

NEW MAN AT THE HELM: MICHAEL ANTONOPOULOS

Michael Antonopoulos (45) has been with Kieser Training for 13 years, seven as CEO. In January, he and board member Nils Planzer acquired the company from Werner and Gabriela Kieser. We spoke with the new owner.

Mr Antonopoulos, you are the new man at the helm of Kieser Training. How does it feel to be the successor to Werner Kieser?

I am grateful for the opportunity: It was the result of a process based on mutual trust. At the same time, I am, of course, mindful of the responsibility. Werner Kieser was a pioneer in the field of health-oriented strength training and I have the utmost respect for his life's work. One thing is clear: Nobody will ever be able to step into his shoes but fortunately he and Gabi will remain with us – Werner as mentor and generator of ideas and Gabi as Chair of the Board of Directors with particular responsibility for medical issues. Ownership may have changed on paper but in reality it is business as usual. The chemistry between us is right and that is what matters. The role that each of us plays is irrelevant. Werner Kieser's aim has been to strengthen the world and to that I remain committed.

What about the future?

We will maintain the stringency and clarity of the concept. Kieser Training has a clear position and for the last 50 years has stood for efficient strength training. We need to preserve that. Our efficiency is what distinguishes us from others in the sector. No other provider has this level of experience or expertise. We deliver everything from a single source – from the research stage, to the

development and production of our own training machines and right through to issues such as staff training. In everything that we do, the overriding priority is the benefit to customers. This applied under Werner Kieser and will remain so in future. Having said that, we shall of course seek to expand our market position and develop the product further.

How did you come to join Kieser Training?

Via a circuitous route: In 2003, I was planning to take over a 200-bed hotel on Rhodes in Greece with a friend whose family had a background in tourism. But it wasn't to be. My friend died of cancer and without him I did not want and was no longer able to realise my dream. When in 2004, there was a vacancy for the head of finance at Kieser Training, I applied and was appointed. I have now been here for some 13 years.

That sounds awful to lose both friend and dream at the same time ...

The loss of the dream was not so important. However, the loss of a friend was and it shapes me to this day. It taught me to put things into perspective. Basically, I am somebody who looks forward and has a positive attitude to life. That experience also taught me to put an even greater value on health.

Do you yourself train?

Regularly! I started strength training when I was 16 years of age and a member of the junior football team of the Grasshoppers Club in Zurich. Strength training was part of the winter training schedule – three days a week. Over the years, strength training protected me from injury. Today, I train with Kieser Training – differently of course and more effectively.

“I remain committed to Werner Kieser's aim of strengthening the world.”

SUMMER, SUN AND A BEACH BODY

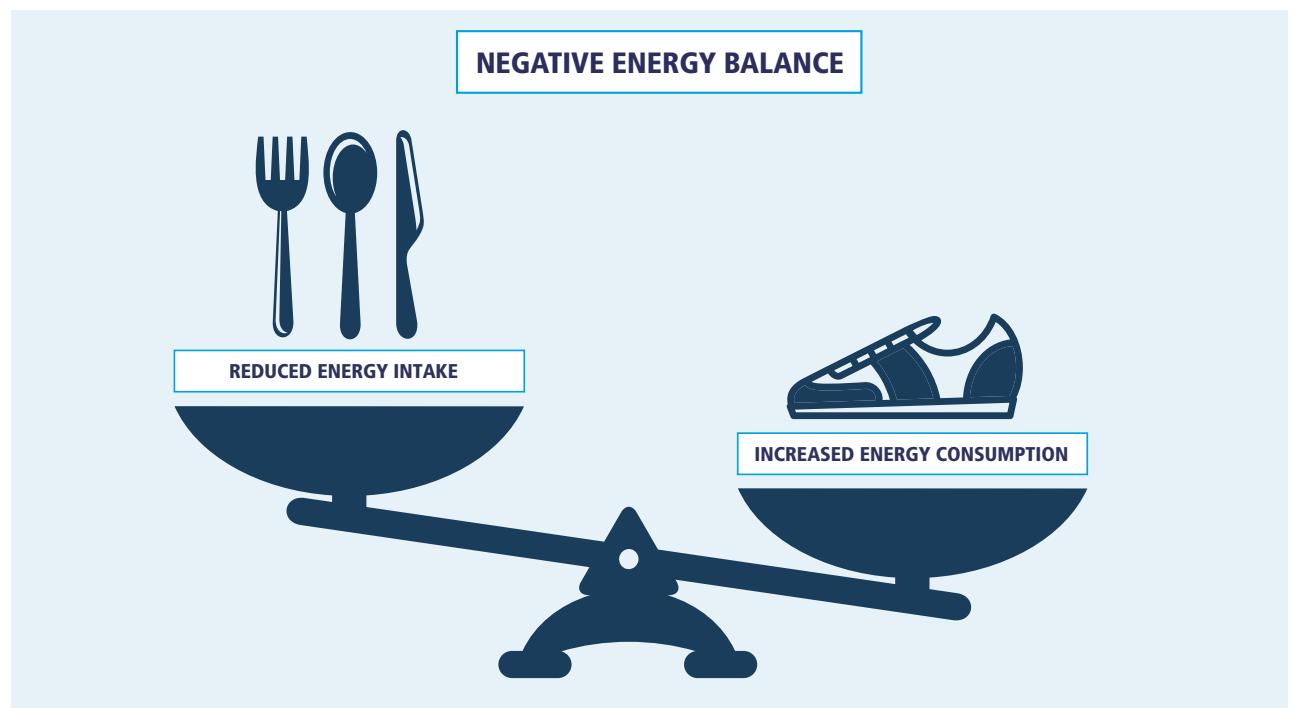
There are many reasons why regular, intensive muscle training is good for you. For example, if you want to lose weight, you must achieve a negative energy balance.

Your body needs energy 24 hours a day. Your total expenditure of energy per day is measured in kilojoules. The amount you expend is a combination of your basal metabolic rate and your active metabolic rate. The basal metabolic rate is the amount of energy that the body needs when horizontal at rest, with an empty stomach and in an ambient temperature of 28 degrees Celsius in order to maintain the basic functions essential for life, e.g. heart, breathing, blood flow, digestion and temperature. It depends upon gender and age as well as your height and weight. Muscle mass is the biggest contributor to body mass and so plays a crucial role in energy consumption. In contrast, your active metabolic rate is the amount of energy expended during physical activity, i.e. it depends upon how often you do physical activity and at what intensity.

Generally speaking, if you want to lose weight, you must achieve a negative energy balance. Your energy balance is the difference between energy intake and energy expenditure. It is negative if you consume more energy each day than you take in. There are three ways to achieve this.

STRATEGY 1: REDUCE ENERGY INTAKE

To achieve a negative energy balance, you can reduce your intake of energy. This forces your body to obtain the energy it requires from its own deposits. The problem with such traditional diets is that the body may obtain some of the energy it requires from muscles rather than fat deposits, with disastrous results: Loss of muscle mass lowers the basal metabolic rate. If you are expending less energy than before the diet, then you need take in less energy. It is this that makes it difficult to keep the weight off permanently on completion of a diet. However, if you start to eat "normally", this triggers a yo-yo effect and you put on weight. By consuming sufficient protein, you reduce the risk of depleting muscle and bone mass.



STRATEGY 2: INCREASE ENERGY CONSUMPTION

Another strategy is to ratchet up energy consumption. Intensive strength training brings about a sustained increase in the basal metabolic rate. Each training session stimulates the build-up of muscles for up to 72 hours. Both require energy. In other words, you can use the effect of training and the resultant additional muscle mass to increase your daily energy expenditure.

In addition, it makes sense to increase your active metabolic rate by doing some physical activity, e.g. housework or gardening, brisk walking for 30 minutes each day, climbing stairs or sport. As a general rule, the more muscle mass you have and the more comprehensive and intensive the physical activity, the higher your total daily energy expenditure.

STRATEGY 3: REDUCE ENERGY INTAKE AND INCREASE CONSUMPTION

To achieve the maximum possible effect, it makes sense to combine Strategies 1 and 2. Strength training – combined with a diet rich in protein – is the best way to prevent the loss of fat-free body mass and encourage the build-up of muscle. This increases energy expenditure on a sustained basis.

1 Joule (J) = c. 0.24 calories (cal)

1 kilojoule (kJ) = 1,000 J

1 kcal = 4,187 kJ

Potatoes (peeled, steamed)/100 gram
77 kcal/322 kJ

How to be strong

As well as strength training, you need an adequate supply of protein or amino acids in order to build up muscle. The relevant factors are the quantity of protein, its time of consumption and quality.

Quantity: According to recent findings, the recommendation for healthy people is 1.5 to 2.2 grams of protein per kilogram of body mass.

Frequency and time of consumption: Ideally, you should consume a portion of food containing 20 to 30 grams of protein every 3 to 4 hours. A portion consumed after strength training is particularly effective.

Quality of protein: The quality of dietary protein partly depends upon the number of essential amino acids it contains. In addition, the amount of processing required and its digestibility are relevant. There are various methods for evaluating the quality of protein, e.g. the Biological Value (BV) and the Protein Digestibility Corrected Amino Acid Score (PDCAAS).



IMPORTANT FOR MUSCLE BUILD-UP: STRENGTH TRAINING PLUS PROTEIN

In order to accelerate the build-up of muscle protein, you need both sufficient protein and intensive strength training.

Our muscle fibres consist primarily of proteins: For example, the protein filaments myosin and actin together with the proteins tropomyosin und troponin are responsible for muscle contraction. Titin – the largest known human protein molecule – is also a muscle protein. It is responsible for regulating the alignment of actin and myosin filaments within the muscle fibres. Proteins are also found in cellular fluid (sarcoplasm), our powerhouses (mitochondria), protein factories (ribosomes) and last but not least the muscle-building enzymes. In short, a muscle cannot function without proteins.

Body proteins, like dietary proteins, consist of amino acid chains of varying lengths. Our body needs a total of 20 different amino acids for protein synthesis whereby a distinction is made between essential and non-essential acids. Our body is able to produce or reuse non-essential amino acids because they are released by the break-down of proteins. In contrast, we need to supply the body with essential amino acids. It is the number and layout of the amino acids in the chain that determine the three-dimensional shape and so the function of a protein.



In principle, the body builds up and breaks down muscle protein on a continuous basis. In order to build up muscle, the rate of build-up must be higher than the break-down rate, i.e. the net protein balance must be positive. To achieve this we should do sufficient strength training and eat a varied,

protein-rich diet. Our diet should ensure that the required amino acids are available at all times for use as a raw material in the synthesis of muscle protein. Meat, fish, whey and other milk products, eggs, nuts, pulses and soya products are all sources of high-quality natural proteins.

20 g protein contained in	Quantity [g]
Dried Soya beans	60
Boiled Eggs	150
Chicken breast	80
Wholewheat	280
Salmon	100

Food	Quantity [g]	Energy/Calories [kJ/kcal]	Fat [g]	Carbohydrate [g]	Protein [g]
Dried Soya beans	100	1742/416	17,5	29,2	35
Boiled Eggs	100	643/154	11,2	0,7	13
Chicken breast	100	691/165	3,6	0	31
Wholewheat	100	1294/309	2	61	11,7
Salmon	100	595/142	6,3	0	19,8



HOW TO AVOID BEING OVERWEIGHT THE CENTRAL ROLE OF MUSCLE PROTEIN

If energy intake exceeds energy expenditure on a sustained basis, we normally become overweight or obese. The role played by our muscles in prevention is still not sufficiently recognised.

DR SC ETH DAVID AGUAYO, RESEARCH DEPARTMENT KIESER TRAINING

The process by which the body builds and breaks down muscle protein contributes significantly to the resting energy expenditure of muscles. The amount of energy expended in this way can vary considerably and admittedly the in-vivo measurements of muscle protein synthesis rates are very vague. However, estimates show that

based on an average muscle mass of c. 50 kilograms, the energy consumed by the muscles of young men is c. 500 kilocalories per day. In contrast, the equivalent figure for older women is only c. 120 kilocalories because they have less muscle mass.

An example: A loss of muscle mass of 1 kilogram reduces daily energy expenditure by c. 10 kilocalories. If we are injured

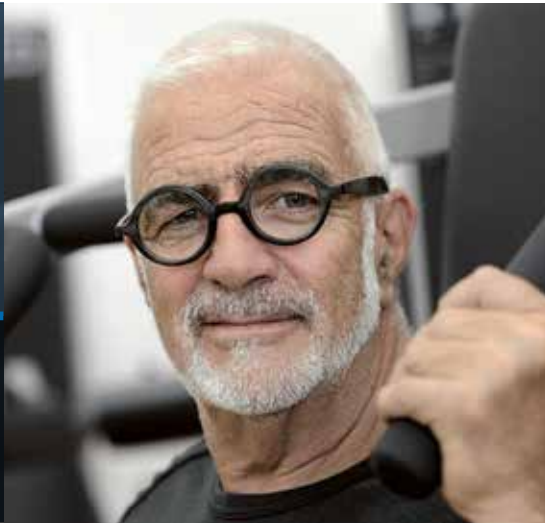
or unwell and lose say 5 kilograms but keep our energy intake the same, the daily excess of energy is 50 kilocalories. This equates to an increase per day of about 6 grams of fat and in a full year that amounts to 2.5 kilograms. The same applies of course in reverse: If we raise our basal metabolic rate by increasing our muscle mass, daily energy expenditure is increased by 10 kilocalories for each kilogram

of muscle mass. As a result, we consume more and more of our fat reserves.

What does that mean? Over a longer period, even minor differences in muscle mass can have a significant impact on our energy balance. Maintaining or increasing the amount of muscle mass is crucial if we want to avoid becoming overweight or obese.

WERNER KIESER'S CORNER

STUBBORN? RESISTANT TO FASHION OR WHAT?



A review of the 50-year history of Kieser Training generated questions and a reporter from the German weekly magazine STERN asked me: "Why are you resistant to changing trends in the industry?"

Resistant? That sounds strenuous as if it were a battle. The answer is simple: I had different ideas and my ideas were clearly less hectic than those of the industry. Since 2002, we have had our own Department for

Research and Development. In 1998, I told Vert Mooney, a well-respected Professor of Orthopaedics in the United States, that I intended to work more closely with universities. His answer was prompt: "Why do you need a university? You have almost 200,000 customers who are basically all doing the same thing. No university or clinic in the world has such a database! Recruit several young scientists of integrity and do the research yourself." We have been doing just that for 15 years. Others working in the industry often tell me that they regard this as pure luxury, a quirk or possibly a consequence of my study of philosophy.

In reality, the Department represents a saving. We are not into trends. We focus on the human musculoskeletal system and it does not change that quickly. We research its development and its maintenance. To that

end, we maintain global links with scientists working on similar issues. From this emerge new processes and technologies that provide effective muscle strengthening, for example, machines for muscles that despite their importance for health have so far received little attention from the industry, e.g. the B3 and B4 for strengthening the ankle or the A5 for strengthening the pelvic floor muscles.

Following every fashion or even being the first to adopt a trend is a marketing concept – and a strenuous one – but it is not one adopted by Kieser Training. For us, the benefit to the customer is our top priority.

Werner Kieser

I PREFER SILENCE

Eva Durband sits relaxed in her living room on a Le Corbusier LC2 chair – its jazzy crimson colour in marked contrast to the sea-green goat hair carpet. Black T-shirt, black jacket, black trousers, black boots – Eva Durband likes wearing black. She is an architect by training but has also turned her passion for diving into a profession. For many years, she and her husband Tobias have been making underwater films.

That she is a person of the sea is evident immediately even when she is not wearing her diving gear. Her silver choker bears the image of a mermaid. The silver ring worn on the second finger of her right hand has a large starfish on it and was made for her by a friend who is a goldsmith. Its design is based on one of her own underwater photos. She points to the black diving watch on her left wrist with a small compass on its strap. She then laughs and says: "If you know where you are, you can be wherever you want to be!" And it is true: Eva Durband acts like someone who is exactly where she wants to be.

Her face lights up and her eyes sparkle whenever she talks about the underwater world and her fascination with it. She has been diving for 45 years – 15 of which using technical closed-circuit rebreathers that recycle used air. This type of equipment offers many advantages: "You can dive for longer and deeper. In addition, there are no air bubbles and so the contact with marine life is far more intense." She laughs again: "The fish often swim towards you and then get a fright when they realise that you are a living creature."

Fascinated by the opportunities, Eva Durband started to take underwater photos and films in 2003. Since then she and her husband are regularly to be found out and about with several cameras. Durband explains: "We can then film simultaneously from a range of angles and use cameras with different focal lengths." What started as a hobby is



Eva Durband has been a customer of Kieser Training since 2004. Strong muscles help her to handle her diving equipment ashore – it weighs nearly 100 kilograms. The body tension she gains from strength training is necessary to stabilise the camera for macro photography and in the current.

now a profession. On average, she and her husband make four trips a year. Before each dive, there are preparations to complete, normally lasting 1 to 1 ½ hours. They then have to carry their equipment to the water – it weighs some 100 kilograms. "This is where the strong muscles come in handy," she stresses. Durband is fascinated by the diversity

of colours, shapes and structures. Above all she loves the movements and behaviour of the shoals of fish. "It is like being on a different planet. For our work we like to interweave images and moods and show the underwater world as it is – silent." She pauses for a moment and says: "I find it strange that I am talking so much. I prefer silence."

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