

# REFLEX

THE KIESER TRAINING MAGAZINE

# 52



## AIMING HIGH WITH THE FAMILY

**SHEER ROCK FACES AND TRICKY CHALLENGES DEMAND STRENGTH: ANIKA STEPHAN (36) AND NICKY HOCHMUTH (35) ARE SPORT CLIMBING ENTHUSIASTS. THEIR SON JAKOB IS ONLY 20 MONTHS OLD BUT HIS PARENTS ARE PROOF THAT A BABY AND AN ACTIVE SPORT ARE NOT INCOMPATIBLE.**

“For us, climbing is a must,” says Anika Stephan with a laugh. Anika is a sport scientist in the Kieser Training Research Department and almost every weekend, she and her partner Nicky can be found climbing. “For us, the question was not whether we could climb with a baby but how.”

It works best with like-minded individuals as the couple first discovered when they went on climbing holidays with friends. “I first met them when I joined the junior section of the climbing club at age 15,” explains Nicky. “Now most of them are parents themselves and so even before Jakob was born, we knew that climbing could work well with children.”

Two months after giving birth, Anika returned to climbing whilst on holiday in Spain. “I started off very cautiously,” she remembers. “I had lost some of my technique and strength. In addition,

there is a change in your perception of risks when you know that your child is waiting for you down below.” Kieser Training helped Anika regain her fitness quickly: “I trained until I was 8 months pregnant. I am convinced this was why I had an easy pregnancy and recovered so quickly after the birth.”

Since then, the family have become regular faces on the climbing scene and once a year they go on a climbing holiday with some 20 other adults and children. Whilst some of the adults look after the children on the ground, others climb the rock faces. Of course, they change roles regularly, so that everyone has their turn.

Nicky reckons that he can enjoy his hobby within family life: “Climbing is an important part of my personality. Nature provides me with endless new climbing challenges – physical, mental and also creative. I find that fascinating. Climbing is an escape from the daily routine.”

Nor do Jakob and the other children miss out. The younger ones scramble over the rocks whilst the older ones



*Time to climb: Anika, Nicky and toddler Jakob enjoy spending time together in nature.*

climb the easier routes. “For children, climbing is a basic need and with us they can satisfy it in full,” says Anika. It’s perfect! Scrambling and climbing promote muscle development in children and train their coordination and motor skills. ■

## AUSTRALIA GEELONG

**IN MARCH, KIESER TRAINING OPENED ITS SIXTH STUDIO IN AUSTRALIA – IN GEELONG, VICTORIA**

Kieser Training opened its first studio on the Australian continent in South Melbourne more than six years ago. Since then it has opened studios in Brighton, Camberwell, Essendon and Mont Albert and the latest in Geelong is yet another glorious location.

Tony Smith, Managing Director of our Australian studios, welcomed the new facility in the port city southwest of Melbourne: “The people here love physical activity and sport – whatever their age – and we are looking forward to working with our new customers.”

If you love nature, a stunning coastline, surfing beaches with impressive breakers, magnificent golf courses, attractive wineries and effective strength training, Geelong is just the place for you!

Don’t forget that your membership card allows you to train in any of the 140 Kieser Training studios worldwide and so there is no need to forego training whilst on holiday. ■

# STRENGTH FOR CLIMBING

SUPPLE AND STRONG FOR CLIMBING

## GRADE: 7A

Kane Hare More Hain,  
Montanejos, Spain



Using supple, flowing movements, experienced sport climbers can conquer even the smoothest of rock faces and steepest of overhangs. Arms and legs are constantly on the move and the body's centre of gravity is never static. Sport climbing involves the whole body. The magic words are technique and tactics for they save on strength. A skilful combination of climbing-specific training and systematic muscle training can produce a certain lightness that improves your climbing performance.

### Strength prevents a hunched back

If you are new to sport climbing, strength training is an excellent preparation. It strengthens the muscles required for safe and enjoyable climbing. Weak muscles soon fatigue and so you have insufficient time to concentrate on your technique and work out the right foot and handholds. There is a tendency for aspiring climbers to develop an excessive curvature of the spine as pectoral muscles are much stronger

than back muscles. The C5 is ideal for straightening the back: It stretches the pectoral muscles and by working the deltoid, trapezius and rhomboid muscles it strengthens the shoulders. However, sport-specific muscle training not only corrects climbing-acquired imbalances. It also increases performance and flexibility and strengthens ligaments and tendons.

### One step at a time

Many climbers underestimate the importance of leg strength: Often, you are balancing on one leg with only the toes in contact with the rock whilst you raise the other leg up and to the side in order to reach the next foothold. This requires a strong, elegant movement from the hip onto the foot. The A3 "Abductor" and B6 "Leg Press" exercises give you the strength and flexibility needed for such movements.

It is often necessary to take as much weight as possible on the toes as this

reduces the strain on the arms and hands. Sometimes, you need to anchor your toes on a tiny edge, rock intersection or flake. Foot and calf muscles must be strong to ensure the movement is controlled as you place feet onto such rock formations, particularly when crack climbing or climbing along a rock intersection. Training on the B3, B4 and J1 is highly recommended for this purpose.

### Firm grip

Of course, strong hand and finger muscles are essential for rock climbing. There are a variety of different grip techniques that can be used to avoid premature fatigue – assuming of course that the nature of the rock face gives you this flexibility. However, to ensure the hands stay firmly attached to the rock face, you can train the muscles of the lower arm and the hand flexors using the H1, H5 or H7 machines. In addition, each movement of the arm involves the latissimus dorsi

muscle. The C1 machine is recommended for training this "climbing muscle". In addition, climbing puts a strain on the shoulder muscles and so it is important to strengthen the rotator cuff muscles on the E4/E5 machine – a machine exclusive to Kieser Training.

### Keeping an ever watchful eye

However, trained muscles are important not just for the climber. The person standing at the foot of the cliff holding the rope must keep a close eye on their partner and this puts a considerable strain on the neck muscles. The G5 can help as can the Cervical Extension Therapy Machine: These machines stretch the tense neck muscles and strengthen the deep extensor muscles originating in the cervical spine. The effect is both soothing and positive; symptoms abate or disappear completely. ■

# STRENGTH TRAINING DURING PREGNANCY KEEPS YOU MOBILE AND GIVES YOU ENOUGH STRENGTH FOR TWO

**PREGNANCY IS NO REASON TO STOP TRAINING – QUITE THE REVERSE. MODERATE STRENGTH TRAINING KEEPS YOU FIT AND MOBILE. IT HELPS PREVENT UNDUE WEIGHT GAIN, BACK PAIN AND DEVELOPING DIABETES DURING PREGNANCY.**

Pregnancy causes major changes in human posture. Your weight increases and centre of gravity moves forward. The instinctive response is to arch your back, which means extra work for skeletal muscles and often causes tension and back pain radiating into the legs.

Pregnancy also causes hormonal changes. The levels of relaxin and oestrogen increase, which slackens connective tissue, tendons and ligaments. This in turn increases the load on the joints, particularly the hips, knees and ankles. In addition, the entire pelvic ring slackens and stretches in preparation for childbirth.

Moderate strength training during pregnancy helps prevent undue weight gain, back pain and diabetes

of joints, e.g. training the small and middle gluteal muscles on the A3 increases the stability of the pelvic ring. At the same time, regular training increases the strength and resilience of ligaments and tendons that have become lax as a result of hormonal releases during pregnancy.

Nor, of course, should you forget the legs. As your weight increases, you need more energy to sit down, stand up, walk or climb the stairs. In other words, you need enough strength for two. In order to stay mobile and agile, I highly recommend the B1 and B7 exercises. Research has shown that training the leg extensors during pregnancy increases their strength by 56% and training the leg flexors increases theirs by 39%.

### Other good reasons why you should train

In addition, strength training and regular exercise help prevent excessive weight gain, reducing it by some 12% – provided of course that you eat sensibly. This can mean a couple of kilograms less bodyweight to carry around.

In addition, the body mass index prior to the pregnancy is a prime factor in determining the risk of high blood pressure and diabetes during it. Both are much less common in women who did both endurance and strength training before their pregnancy than in women who only did endurance training or no exercise at all. For those with a sugar problem, strength training halves the risk of having a heavy baby.

And last but not least: Pregnancy and childbirth increase the load on the pelvic floor muscles. Intensive pelvic floor training on the A5 helps keep these muscles strong and elastic. It can

prevent incontinence during and after pregnancy and improves the support available to your growing baby. In addition, well-trained pelvic floor muscles relax more easily during the birth and so the birth itself is easier.

Providing your pregnancy is normal and without complications, training can continue up to the time of the birth. In the event of complications, the decision must rest with your obstetrician. To sum up: Maintain your fitness and physical independence during pregnancy. Please ask us for advice on safe and healthy training. Good luck! ■

Text: Dr Michael Seethaler, gynaecologist and obstetrician

1) Strong back for the baby bump  
2) Strong, flexible pelvic floor muscles for support during pregnancy and childbirth  
3) Strong leg and gluteal muscles to support the extra weight



## TIPS FOR TRAINING CORRECTLY DURING PREGNANCY

- Attend the normal ante-natal appointments.
- Ask us for advice and book an accompanied session.
- We will adapt your programme to your pregnancy and show you how to train safely.
- Train for 30 minutes twice a week.
- Be particularly cautious about increasing machine weights or don't increase them at all.
- Don't train to your limits. Train at low to medium intensity for 90-120 seconds.
- Breathe normally and avoid forced exhalation.
- If connective tissue is weak, wear compression socks to avoid varicose veins.
- Drink enough.
- Listen to yourself and your body.

# STRENGTH TRAINING AND RESEARCH INTO CHILD-ORIENTED STRENGTH TRAINING FOR MORE STRENGTH AND A GREATER ENJOYMENT OF EXERCISE

A child's muscles will only develop fully if used intensively. However, in many cases this is actually the problem as many children fail to do enough exercise or work their muscles regularly. As a result, muscles and strength fail to develop fully.

The solution for these young couch potatoes is development-oriented strength training! It not only increases strength but in the period prior to puberty, it helps stimulate a child's appetite for physical activity. This evidence came out of a recent study by PEZZ, the Center for Pediatric Endocrinology in Zurich. PEZZ specializes in child and adolescent exercise medicine.

For 19 weeks, 102 school children, aged on average 10-14 years, either

did strength training twice a week or normal PE lessons. The boys in the strength training group increased upper body strength by 38% and the girls by 33%. In the control group, the increase was only 11% and 12% respectively.

Particularly interesting was the fact that the level of other physical exercise taken by the boys in the strength training group increased by 10%: "The process of strength training had a self-reinforcing effect," says the institute's director, professor Urs Eiholzer: "More strength in-

creased the appetite for exercise and when the boys then did more exercise, they increased their strength further. This in turn further increased their appetite for exercise." The lack of change in the girls' appetite puts Eiholzer

down to the fact that girls start puberty at an earlier age.

Professor Eiholzer, a specialist in child and adolescent medicine has long been calling for child-oriented strength training – particularly in schools. "This can be achieved with simple exercises and few resources. In addition to the developmental and health benefits, an increase in physical activity also improves perception, language, abstract thinking, emotion, social skills and the willingness to learn. In other words, it has an effect on the development of personality and intelligence as a whole." ■

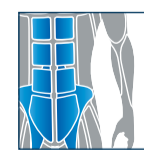
Source: Meinhardt U, Witassek F, Petrò R, Fritz C, Eiholzer U. Strength Training and Physical Activity in Boys: a Randomized Trial. Pediatrics 2013; 132 (6): 1105-11.



## PROGRAMME FOR CLIMBERS\*



**A1 HIPS**  
A stable torso increases body tension and so helps when using widely-spaced footholds and whenever good balance is required.



**A2 HIPS**  
Strong front torso muscles are particularly useful for maintaining foot contact with the rock whilst climbing an overhang.



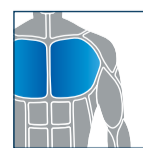
**A3 BUTTOCKS**  
This exercise increases the active mobility of the hips – particularly important if you are climbing with legs splayed.



**B6 LEGS**  
You need strong legs in order to push the body up to the next foothold.



**C1 BACK**  
The latissimus dorsi muscle is the "climbing muscle". It allows you to raise the body.



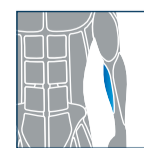
**D5 CHEST**  
Strong pectoral muscles are essential in order to maintain adequate contact pressure when ascending a smooth rock surface.



**J3 BACK, SHOULDERS AND ARMS**  
This exercise strengthens the muscle groups needed to pull yourself up.



**E4/E5 SHOULDER**  
The junction between the arm and torso is under considerable strain and so must be strong and stable.

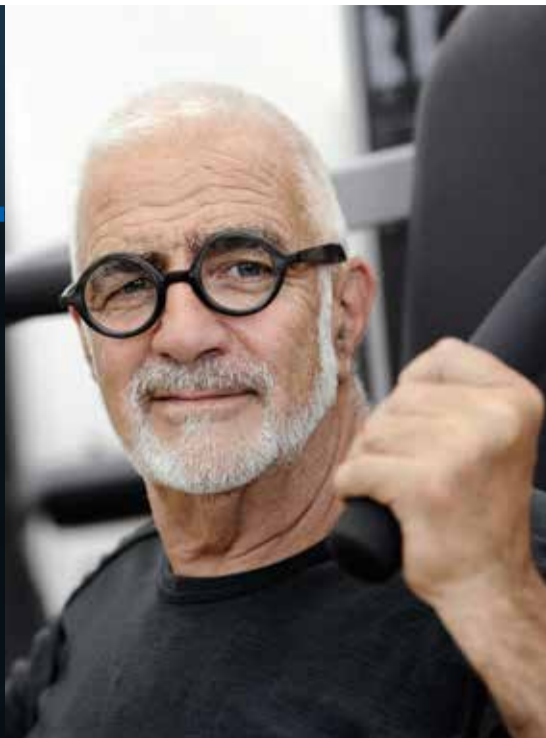


**H5 LOWER ARM MUSCLES**  
Strong forearm muscles help you maintain a secure grip.

\*Selection

## KIESER'S CORNER

### HOW HIGH INTENSITY TRAINING BECAME A HIT



It was 120 years between Copernicus announcing his theory that the sun did not revolve around the earth but the reverse and its "recognition" by the official knowledge administrators. Nowadays, the period is not quite that long as sport scientists in mainland Europe have now responded to an innovation that is only 40 years old: HIT (High Intensity Training). There was one exception though: Professor Jürgen

Arthur Jones was the first to publicize

#### THE HIT SYSTEM IN 1972

Gießing from the Institute for Sport Sciences at the University of Koblenz-Landau who first published an article on the subject in 2000 in the journal "Leistungssport" (Performance Sport).

Arthur Jones was the first to publicize the HIT system in 1972 in the United States. Jones invented the Nautilus machines, the first training machines constructed according to physiological criteria. In his Nautilus Bulletins 1 and 2, he described in detail the reciprocal effect between

training intensity and volume. In other words, intensity should be kept as high as possible as it is this that produces the effect. The logical response to this finding is the so-called one-set training where each exercise is done to local muscle fatigue.

Kieser Training has advocated this method since that time and it is our current practice. It would seem, however, that we are now experiencing a paradigm shift – HIT is becoming a trend. A time lag of 40 years may be relatively short compared with those in the Middle Ages but in a dynamic age such as ours, you have to wonder whether it is still too long. After all, it is nothing less than a waste of human energy and time.

Even today, most sport scientists still recommend three sessions of three-set training per week. Compared with the HIT system of twice a week, the former takes more than twice as long. If we gross that up to 10 years, that equates to unnecessary training of 100 weeks at 40 hours per week.

Who would be prepared to work three times as long for the same salary?

Werner Kieser

## ISOTONIC DRINKS FOR INTENSIVE ENDURANCE TRAINING

When we sweat, we lose water. However, we also lose electrolytes such as sodium chloride (common salt), magnesium and potassium. To work properly, our body – including our muscles – need both. To replace fluids lost during a 30-minute strength training session, you just need to drink enough water as you will replace the electrolytes when you next eat. However, if you are sweating for longer than 30 minutes, you should use an isotonic drink containing electrolytes in isotonic concentration.

You can buy ready-made isotonic sports drinks or they are very simple to make. If making your own, we recommend a 6 % carbohydrate solution: Mix 60 grams of glucose, maltose or maltodextrin with 1 litre of mineral water. Add a pinch of common salt – this equates to about 1-2 grams of sodium chloride. If exercising for any length of time, drink about 250 ml of this mixture every 15 minutes. A good alternative is natural, mineral-rich water mixed with fruit juice – in proportion 2:1.

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## WATER, THE ELIXIR OF LIFE WHY DRINKING IS SO IMPORTANT

The adult body is 60-70 % water. If you weigh 80 kg, 48-56 litres is water! Water acts as transport for blood and lymph. It is an important component of cartilage, menisci and intervertebral discs. It acts as a solvent, e.g. for sugars and salts. It is a partner in biochemical reactions. As we perspire, water also regulates the body temperature through a system of evaporative cooling.

Every day, we lose about 2.5 litres through urine, stool and sweat – even when resting. Unless we drink enough liquids and eat enough solids to make up this loss, we can only survive for three to four days.

A mixed diet contains about 700-800 millilitres of water. The rest of your daily requirement comes from drinks. If you increase your consumption of vegetables, salads and fruits with a high water content, you can drink slightly less. It's easy to check. Just keep an eye on the colour of your urine: it should be light in colour and clear. If it is dark yellow, it means you are short of water.

Well-trained athletes can lose up to 2.5 litres of water per hour if exercising hard and in hot weather. However, performance starts to decline after a loss of only 1-1.5 litres.



### MUSCLE FUEL

Our muscles also need water to function properly

This is because sweat contains not just water but also numerous electrolytes, such as sodium chloride (common salt) magnesium and potassium. If you lose more than this, muscle coordination is disrupted and the result is cramp.

Don't wait until you are thirsty but drink enough liquid during and after physical exercise. After 30 minutes of

strength training, you only need to drink water. This will be enough to replace the liquid and the loss of electrolytes is remedied with your next solid food. However, if the activity involves perspiring for hours on end, use a concentrated isotonic drink containing electrolytes (and energy). ■

Text: Dr Nicolai Worm