

A new success story from Italy!

Jean-Pierre L. Schupp talks to Stefano Marcandelli

Stefano Marcandelli, founder of TecnoBody is not only about to follow in the footsteps of the many already successful Italian equipment manufacturers. With his visionary approach he is also on the brink of taking a further revolutionary step in exercise physiology.

This summer, FITNESS TRIBUNE editorial team Monica Mutti and Jean-Pierre Schupp visited the business premises of TecnoBody. They came away highly impressed with what they heard and saw.

Soon after the last MEDICA in 2009 we reported in FT on the "Rolls-Royce technology" behind the almost one hundred percent robot-controlled strength training and rehabilitation equipment manufactured by TecnoBody from Bergamo.

Stefano Marcandelli comes from a very sports-oriented family. Almost every member of the family was a multiple Italian champion in one or other of the light athletics disciplines. Stefano for example, was a javelin champion. Following a shoulder injury some time back, this electronics engineer (plus biomechanics expert, computer scientist and ISEF – Milan sports scientist) who has won several awards, was simply not able to come to terms with the rehabilitation technology that was on the market at the time. There was no three-dimensional rehabilitation equipment

fitted with technology that would be considered standard today – i.e. microprocessors, 100% computer-controlled and that provided feedback communication to patients. Initially, he devised his equipment solely as an aid for severely handicapped patients. Over the years however, he came to realise that proven technology could become a life-long partner for people – regardless of whether they were healthy, sick or rehabilitated – the right technology and proper training were what counted in the end.

It was extremely difficult in the beginning. Just like many other geniuses before him Stefano also started out working from a garage. Describing his current "empire" in Italy as respectable is an understatement for sure. One really has to try his innovative equipment for oneself because no photo-

graph could ever do the machines full justice. Once Stefano Marcandelli had developed the Italian market and ironed out the machine's initial teething problems, he set about making an international name for his equipment. His excellent list of references was the key to success here. For Germany, Austria and Switzerland he hit upon a competent sales partner straight away – LMT. LMT, the supplier that had already gained the necessary experience for selling TecnoBody's products through decades of representing Cybex and other products.

In China too, TecnoBody has become a recognised name in the rehabilitation equipment sector. Stefano Marcandelli: *"It's amazing how our representative there – a big company with over 2,000 employees – brings 25-35 doctors to our offices in Bergamo every three months in*



Stefano Marcandelli and Monica Mutti



Curriculum vitae

Name: Marcandelli
First name: Stefano
DOB: 17.02.1968 in Bergamo, Italy

Education and training:

1989 Diploma in electronics engineering (score 60 from 60)

1992 Diploma in motor behaviour science (score 110 with distinction) professional experience

1989-1994 Professional athlete with the "Flamme Azzure" sports group in Rome

1994 Responsible for H-Move project at Fumagalli S.r.l.

1997 Responsible for Pro-Kin project, TecnoBody

1999 Responsible for PTS project, TecnoBody

2001 Responsible for Stability project

2003 Responsible for Multi Joint System project

2005 Responsible for Prokin Type-B project

2007 Responsible for Postural Bench project

Profession: Responsible for Research & Development at TecnoBody s.r.l.

order to demonstrate to them the unique qualities of our equipment and to hold training courses. All of these doctors are enthusiastic and gratefully adopt our new technology machines. China in particular, has a huge requirement for catching up as rapidly as possible on knowledge lost over the past 50 years and could even push into the lead now with TecnoBody. Here in Europe we first have to convince each doctor individually before they understand exactly how important our innovation actually is, because the technology here has been standing still for 30 years. Luckily, all of the larger hospitals and rehabilitation clinics in Italy have now installed our machines. Word-of-mouth recommendation is simply worth more than its weight in gold! Only after that big break was my company able to really take off and, as you can see for yourselves today, we are expanding rapidly. We are constantly having to lease more warehousing and production space here in the Bergamo region."

TecnoBody and LMT will be exhibiting at the forthcoming MEDICA between November 17th and 20th. We strongly recommend that not just all physiotherapists and doctors visit



Sensomotorik 2.0 – A revolutionary little therapy from Italy!

TecnoBody: Multi Joint System Shoulder

The requirements of patients, referring doctors and purchasers are permanently expanding. Patients are increasingly demanding more comprehensive care, doctors want to see the results of operations enhanced by rehabilitation and purchasers are more frequently asking questions about quantifiable results, thereby "fuelling" competition among rehab facilities (benchmarking).



Are you a shoulder specialist and have come to the point where you've reached your limits? Or do you have that feeling of not being sufficiently able to help orthopaedic patients with new knee or hip prosthetics and who now suffer an increased risk of falling?

Perhaps you are very well equipped to provide medical diagnosis and intervention and you might even have an acceptable therapy and training room. But everything to do with sensomotoric training is not well provided for (let alone being in a position where you are able to evaluate sensory capabilities).

According to my research, most outpatient (and also in-patient) rehab facilities are aware of the importance of training intra and intermuscular co-ordination and sensorimotor functions. However they often simply lack the equipment required for training and therapy.

We have plenty of soft floor mats, gyros, balance pads, ropes, self-made boards – a whole gamut of devices in fact, both everyday and lesser known, but all of them fail to achieve one thing: forcing defined movements using defined counterbalancing weights or predefined loads.

But how is a patient with new knee prosthetics going to be able to regain his/her surefootedness if during the initial rehab stage he/she doesn't learn how to exactly reprogram his/her heel-to-toe movement and gait pattern when walking? Initially without additional load from the body's own weight whilst avoiding the pain zone, and later on with limited loads and simulated variance?

How do we approach the provision of 'frozen shoulder' therapy?

And how, for example, will javelin throwers be able to regain their rhythm, that stereotypical combined throwing motion, if they are unable to practice this exact movement a short time after undergoing a shoulder operation? Or training these movements during rehab, initially using reduced forces, followed later by the application of additional load components?

This last example is by the way, at the root of the success story of TecnoBody from Bergamo (Italy). Stefano Marcandelli, founder of the firm and former competition javelin thrower, suffered such a serious injury one day, that he was forced to give up his sports career. He started however, to look into his injury in detail and considered the possibilities for successful rehabilitation. Following many years of development work, he designed the Multi Joint System Shoulder – or MJS Shoulder for short.

With a team of scientists from various fields such as medicine, sports science and civil engineering, he succeeded not just in revolutionising sensomotoric training but also in designing the equipment capable of testing and evaluating sensomotoric capabilities! Marcandelli created a whole system range of machines for lower extremities, for trunk, hips as well as upper extremities. It is widely used today in the foremost innovative therapy and training centres in Italy.



TecnoBody: Prokine M



TecnoBody: Trunksensor

An experienced rehab team comprising physicians and therapists have an absolutely huge range of possibilities to choose from. Aside from highly sensitive sensors and actuators for ankle and knee joint training, there is even a so-called trunk sensor: it shows the position of the trunk: either in an isolated position or dependant upon foot or legs. A mobile system is available as well for use at home, at work or during health days.

How then, was this "little revolution" able to cross the ridge of the Alps into Germany, Austria and Switzerland? Just as with the introduction of Isokinetics into Europe some 20 years ago, expert Gregor Hüni, CEO of LMT AG from Wallisellen, recognised the high potential benefits that using these systems could achieve. It was not the technology that first caught his eye, but the exceptionally beautiful design of the equipment. The way he then proceeded was exceptional too – all of his staff tested the systems in Bergamo. During a team meeting, a strong team spirit evolved with the ultimate aim of introducing the equipment to all of German speaking Europe as well.

At the medica 2009 exhibition, a comprehensive co-operation agreement was concluded between both firms, followed by internal training, workshops, translation of the software and instructions – all the work required to allow the deployment of this most valuable system for the rehabilitation of neurological, orthopaedic and cardiac patients (the equipment complies with CE and Medical Devices Act requirements).

The "early adopters" (first demonstration system installations) were easy to find. Sportomed Mannheim and Reha Vita in Cottbus had already been at the forefront of therapy, quality assurance and innovation for years. In a structured process, both owners were satisfied with the quality of the revolutionary idea from Italy and they are now involved in integrating the tried and tested concepts into "German" organisational structures. The equipment's financials aren't the only interesting feature in the first instance – the absolute supreme quality with which the new therapeutic methods are implemented is also highly apparent.

Christian Seifert, head of Reha Vita in Cottbus, is convinced: "The payoff for this investment is first class therapy results and the enhancement of our overall orthopaedic and neurological concept!" Not only does this strengthen his reputation with his partners (physicians, emergency hospitals, Olympic Centre and soccer club FC Energie Cottbus), but according to initial discussions with sponsors, his positive therapy results are starting to make the Employers' Liability Insurance Associations take note as well.

Several hundred of these systems have already been installed in Italy. Why not test them for yourself: TecnoBody equipment is available for testing in the LMT Schweiz showroom in Wallisellen near Zurich or at one of the workshops organised near you.

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Info: www.lmt.eu



the exhibition stand to view and try out the machines and 3D technology from TecnoBody, but fitness club operators should also go along to see in which direction the prevention and rehabilitation market will be developing in future – namely towards "health promotion".

Stefano Marcandelli and Jean-Pierre Schupp were in immediate agreement that neither the current rehabilitation market (physiotherapists and doctors) nor the prevention market (the many gym operators) will be able to cater for the new "HEALTH PROMOTION" market, with specific strength, cardio, flexibility and most importantly co-ordination equipment and be able to operate in this market sustainably. We need a new generation of HEALTH PROMOTION CLUB owners and operators. None of the current training and qualification providers, none of the current equipment manufacturers worldwide, have yet identified this trend or are in a position to build upon it.

Stefano Marcandelli added: *"I have discussed this new market with Nerio Alessandri for several hours. Existing companies, especially if they are as large as Technogym for example, are not able to change their concepts overnight. This important discussion has definitely shown though, that we are on the right track with TecnoBody and I very much hope that we can put many of the personalities from our industry on the right track towards taking the next steps for the future HEALTH PROMOTION market at the forthcoming 5th WFWF on October 14th and 15th at the Basle Congress Centre!"*

In concluding, we can only add that the next generation of robotically controlled machines is already in the implementation phase at TecnoBody. That's yet another measure of the brilliance of this 42-year old developer and entrepreneur from northern Italy!

Info: www.tecnobody.com and www.lmt.eu

