been training twice a week since 2005. For the last 17 years, she has suffered from arthrosis in both her knees, which seriously impeded her physical activity. "To keep going, mentally and physically, has always been very important to me. Kieser Training offered me a safe option to mobilise my atrophied muscles again." It was her daughter and her grand-children who had recommended Kieser Training to her.

Scientific studies also show that targeted strength training can boost muscles and strength right into old age. Results of such exercise were all the more impressive the farther the loss of strength had already progressed. After twelve weeks of training, the old-age inhabitants of a nursing home showed an average increase in strength of 100 per cent. Their ability to perform every-day tasks rose by over 20 per cent after just twelve weeks.*

Strength training can maintain the independence and mobility of the elderly and thus provides for a higher quality of life. That is what our three medical doctors working out in Kreuzlingen confirm. They are also living proof that it's hardly ever too late to start with strength training and benefit from it.

"I come to Kieser Training because I want to remain able-bodied and independent as I grow older," Hildegard Haussmann summarised her motivation.

*(Connelly, D. M.: Resisted exercise training of institutionalized older adults for improved strength and functional mobility: a review. Topics of Geriatric Rehabilitation, 15 [2000]: 6-28).