

Luna EMG



NEUROREHABILITATION ROBOTS FOR YOUR CLINIC



AUTOMATED NEUROREHABILITATION



Active training, even for very weak patients.

Luna EMG uses **reactive electromyography to train the sensorimotor cortex**. The patient's movement is active - based on bioelectrical signals (EMG) acquired from the patient's muscles. It is especially effective with clinically weak patients, allowing more motor unit recruitment during muscle activation than manual treatment.



Less manual labour. Documentation on the go.

Thanks to Luna's personalized and automatic training programs, **your patients are engaged, and you do less physical labour**. With training reports and objective measures created on the go you can focus on your patient's recovery instead of working manually.



Up to 4x more revenue. Expand your market.

Luna automates the therapy at your clinic. **Bundle up to 4 units and allow a single therapist to work with 2 or even 4 patients at the same time!** Luna also expands your market allowing the treatment and diagnosis of severe neurological patients.

REVOLUTION IN NEUROREHABILITATION AND ORTHOPAEDIC THERAPY

Her main indications are:

- Increase of muscle strength
- Increase of range of motion
- Increase of coordination

That means that she is especially useful with the following patients:

- Brain strokes
- Incomplete spinal cord injuries, spina bifida
- Multiple sclerosis, ALS
- Duchenne's, Spinal muscular atrophy
- Any partial innervation neurological disorders
- Pelvic floor (incontinence)
- Bone fractures
- Post-surgical recovery

and more ...



**"My head almost exploded with happiness!
After so many years, my body had suddenly
began listening to me."**

Michal Pabian from Krakow,
after 1st treatment on Luna EMG (SMA)



**"When my son picked up his rattle, I started
crying my heart out. He wasn't able to do that
in 6 months."**

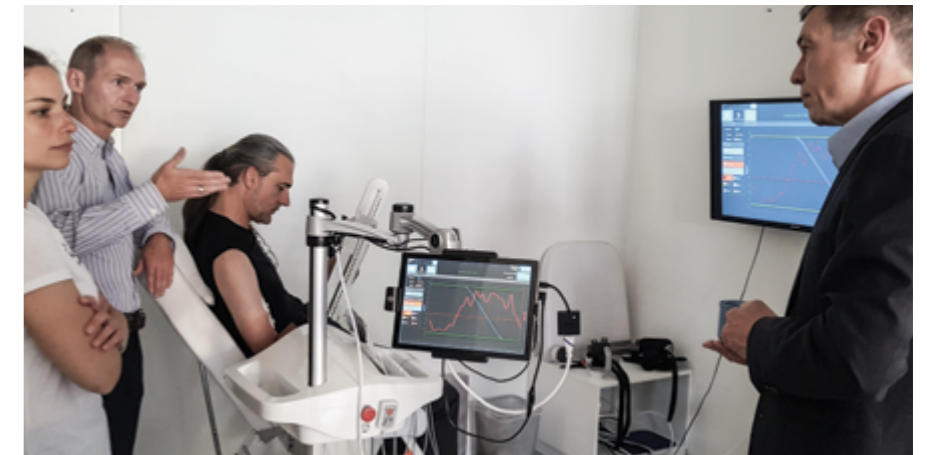
Agnieszka Czuj with her son Radek,
after 5th treatment on Luna EMG (SMA)



Maik Hartwig
Occupational therapist
and CEO, THERAMotion
Rehabilitation Clinic,
Schweinfurt, Germany

"Luna EMG contains all important elements of motor learning such as biofeedback, external focus, intensive active and passive repetition, neural reeducation, positive reinforcement and work on the performance limit. Deficient tone conditions such as hypertonia, hypotonia and spasticity can be easily treated with Luna EMG".

"Daily training with Luna EMG allows improvement in motor deficits in all patients. We believe that Luna is an important element in neurological and orthopedic rehabilitation."



"For us, the greatest success is the ability to help the patient in an objective and appropriate manner. Luna controls and monitors our therapy, thus minimizing therapeutic mistakes and providing evidence of improvement."

"Thanks to the attractive form of training with Luna, patients are willing to share their results with others, which increases the number of arranged therapy sessions with the use of Luna EMG."



Wojciech Romanowski
Physiotherapist and Co-
founder of Rehabilitation
and Orthopedic Medicine
Center in Bielsko, Poland



Luna **EMG** IN THERAPY AND RESEARCH



"We've used 'reactive electromyography' exercises in therapy of our patient with brachial plexus injury. He had the opportunity to perform active exercises, that he wouldn't normally be able to carry out. From day to day he saw improvement and became more independent."

Piotr Gomola, physiotherapist
Sanatorium Róża, Ustroń, Polska



"It was interesting to see, how quickly I got tired. I didn't realize that you could pick up on the muscle flickers so easily."

Issy,
SCI patient



"Children love exercising with Luna EMG, at the same time their muscular strength and the range of motion increases."

Mirosława Napinotek, physiotherapist
Rehabilitation Center „NEURON”, Małe Gacno, Poland



"Luna is the best robot for all patients with Duchenne Muscle Dystrophy. We started seeing improvements after just two weeks, training twice a day with Dawid."

Anna,
Dawid's mother, after 10th treatment on Luna EMG (DMD)



"We use the assessment of muscle strength and muscle activity during active movement, while overcoming the resistance generated by Luna. It enables us to objectively assess the effectiveness of physiotherapy in patients with orthopedic and neurological disorders."

Krystyna Stańczyk, MD
AMED Upper Silesian Rehabilitation Center, Katowice, Poland



"Thanks to Luna, when my muscles were connected, I could see how to perform certain movements."

Weronika,
SCI patient

ALL IN ONE SOLUTION FOR KINESIOTHERAPY

UPPER EXTREMITY EXERCISES



Shoulder flexion / extension



Elbow flexion / extension



Unilateral exercise - sagittal plane



Bilateral exercise in closed chain



Forearm pronation / supination



Shoulder internal / external rotation



Unilateral exercise in closed chain

LOWER EXTREMITY EXERCISES



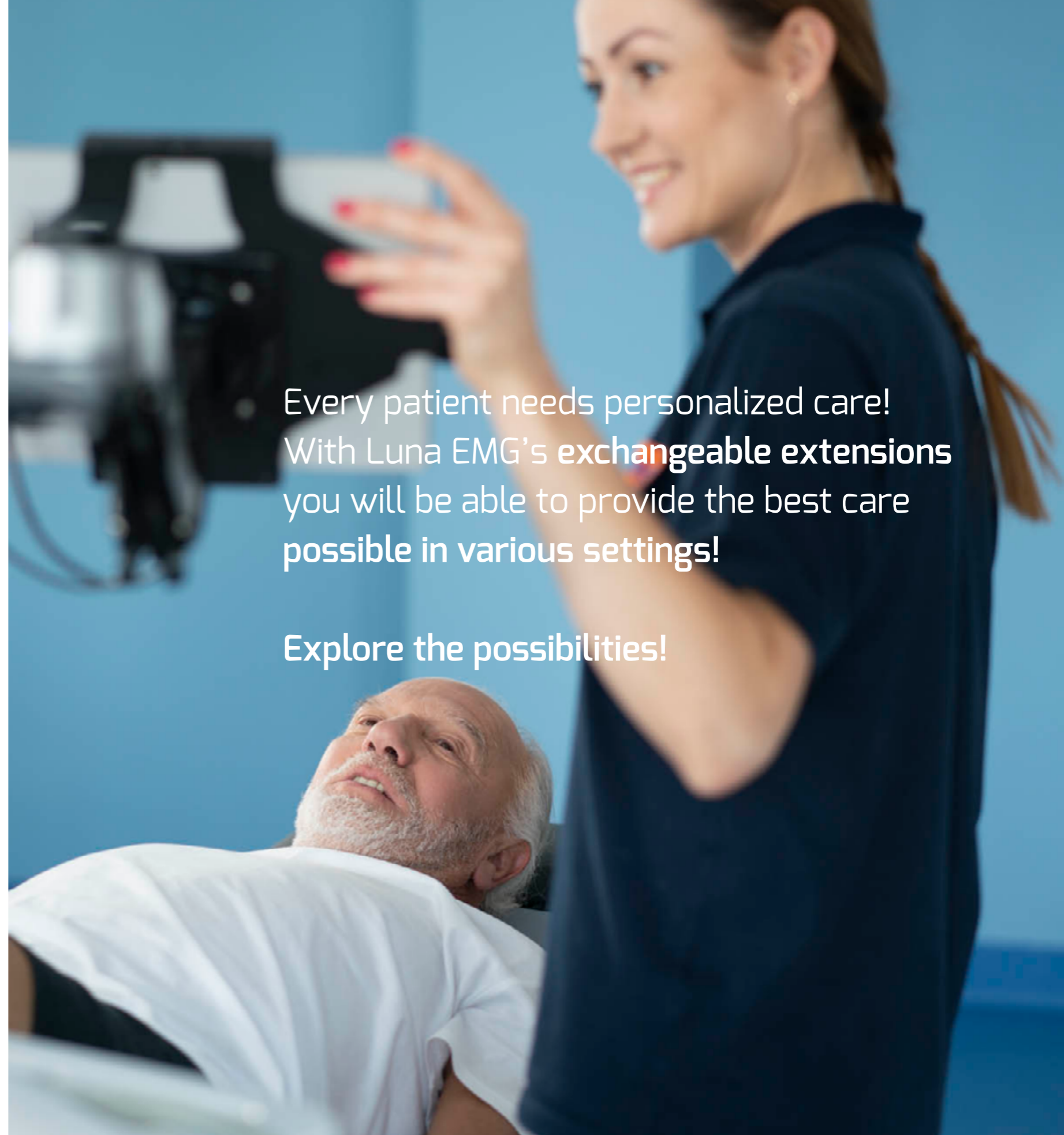
Ankle flexion / extension



Knee flexion / extension in sitting



Knee flexion / extension - prone lying



Every patient needs personalized care!
With Luna EMG's **exchangeable extensions**
you will be able to provide the best care
possible in various settings!

Explore the possibilities!

Luna EMG STANDARD SET



Luna EMG standart version includes:

- Luna EMG Robot;
- 6 extensions set;
- remote control;
- 2-channel EMG cable;
- Microsoft Surface 7 Pro i5 – with EgzoApp, EgzoServices, EgzoGames;
- glove for hand stabilization.



Luna EMG

PREMIUM SET

Luna EMG additional accessories:

- Mezos SIT - electrically adjusted treatment table dedicated to use with Luna EMG
- a set of extensions for occupational therapy; set for pelvic floor training - internal electrodes,
- EMG cable (5 + 1 channels);
- 6-channel EMG cable;
- additional hand glove;
- 55" Premium UHD TV with stand.



Luna EMG EXTENSION SET FOR OCCUPATIONAL THERAPY



Luna EMG enables functional hand exercises thanks to a specially designed extensions for occupational therapy in different sizes.

Set includes:

- 1 x Key extension - small;
- 1 x Key extension - large;
- 1 x Disc extension - pediatric;
- 1 x Disc extension - small;
- 1 x Disc extension - medium;
- 1 x Disc extension - large;
- 1 x Screwdriver extension - small;
- 1 x Screwdriver extension - medium;
- 1 x Screwdriver extension - large;
- 1 x Glove for hand stabilization;
- 1 x Suitcase.



PREMIUM SET

Luna EMG SET FOR PELVIC FLOOR TRAINING

EMG PELVIC FLOOR TRAINING IN INCONTINENCE

Thanks to the integrated EMG functionality you can use Luna EMG to help patients suffering from incontinence using special pelvic floor electrodes! It will expand your services to patients with incomplete spinal cord injuries, as well as women after childbirth and the elderly.



Set includes:

- EMG 5+1 channel - 5 surface + 1 pelvic floor cable 1,5m length, MDR26
- 10 pcs. - PR-02A, Adult 2 lead vaginal electrode
- 10 pcs. - PR-09A, Adult lead anal electrode

TRAINING IN ALL STAGES OF REHABILITATION

REACTIVE ELECTROMYGRAPHY

EMG CONTROLLED EXERCISES FOR CLINICALLY WEAK PATIENTS

With Luna, you can now start an active-assistive training for every innervated patient, even when the contraction is only visible on the EMG and not palpable.

Thanks to the movement being controlled by the electromyograph, **the action-reaction pattern of the sensorimotor cortex is strengthened considerably and proprioception is being improved.**

“Reactive electromyography” types of exercises:

- “Trigger and hold”- the assist of the robot depends on the activation and maintenance of the muscle tension;
- “Trigger and release” robot assist depending on activation, without having to maintain the muscle tension.

DYNAMIC VARIABLE RESISTANCE

With the assistance of Luna EMG, we can provide:

- Isokinetic exercises;
- Proprioception exercises;
- Exercises with “weight” resistance;
- Exercises with elastic resistance.

PASSIVE EXERCISES

The device also enables to conduct passive exercises with the help of:

- Continuous passive motion;
- Progressive passive motion with increasing range of motion.

EMG BIOFEEDBACK

Utilize the integrated electromyography to train any surface or pelvic floor muscles, even without extensions. You can focus on and train all motor units: fast-fatigable, fatigue-resistant and slow one.

NEVER AGAIN WILL THERAPY BE BORING!

Forget about hard and boring trainings!

Use **Luna’s built in rehabilitation games** to enhance the experience of physical therapy and **spike your patient’s involvement.** Works perfectly for both kids and adults.

Luna’s Space Shooter and Bubbles games can be used with:

- Concentric, isokinetic exercises with any extension and any limb;
- EMG Biofeedback exercises with surface or pelvic floor electrodes



EXPAND YOUR DIAGNOSTIC SERVICES

With *Luna EMG* you can now supply your patients with **objective, data driven diagnosis**.

With the built in 6 channel electromyogram, integrated torque sensor and position measurements, Luna will allow you to provide specialized, clinical evaluations:

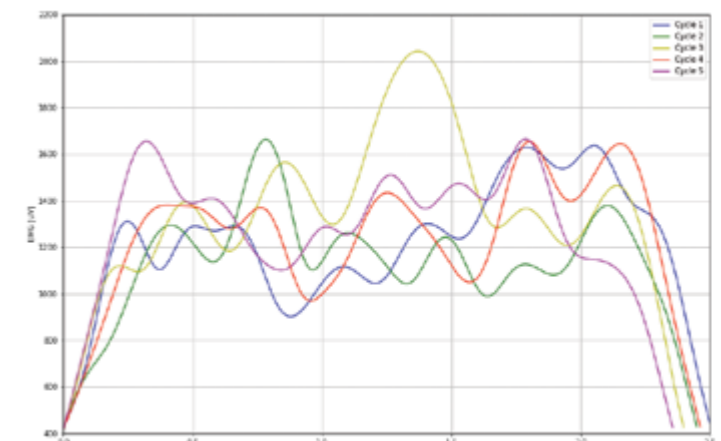
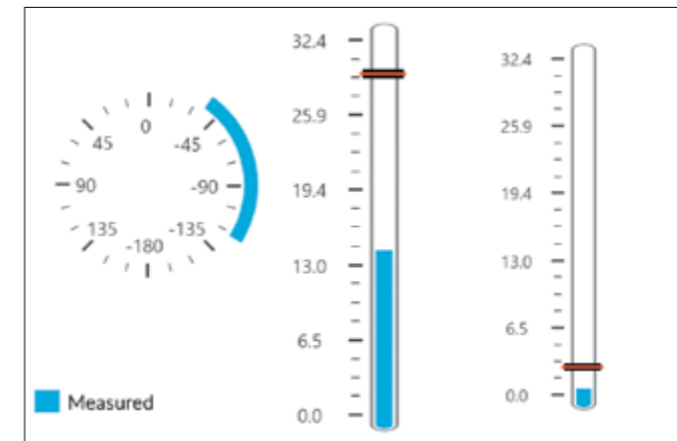
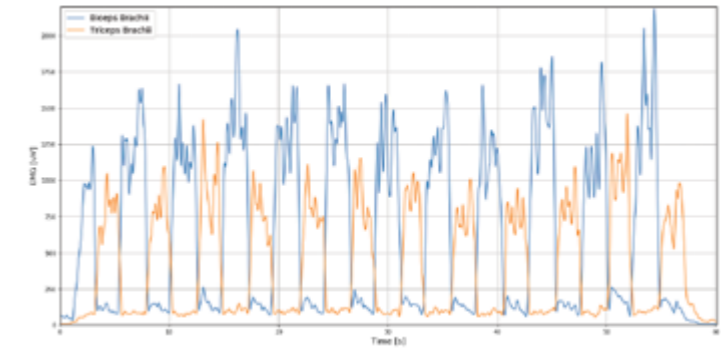
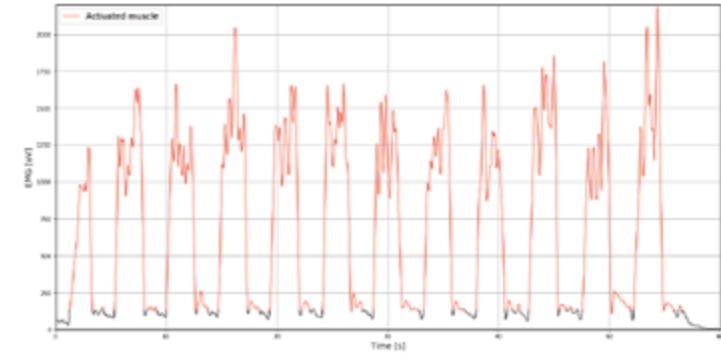
- **Innervation diagnosis and motor unit recruitment** (through surface and pelvic floor electromyography);
- **Dynamometric strength measurements** - maximal torque;
- **Range of motion measurements** (passive, assisted and active);
- Quantifiable spasticity and rigidity during passive movement;
- Muscle activation sequence and compensation
- Coordination.

Luna EMG generates PDF reports and CSV exports (comma separated values) from training sessions, that can be used as the patient's history file. With it, you can provide the healthcare insurance companies or national healthcare systems with the evidence that you and your clinic delivers the results they are paying for.

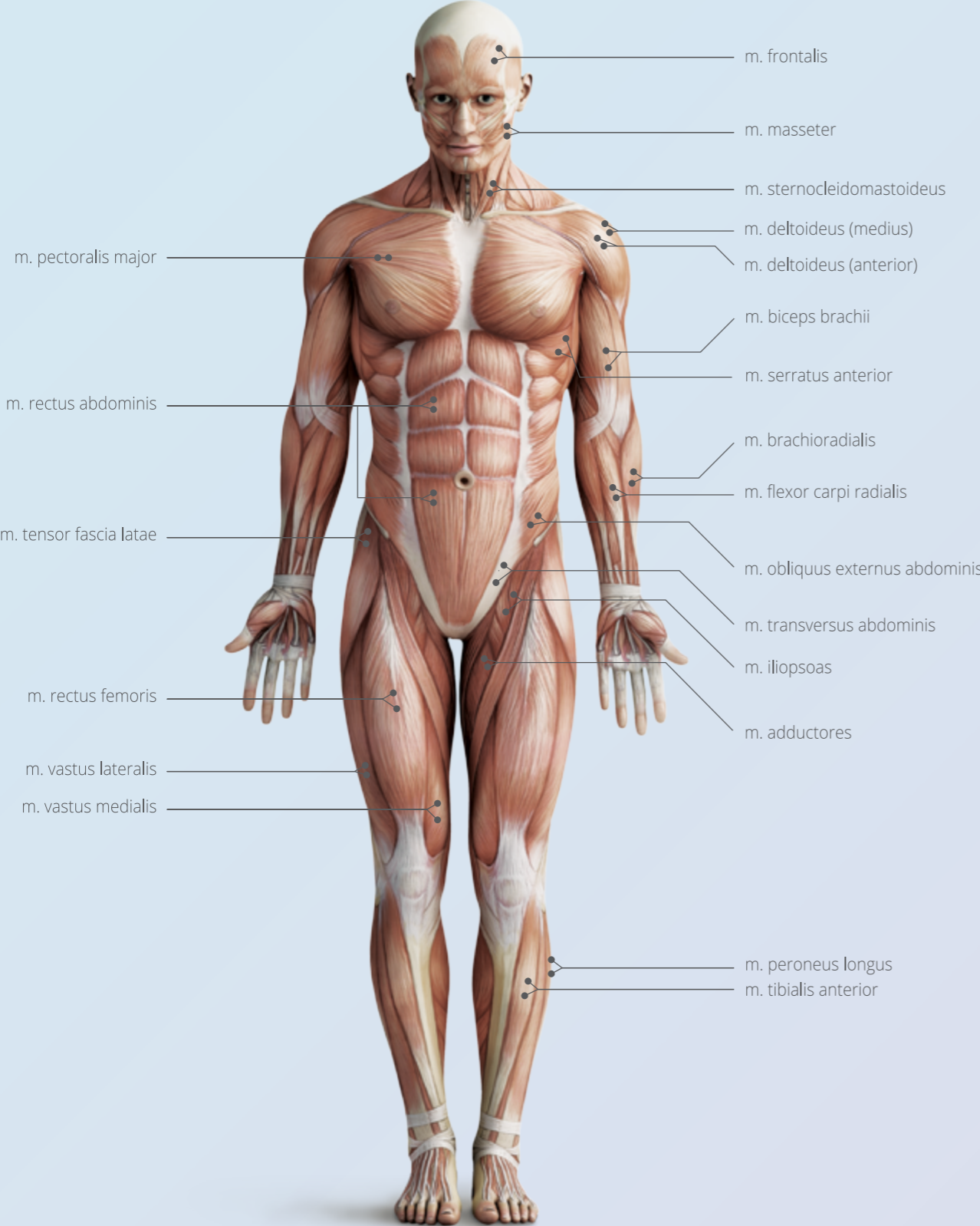


Use *Luna EMG* as a tool for evaluation in scientific research

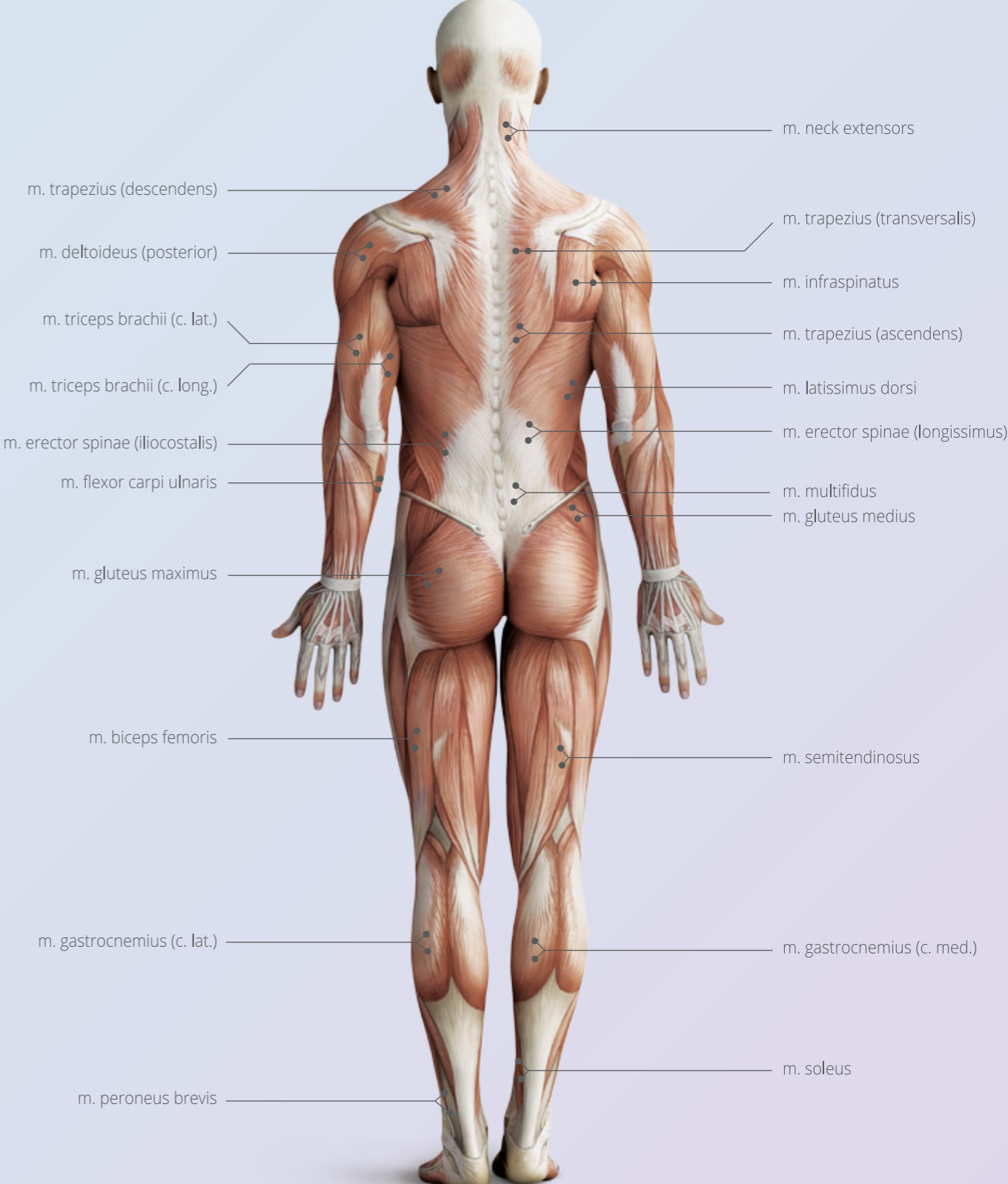
- Analyze changes in muscle strength.
- Assess the activation of the muscles during performed exercises.
- Analyze the work of antagonists, agonists or synergist muscles.



SURFACE ELECTRODES PLACEMENT – FRONT



SURFACE ELECTRODES PLACEMENT – BACK



REHABILITATION ROBOTS IN SCIENTIFIC RESEARCH

Robotic therapy compared to traditional rehabilitation:

- enables more repetitions during training;
- increases motivation;
- gives you the opportunity to self-exercise.

“Electromechanical-assistive devices allow a therapy paradigm which is intensive, frequent, repetitive, and accords to the principles of motor learning” (Mehrholz et al. 2012).



“Robotic- and computer-assisted therapies are an important part of optimization in rehabilitation” (Lo et al 2010, Hesse i in. 2014).

TECHNICAL SPECIFICATION

REGISTRATION SPECS

Protection class against electric current	class I
93/42/EEC medical device classification	class IIa
European Union EC/CE certifying Notified Body	TÜV NORD Polska Sp. z o.o. (CE 2274)

SIZE SPECS

Total Length	420 mm
Total Width	600 mm
Total Height	1135 - 1485 mm
Weight (exc. Extensions)	max 90 kg
Maximal applied weight (per extension)	30 kg
Base Height	97.5 - 122 mm
Wheel diameter	Ø 75 mm
Lifting column stroke length	350 mm
Head's rotation axis height	720 - 1070 mm

MECHANICAL SPECS

Head's rotation limits	-315 - 315 °
Head's rotation position accuracy	± 2 °
Maximal Head's rotation torque	60 Nm
Torque measurement accuracy	± 0.2 Nm
Head's rotation speed (no load)	10 - 50°/s
Lifting column stroke accuracy	± 1 mm
Maximal Lifting column's speed (no load)	10 mm/s
Operation type	continuous, software controlled

ENVIRONMENTAL SPECS

Usage temperature	10 - 40 °C
Maximal temperature variation in 12h	20 °C
Usage humidity	5 - 95 % RH, not condensed
Cooling	convictional
Maximal usage altitude	3000 m a.s.l.
Liquid ingress and solid particle protection	IP0

ELECTRICAL SPECS

Power supply	200 - 240V 50 Hz grounded
Current required	max 2.5 A at 240 VAC, exc. tablet
Bioelectric accuracy	± 1 µV
Applied part types	B, BF
Fuses used	4 A

Luna EMG is required by warranty to have continuous Internet connection for automatic software updates and maintenance, especially related to safety, as well as for customers support.





GET A HEAD OF THE COMPETITION!

SCHEDULE A **LUNA EMG** DEMO
TODAY AT [EGZOTECH.COM](https://www.egzotech.com)



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