



# Shoulder Pacemaker<sup>®</sup>

**Motion Activated Stimulation**



# SHOULDER PACEMAKER™

*Motion Activated Stimulation: a paradigm change in electro-stimulation*

**The Shoulder Pacemaker™** device is an innovative wearable electro stimulator created for patients suffering from unbalanced muscle activation in the shoulder.

**The Shoulder Pacemaker™** device allows patients to dynamically interact with the device during active rehab. The movement is guided by the electrostimulation and the device adapts naturally to the person's rhythm.



## Smart stimulation

Dynamic interaction between the patient and the device thanks to automatic movement recognition



## Rehab protocols

A specific set of exercises developed by experts thanks to automatic movement recognition



## App supported

Guide and keep track of the progress of treatment with MySPM app



## Automatic and Conventional treatment

Two operating modes to customize the therapeutic approach



# THE GAMECHANGER IN ELECTRICAL MUSCLE STIMULATION

*A wearable electro-stimulator created for patients suffering from unbalanced muscle activation in the shoulder.*

The **Shoulder Pacemaker™** device is used for rehabilitation purposes to stimulate the periscapular musculature that is no longer properly recruited **in patients suffering from various shoulder pathologies**. This can be achieved by combining state of the art sensing technology with electrical stimulation. Electrostimulation is guided by movement and the device adapts to the patient's pace.



AUTOMATIC  
INTERPRETATION  
OF THE EXERCISE



SPECIFIC  
REHAB  
PROTOCOLS



ADAPTABLE TO THE  
PATIENT'S PACE  
AND NEEDS



DYNAMIC  
STIMULATION



TRACKS AND  
RECORDS  
THE EVOLUTION



# MOTION ACTIVATED STIMULATION

*A new way to synchronize muscle stimulation with timing.*

The **Shoulder Pacemaker™** device delivers “Motion Activated Stimulation” through a dynamic interaction between the patient and the device.

The embedded motion technology recognizes motor tasks and automatically sets the right stimulation intensity: this unique patented feature allows the patient to dynamically interact with the device in order to restore normal muscle activation patterns and equilibrium.



**Shoulder Pacemaker™ is then an interactive medical device able to interpret the patient’s movements and adapt accordingly.**

Conventional electrical stimulation devices operate with a pre-defined rhythm that force the patient to adapt their therapy to the electrical impulses of the device.

This limitation is addressed by the **Shoulder Pacemaker™** device when a patient’s movement is recognized by embedded sensors allowing for precise stimulation at the time and intensity prescribed. This patented feature greatly improves the applicability of muscle stimulation during a dedicated exercise program.

**Training when performed with the Shoulder Pacemaker™ device aims for automated activation of hypoactive muscle groups during motion. The goal is to help patients re-establish physiological muscle activation through a “feed-forward”**

## SHOULDER PACEMAKER™ DEVICE VS STANDARD EMS



### Standard EMS

- AUTOMATIC INTERPRETATION OF THE EXERCISE
- MOTION ACTIVATED STIMULATION
- THE DEVICE ADAPTS TO THE PATIENT’S PACE
- SPECIFIC REHAB PROTOCOLS
- TRACKS AND RECORDS PROGRESS FOR BETTER MOTIVATION

- NOT INTERACTIVE
- “ON/OFF” STIMULATION
- THE PATIENT HAS TO ADAPT TO THE DEVICE
- GENERAL PURPOSE
- NO RECORD OF PROGRESS



# PATHOLOGIES AND REHABILITATION

## *A non-surgical effective way to treat shoulder instability*

The shoulder is a very complex joint, stabilized by the coordinated activation of several muscles that keep the joint in position. If this control system fails, dyskinesia, functional restrictions and instability can occur.

The **Shoulder Pacemaker™** device is an electrical muscle stimulator used to stimulate the shoulder and periscapular musculature in patients **with non-physiological muscle-activation patterns**.

The **Shoulder Pacemaker™** device is designed to re-educate patient's muscle activation patterns in patients without structural defects to bone, tendons, muscles or nerves and who suffer from a mal-coordination of their muscle activation leading to severe instability symptoms.

## REHABILITATION PROTOCOLS

**Shoulder Pacemaker™** device provides on MySPM App specific rehabilitation protocols for the main diseases. Each rehabilitation protocol consists of a comprehensive exercise program developed by medical experts and physiotherapists.

**MAS** stimulation activated by movement, combined with pathology specific rehabilitation pathways aims to maximize the effectiveness of the stimulation.

**Shoulder Pacemaker™** device also makes it easier for the physiotherapist to propose specific rehabilitation programs validated by experts in the field: the exercises are preloaded on MySPM App and the patient can start immediately with the rehabilitation path most suitable for him.

## TREATMENT OF DIFFERENT PATHOLOGIES

**Shoulder Pacemaker™** device is the right choice to improve muscle recruitment patterns in patients suffering from various shoulder pathologies.

### POSTERIOR SHOULDER INSTABILITY

*REHABILITATION PROTOCOL ALREADY AVAILABLE*

### ROTATOR CUFF TEAR REHAB\*

### SCAPULAR DYSKINESIS\*

### DELTA PREHAB / REHAB\*

### THROWING ATHLETES\*

### WEIGHTLIFTING ATHLETES\*

### OVERHEAD ATHLETES\*

*\*REHABILITATION PROTOCOLS ARE COMING SOON*

[www.shoulderpacemaker.com](http://www.shoulderpacemaker.com)

# HOW TO USE

*Designed for simple and intuitive use*

The **Shoulder Pacemaker™** device is simply managed by rotating a wheel and pressing a button. The status of the device (on, off, pacing, charging) is indicated by the yellow LED located in the middle. Managing the menu and regulating the intensity of stimulation is accomplished by turning the wheel and setting the band of red LEDs to the desired stimulation program.

It is simple because the knowledge is inside the device and there is no need to set many parameters.

Once turned on, the device is already ready for the treatment of your shoulder and it is even easier with the dedicated MySPM app.

## 2 WORKING MODES:

### Conventional operating mode

Stimulation intensity is increased/decreased manually by the operator or by means of pre-set time cycles.

Each training mode consists of different durations of the activation and relaxation phase.

### Automatic operating mode

The Automatic mode implements an algorithm for activating/deactivating stimulation intensity according to the patient's arm position during an active motor task. This training allows the implementation of specific rehabilitation protocols with automatic stimulation that adapt to the patient's pace.



## SHOULDER PACEMAKER™ DEVICE KIT:

- 1 electrostimulator
- 1 elastic band
- 1 pair of stimulation cables
- 2 bags of electrodes
- 1 charging cable
- 1 skin protection

\*Kit configuration may change depending upon market conditions and product updates



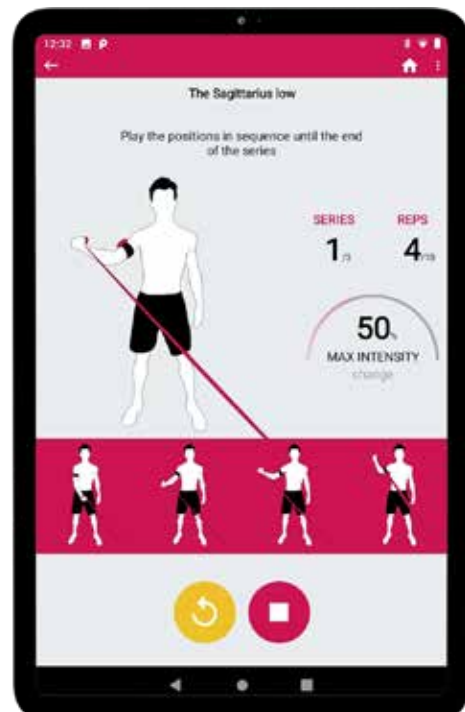
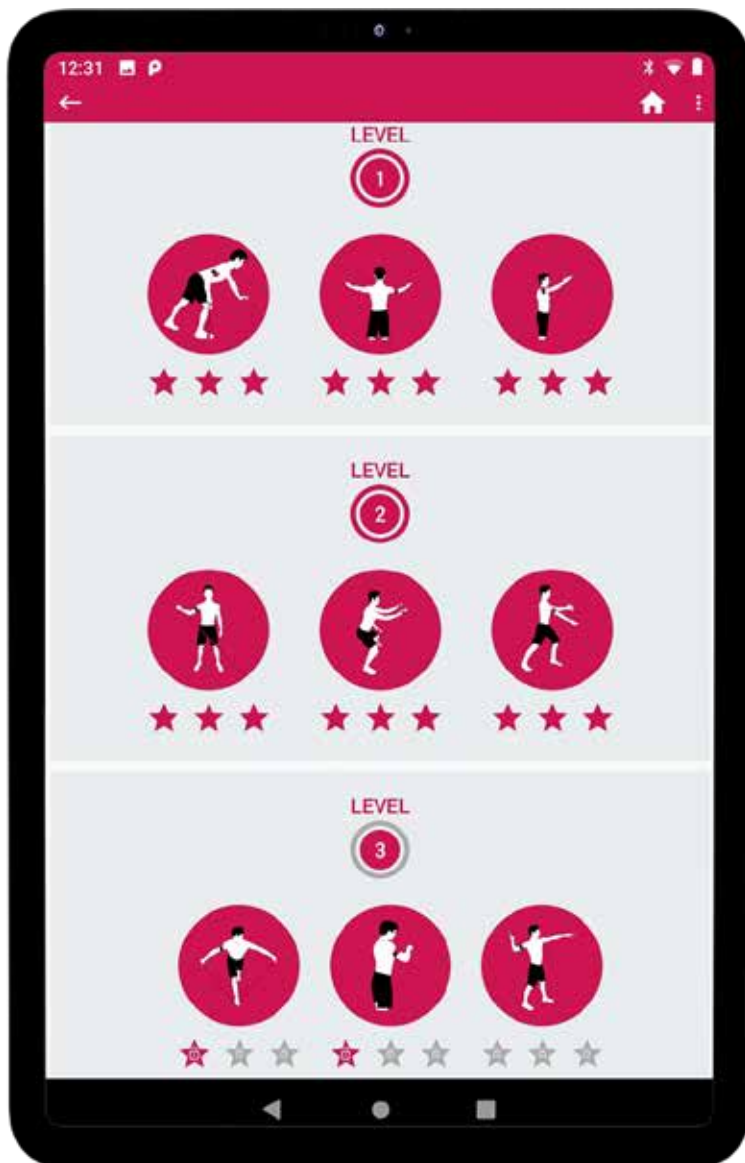
# THE SHOULDER PACEMAKER™ DEVICE APP

*Tracks & records your progress*

The **Shoulder Pacemaker™** device app (**MySPM**) is an easy and effective wizard that encourages patients to progressively increase the level of difficulty throughout the rehab process. Start from a basic level of difficulty and progress to a more engaging session to reach the full potential of rehab.

The rehabilitation experience will be more effective because the progress is tracked and therefore keeps the patient motivated. Log-in, connect the device and start the rehab protocol: intuitive, easy and effective.

And in support of telemedicine, clinicians are able to remotely monitor a patient's progress with their tablet or laptop to create an efficient link to your patient's rehab process.

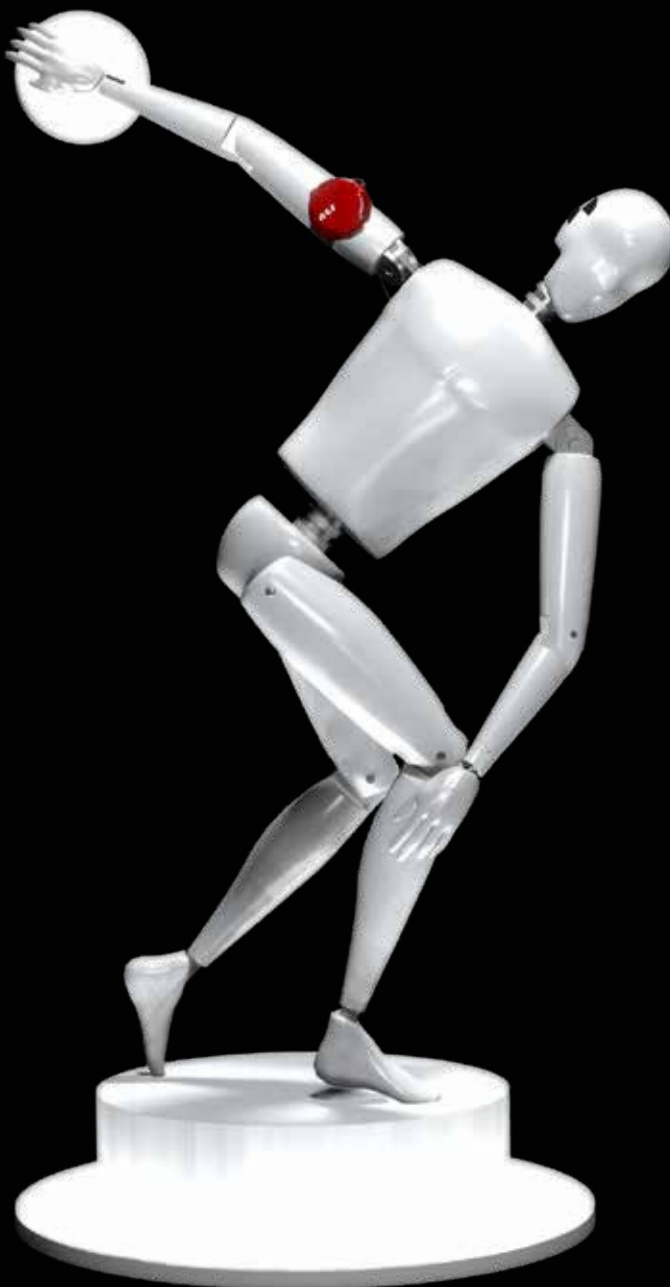


*MySPM app*



# Shoulder Pacemaker®

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SHOULDER PACEMAKER™ device satisfies all the applicable provisions in the Directive 93/42/CE regarding the medical devices amended by the 2007/47/CE and by D.Lgs. n.37 of 25/01/10 with the EC MED 29111 certificate

NCS Lab is a UNI EN ISO 9001: 2008 and UNI EN ISO 13485: 2012 certified company.



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