



KNOW YOUR MUSCLES

*THE FUTURE OF WEARABLE TECHNOLOGY
IN ONE POWERFUL SOLUTION*

45.9% to 54%

of all sports injuries are a result of overuse.

75%

Of the lower body injuries
are due to imbalance.

70% of athletes with recurrent hamstring injuries suffered from muscle imbalances between their quadriceps and hamstrings.

20%

of football-injuries involve the knee joint. The most common injury is the ACL-tear, that can significantly affect a player's career, with short- and long-term consequences."

For a top athlete the quads/hams ratio is approximately 40/60 % in running and 50/50 % in cycling.

**THE MBODY SYSTEM
CAN BE USED IN ALL SPORTS**

THROUGHOUT THE COACHING AND TRAINING PROCESSES

**Get inside Feedback from the movement and
Quality of the movement**

Control both the single exercise and whole training periodization

Optimize the sports- & individual-specific techniques and skills

Monitor & enhance the performance along with the progression follow-up

Monitor the individual changes in the neuromuscular activity of three important muscle groups in different stages of activity/fatigue

Support the training and recovery

MYONTEC INNOVATION

Myontec Ltd. was established as a spin-off from Mega Electronics. The idea behind the company was in democratization of traditional EMG. Our aim was to take the EMG technology off from laboratory conditions in order to explore the possibility to convert the technology into a wearable.

2008

In 2012, The New York Times listed Myontec smart garment as a third most significant innovation

2012

Company launched industrial manufacture of smart garment - Mbody

Prize Winner at the Wearable Technology Innovation World Cup 2014 with the focus on Sports & Leisure

2014

Successful establishment of a distributor network in all four continents.

Launch of Mbody Pro - solution for teams and rehabilitation centers.

2015

Launch of a 6Channel Mbody shorts.

Launch of new Muscle Monitor features for injury prevention and fatigue threshold.

2016



Janne Pylväs
CEO

At Myontec, we solve people's muscular problems and find beneficial solutions to users monitoring with surface electromyography (EMG). One of our strengths is a unique ability to be user inspired and driven on every and each step on the way. We care deeply about our customers' benefits and are constantly working on improvement of our technology, according to end-users you wants and needs.

We are a growth company. Our mission is to keep expanding by moving our innovation into new geographies and seek for new ways and methods on how our innovation will help you to become healthier and gain as much control of your human machine as it is possible.

This booklet will give you a quick overview on what Myontec is offering, what is our technology with surface EMG, how it's been used by customers and what are the great advantages you receive as a user.

We are here to help to Know Your Muscles!

WHY EMG?

EMG IS ABOUT MEASURING THE ELECTRIC ACTIVITY OF MUSCLES

EMG is about measuring the electric activity of muscles. The level of this activity is determined by the motor units: the higher the load the higher is the firing rate of MUs and also more MUs are being recruited in order to create greater force. Or inversely and simplified: the stronger the muscle contraction, the greater is the electrical activity.

This technique can be applied in many ways to evaluate the muscular work and function. EMG can be used, for example, to evaluate the muscle function, capacity, fatigue, force production, or to analyze activation patterns and biomechanics of human movement, or to detect problems, medical abnormalities or deviations of neuromuscular system.

Traditionally, EMG has been measured with tiny, needle-like sensors, placed straight into the muscle tissue to gain the muscle data.

This method is still often used in clinical and diagnostic setups. For more practical cases, non-invasive surface-EMG is used. In this method, disposable electrodes are being glued on skin.

Traditional methodology, though still used, is difficult and time-consuming preparation, and also issues with the reliability of the measurement procedure has hindered the applicability of EMG in habitual situations, especially during strenuous activities and exercises.

Myontec's wearable system offers valid and reliable EMG data added with ease-of-use, convenience, and applicability in the field. In Mbody all the electronics, wiring and sensors are seamlessly integrated in high-quality compression sportswear. Small, light-weight EMG unit with high frequency sampling rate, memory and wireless communication is being attached to the textile.

HOW IS MUSCLE ACTIVITY MEASURED?

| µVs | µV | MA |
|------|------|-----|
| 1 | 0.01 | 0.1 |
| 10 | 0.1 | 1 |
| 100 | 1 | 50 |
| 1000 | 10 | 600 |

The muscular activity is measured using conductive textile sensors to collect the signals through the skin above muscles. The scientific method is called electromyography (EMG).

The EMG signals are produced by tiny muscle fibers output, which typically are in range of 0 -2000 microVolts. To make the data more easily understandable we launch new unit called MA (=Muscle Activity), which is the micro-volt-value divided to 100.

MBODY OPENS A NEW DIMENSION FOR MUSCLE MONITORING

"There are many excellent devices to measure heart rate and vascular functions. However, there hasn't been any applicable, easy to use and reliable system to measure muscle activity, especially in field and during the most strenuous activities.

Myontec's Mbody is an excellent addition for modern sports coaching. Measuring muscle activity gives huge value to everyday analysis, coaching and training; coach and athlete can get crucial information about muscle contraction levels, intensity and recovery during the exercise."



Tapio Korjus
Director of
Kuortane
Olympic
Training
Centre





MBODY

THE MOST COMPREHENSIVE AND ADVANCED TRAINING SYSTEM OUT THERE

Myontec Mbody is the first product to utilize EMG in real-time sports performance analysis, regardless of the environment or the type of sport. With Mbody, we now have an access to entirely new information about muscle load, performance technique, muscle balance and the efficiency and intensity of muscle work. The obtained unique and revolutionary data can be combined with heart rate and power meters, leading to even better training sessions, and to even better results.



Shorts:

Conductive textile electrodes
Sensoring quadriceps, hamstrings & gluteus
Standard sizes: S-XL
Machine washable elastic materials

Module:

4 or 6 measuring channels
On-line & Recording mode
Bluetooth Smart compatible
Rechargeable battery via USB

Applications:

Muscle Monitor
Mbody Live App
Cloud services

Software:

Comprehensive test & analysis & follow-up features
Real-time monitoring & download options
Data import from BLE smart HR belts & cycling power meters
Compatible with Windows OS 7, 8 and 10

OUR GOAL IS TO BRING THIS PROVEN TECHNOLOGY TO EVERYDAY SPORTS ENTHUSIASTS BOTH RECREATIONAL AND PROFESSIONAL -OUT THERE!

Mbody AllSport á 620€ (+VAT)

The first ever wearable product, which enables the measurement & analysis of muscle performance. MShorts - the world's first intelligent garment which collects information on your muscles. AllSport model is designed for all training situations - no matter the sport or the environment.

Mbody Bike&Run á 660€ (+VAT)

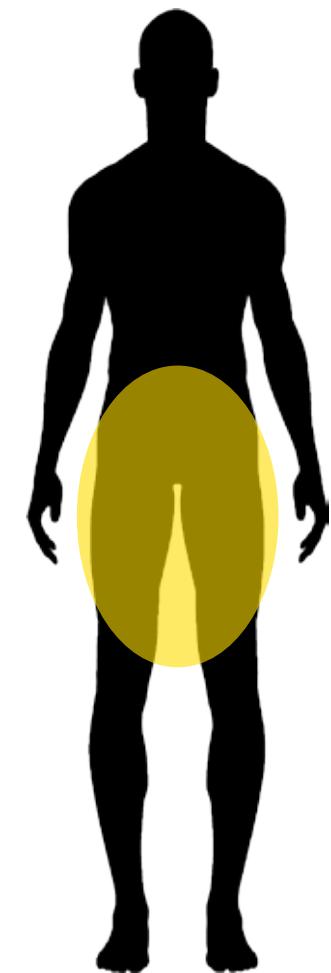
The design of the Bike&Run model is focused on enhancing the cycling experience, especially for the duathletes/triathletes. The high-performance triathlon padding ensures that you have all the possibilities to utilize the shorts in any sport or training activity possible.

Mbody 6Channel

Myontec top solution: Mbody shorts with 6 EMG channels. The Mbody 6Channel completes the lower body circle by adding the gluts data to the existing hamstrings and quadriceps. The product works with the Muscle Monitor -software and it is the most expected solution from our top customers. Mbody AllSport 6Channel is sold only in packages

Mbody 6 Channels Pro Basic á 4200€ (+VAT)

4 x Mbody 6Channel AllSport shorts
2 x MCell Smart (6 channel)
Muscle monitor 2.0





" After having knee surgery, the Mbody shorts were a fantastic tool to manage my rehab intensity and improve my efficiency without harming my hurt knee. I wanted to do so much, to get better fast, which can be dangerous. Being able to measure Muscle imbalances and weakness on my hurt leg was crucial to my rehab. Mbody shorts are such a cool gadget! "

Dorien Llewellyn

Professional Athlete, European Slalom Champion, Austria/Canadian/USA Slalom National Record Holder, Red Bull, MasterCraft,

" Myontec smart clothing technology has given us a new way to expand the analyzing and research of lower limb patients. In addition to visual observation, the muscle level biofeedback helps to perceive the problems related to motion and movement. Especially, the finding of the solution models connected to muscle balance has been broader. The EMG feedback also enables the verifying of results. By affecting the biomechanics of the joint angles, it is possible to require varying muscle signal data. On the other hand, this also means that the standardizing of the testing requires careful attention. In the monitoring of rehabilitation, after a trauma or operation, Mbody Solutions can give excellent "inside" information on the different stages of the healing process consistent to the rehabilitation protocol."

Mika Rouhiainen

Account Manager, Respecta Oy, part of Otto Bock Group



" Myontec Mbody helps to quantify and monitor the muscular condition, as well as to control its evolution until an injury is recovered and the muscles are back to their pre-injury condition."

Dr. Antonio Turmo

MD in Medicine and surgery, Sports medicine specialist, Medical department of RCD Espanyol of Barcelona, CAR High Perform-



**WITHOUT
THE
DATA
THERE
IS JUST
A HUNCH**



REAL-TIME MUSCLE ACTIVITY MEASUREMENT **MBODY LIVE**

Muscle load
Muscle load distribution
Muscle imbalances

Muscle condition
GPS data
Cadence

Heart rate
Power
Speed





"The key to skating fast is to only ever skate with one foot on the ground at a time. During the movement the free leg is supposed to be relaxed. In our training camp, we were using Mbody to observe the flaws in relaxation and changed performance techniques when needed, to make sure that the process is carried out properly."

Tuomas Nieminen
Performance coach, Finnish Speed Skating



"I have used Mbody product in a few different ways, it has been used to look into efficiencies in biking, it helps rehabilitations to look at the engagement to muscles in the different movements in the different stages."

Per Lundstam
High Performance Manager, Red Bull



"For centuries, sport related training has benefited from instruments that measure heart activity and electric activity of the heart muscle (EKG). Instead, the measuring of the activity of the skeletal muscles (EMG) has been somewhat difficult and sensitive to interferences and therefore rarely utilized in practical training situations. Now this is possible. With the Myontec sport textiles and with the muscle activity monitoring systems, the activity and the occurring changes in muscles that work during sport performance can be recorded and examined almost the same way as with an heart rate monitor. The system can expose a possible unbalance in muscle activity, and it can be used to monitor changes occurring during training and as a result of training in several muscle groups simultaneously. Myontec system is an excellent tool for a trainer who in addition to performance ability wants to explore what happens in muscles during training and in competition situations and how and which muscles are strained in sport performances. I recommend to explore and experiment as there is now available a totally new dimension for the development of training methods and periods."

Timo Vuorimaa
Principal Lecturer R&D , Haaga-Helia University Of Applied Sciences

Kjell Carlström

Former Finnish road racing cyclist. Participated in the Tour de France in 2005, 2006 and 2007 and won the Finnish national road race title in 2000, 2004 and 2011. Starting from January 2013, Kjell Carlström became one of directeurs sportifs in IAM Cycling and is currently managing athletes and staff during the races and being part of the team planning.

"With Mbody warming-up before training becomes more efficient, for it provides data that can be used in evaluation cyclist own physical needs and building more personal approach to the training process. Personally, I have been testing Mbody for warming up and can definitely see the difference."





TEAM SOLUTION

Myontec Team solution is yet another step forward to our technology use. We are providing a team package that allows our users to monitor and measure in both, real time and post-exercise, the performance, training load and potential problems in muscle activation and kinetic

technique. The team package is packed in a sports bag represent the best data collecting partner for physiotherapist, doctors, biomechanics and training coaches that want to step forward in the understanding of their athletes from movement, muscle load and muscle coordi-

Mbody Pro Basic

4 AllSports Mshorts
2 MCell Smart
Muscle Monitor perpetual license

Mbody 4 channel 3100€ (+VAT)
Mbody 6 channel 4200€ (+VAT)

Mbody Pro Advanced

8 AllSports MShorts
4 MCell Smart
Muscle Monitor perpetual license

Mbody 4 channel 4500€ (+VAT)
Mbody 6 channel 6500€ (+VAT)

Mbody Team Package

12 AllSports Mshorts
12 MCell Smart
Muscle Monitor perpetual license
Charging & downloading USB hub for 12 devices.
All packed in a High Quality Sports Bag

Mbody 4 channel 7300€ (+VAT)
Mbody 6 channel 12 500 € (+VAT)



MYONTEC TECHNOLOGY IS A LOOKING GLASS DIRECTLY INTO YOUR BODY

" Imbalances are very difficult to detect, especially in sports specific environments. A tool for monitoring muscle activity has been developed by Myontec. The muscles (engines) of the athletes can be followed more precise than before thanks to the Myontec technology. It gives me a valuable tool to measure muscle activity and to analyze correct movement patterns on my athletes. Myontec's tool provides us with detailed insights into muscular and other anatomic activity. Myontec is a looking glass directly into your body - it gives the user a new dimension and an unparalleled level of insight into what's actually happening in your muscles."

Marko Yrjövuori

Physiotherapist and performance coach, LA Kings

IF YOU AREN'T MEASURING YOU AREN'T MANAGING

" MBody is a powerful training tool! The shorts fit well. The technology works perfectly. We put the android phone running the MBody app on the boards beside the rink—several trainers were watching the display as I took the athletes through a rehab skate. The wireless transmission covered the whole rink so we could see the athlete's muscle activity in real-time during the skate—drills and conditioning. The information from MBody is incredibly important:

For the drills we are watching muscle distribution: which muscles are activating to do the work and to what extent? Is there muscle balance left vs. right side? We are also looking at the contribution of each Quadriceps Group relative to each Hamstring Group. If there is an imbalance, we can quantify it and monitor it day-to-day progressively working on a more unified balance. This information is critical when trying to get a player back in the

For conditioning we are looking at total activation. What is the total load in terms of muscle activity, or voltage? Knowing numbers can certainly help planning day to day and week to week.

I look forward to using the MBody more and gaining more valuable insight into how our players respond to different training and what it means for both their development and rehabilitation."

Mike Kadar

Strength and Conditioning Coach Pittsburgh Penguins NHL-team

MORE EFFICIENT IN TAKING REHABILITATION PROCESS DECISIONS

" The players are using Mbody during the whole training game. The data is gathered and stored in order to analyze it afterward, to gain better knowledge of Muscle activation ratios. Myontec Mbody is bringing up a new dimension in Muscle Activity monitoring. It allows us to measure and understand muscle activity of players during real training."



Carlos Bruno

Fitness Coach Coordinator, Sporting Clube de Portugal



MBODY IN THE ACTUAL GAME OPENS A NEW DIMENSION OF MUSCLE MONITORING

" Injuries often occur in training or matches. During the match you have the actual load and movement pattern of the soccer players. I thought that using Mbody in the actual game open a new dimension and provide us with the insight data. It could give us answers to the questions like: What is happening with muscle during the match? How muscles are behaving at the end of the match and where majority of observed injuries occur."

Rudy Kalema

Physical trainer and a sport science adviser. Royal Sporting Club Anderlecht (Belgium), Helsingin Jalkapalloklubi (Finland), AL-Shabab FC (Saudi Arabia) and



Chris Neville

**Head of Athletic Performance,
Blackburn Rovers Football Club**

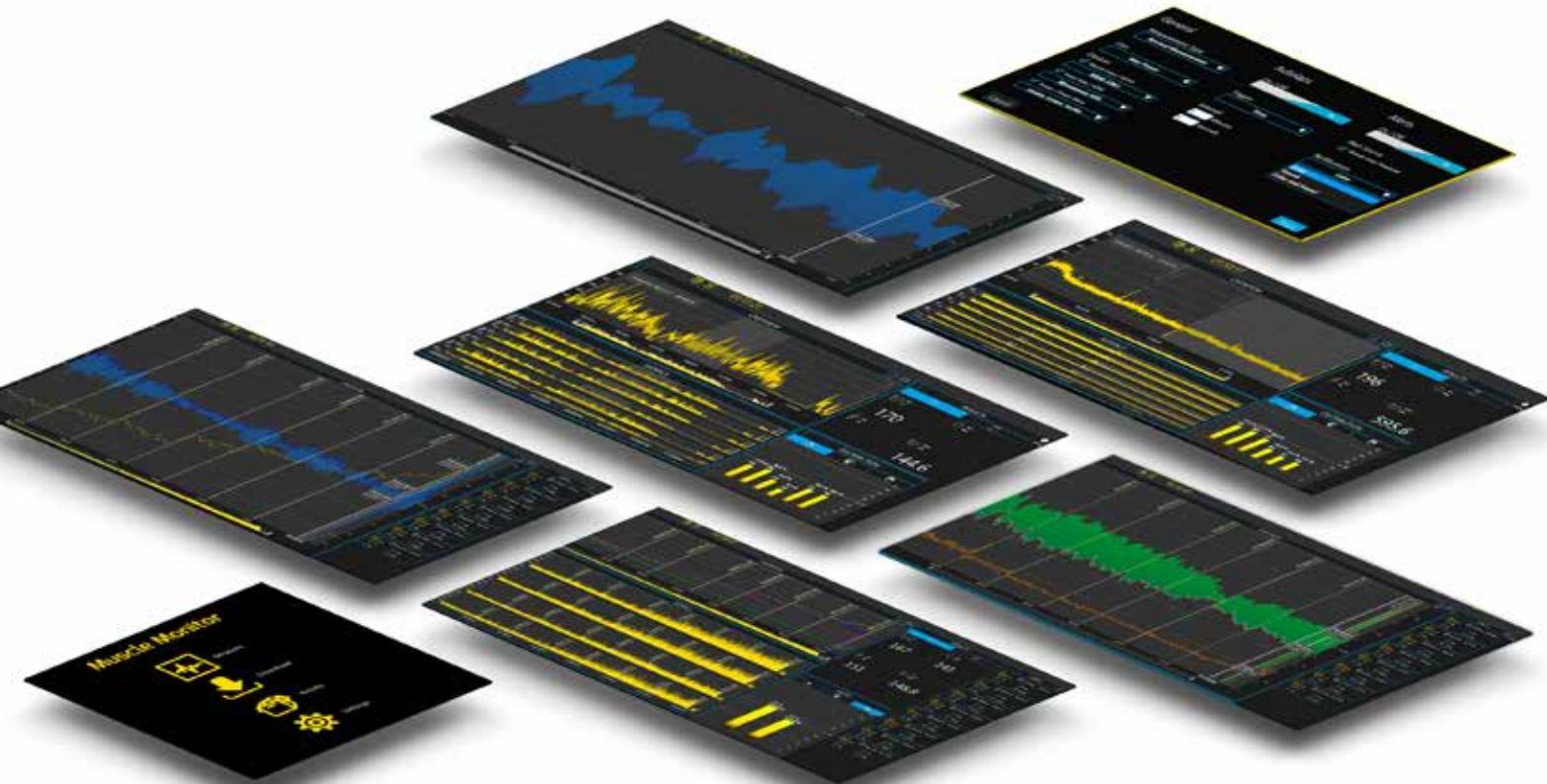
"It is commonplace for sports scientists and medical professionals to use a number of technologies to provide insight into the effectiveness of their training and rehabilitation prescriptions. The use of EMG embedded in textiles is an exciting development in providing knowledge of the body's internal muscular reaction to external workloads. By combining our understanding of resistance loads from a variety of sources, we are given a more comprehensive view of an athlete's daily muscular loading. Further assessment of loading ratio's allows us to identify areas of imbalance, and gives us the opportunity to address the injury risk caused by these imbalances. Mbody continues to develop this technology and are providing an exciting development in our aim of reducing muscular injuries'."

MUSCLE MONITOR

Muscle Monitor

Perpetual License 1,500 €
Annual Support & Updates 375 €

Rental license 3 months 300 €
Rental license 6 months 500 €
Trial license (14 days) Free



POWER OF SCIENTIFIC DATA ANALYSIS WITH THE EASE OF HIGH-TECH WEARABLE SOLUTION

Since the early stage company has been building solid and long-lasting relationships with top level high performance centers and sport institutions. Through those partnerships we have been able to continuously improve our products and technologies, creating a mutually beneficial value for both, their performance and our solutions excellence.

One of those solutions, Muscle Monitor software, is created and designed to suit the needs of professionals who are searching for deeper knowledge and accuracy.

Muscle Monitor offers a complete breakdown of human biosignals and allows you to conduct the most accurate and objective analyses of performance and biomechanics, giving you the keys for further advancement and evolution.

THE COMPLETE HUMAN PERFORMANCE LAB

EMG SPEED HEART RATE POWER CADENCE DISTANCE

POWERFUL ANALYSIS FEATURES

REAL-TIME MONITORING
AUTOMATED LAP ANALYSIS
BIOFEEDBACK TRAINING
POST-EXERCISE ANALYSIS
REPORT & FOLLOW-UP
IMPORT AND EXPORT DATA

FULL SET OF CHARTING TOOLS

SCALE & ZOOM CUSTOM GRAPHS AREA SELECTION

ANALYSE, OPTIMIZE & ENHANCE

FATIGUE RECOVERY MAXIMAL CAPACITY TECHNIQUE EFFICIENCY INTENSITY

MONITOR, DETECT, TARGET & PREVENT

BALANCE COORDINATION STABILITY WARM-UP RELAXATION ACTIVATION SEQUENCES

RESEARCH & MUSCLE RETRAINING MONITORING

Recovery and relaxation monitoring & Muscle overload analysis



Technique feedback for efficiency and balance



Real time analysis and post exercise analysis & documentation



Long distance control & Self-monitoring ability enable better home care during rehabilitation process



Objective muscle level feedback for further analyses and decision making



Inside feedback from the movement & quality of the movement



Myontec products are designed to provide you with data from your muscles and suggestions on how to interpret the data. However Myontec products are not medical devices and cannot be used or relied upon to provide medical diagnoses.

Myontec tailored solutions position our customers in the future of wearables. With a technology designed and build in Finland we are able to provide clothing and accessories that measure surface electromyography based on our customers' needs. We serve to top level Universities and Research Centres from all over the globe and our competitive pricing is rounding-up an extremely valuable and affordable solution.

Myontec solutions open a new dimension to rehabilitation and research processes providing you with the tool to examine muscle activity during different type or phases of activity.



PREVENTION OF INJURIES

Today, major amount of muscle work is static, in other words, the muscles remain contracted for a period of time without a dynamic movement. On the other hand, some positions require high-speed repetitive movements which resemble static work. The long-lasting static and repetitive work tasks often results in various symptoms such as overstrain, discomfort, pain and fatigue. In a long run this may result in permanent damage or even occupational diseases.

Ergonomics is the science of optimizing work environment, work content and equipment according to every specific

user. The use of EMG in this optimization process offers a valuable method for before and after analyses, due to ergonomic measures. With EMG garment the basic level of muscle load can be assessed. In other words, it is possible to define the current status of muscle load and the probability for potential damage. Later, when work environment, work demands, tools and techniques are optimized by the ergonomic measures, the development can be followed.



MUSCLE LOAD

Regardless of your field or industry, you use muscles to perform your daily activities and different work requires different muscles. In worst case, some of your muscles are not used at all whereas the other are overused, overloaded and tired. Because of the continued and unchanged use of same muscle groups the threshold to overstrain is low and hard to detect with bare eyes. Constant muscular overstrain combined with the low physical work capacity may lead to health problems and even permanent inability to work.

With Myontec's EMG technology the changes in an individual's muscular machine can be monitored, which helps to attain the level of physical capacity needed by job demands. The harmonization between muscle load and capacity prevents overstrain, fatigue, symptoms of pain and injuries. Myontec's goal is to make sure that human muscles fit the demands of environment and activity.

ERGONOMICS

There are also positions where the work environment, demands and tools cannot be optimized or changed to fit the physical capacity of the worker. In this kind of physically demanding positions the optimization of the balance between the work load and worker needs specific fitness characteristics from the latest. This can be attained with the regular physical training.

With Myontec's technology it is possible to define the muscles that are used most or more often and, therefore, are

under constant heavy load. The training programs can be targeted specifically to those muscle groups to increase muscles capacity for tolerating the load. This will help to maintain the balance between the work load and the employees' physical capabilities.

The training programs are individual for each employee and may include strength, endurance and balance exercises. In some cases massage and physiotherapy may also belong to the training programs.

TAILORED SOLUTIONS

EMG Sleeve

Measurement device for 2 channel

*MCell Smart

Muscle Monitor - software

Remote install and training

3140 € (vat 0%)

4Channel EMG Apparel

EMG Shirt for 4 channels

*MCell Smart

Muscle Monitor - software

Remote install and training

3940 € (vat 0%)

6Channel EMG Apparel

EMG Shirt for 6 channels

*MCell Smart

Muscle Monitor - software

Remote install and training

4340 € (vat 0%)

8Channel EMG Apparel

EMG Shirt for 8 channels

*MCell Smart

Muscle Monitor - software

Remote install and training

4740 € (vat 0%)

* MCell Smart can be changed to the customised MCell solution. For more details contact support@myontec.com



OUR CUSTOMERS





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