

ottobock.

Exopulse Suit

Quality for life

Exopulse Suit

The future of NeuroMobility

The Exopulse Suit by Ottobock is the world's first neuromodulation suit, is based on the principle of reciprocal inhibition and ensures the relaxation of spastic muscles while enabling the activation of weak muscles. The combined effect allows its users to enjoy a more active daily life.

It is a personal assistive medical device, which is used for low-energy whole body transcutaneous electrical stimulation. It is intended for spasticity reduction, muscle activation and may help with related chronic pain relief,

which are symptoms common in cerebral palsy, multiple sclerosis, stroke, spinal cord injuries and other neurological disorders that may cause such type of symptoms.

The Exopulse Suit offers completely new possibilities to practitioners and users. It's even possible to use the suit in the comfort of the user's home.

We look forward to reshaping the future of NeuroMobility with you.





Key features at a glance

- First electrically powered neuromodulation suit for improved mobility, by relaxing spastic muscles, maintain or increase range of motion, re-education of muscles and increase blood circulation
- Available for both children and adults, from size 104 cm up to 5XL for men and women
- Includes 58 embedded electrodes, positioned to stimulate 40 key muscles throughout the body
- Can be preloaded with standard programs based on the diagnostics of the patient and can also be tailored to the individual needs of the patient
- Recommended to be used 1 hour every second day in case of spasticity, and 1 hour every day in case of related chronic pain*

*Unless otherwise specified by the healthcare provider and preferably together with physiotherapy, training or activity

Exopulse Suit

Mode of action

Spasticity, a decreased range of motion, loss of motor function, balance and related chronic pain – people with neurological diseases are subject to a myriad of challenges.

With the Exopulse Suit, finally there is an assistive device that offers your users new possibilities. The 58 electrodes embedded throughout the suit stimulate the antagonistic muscles of the muscles that are spastic. By a natural reflex mechanism called reciprocal inhibition, the spastic muscle will subsequently relax.

This neuromodulation stimulation is non-invasive and non-pharmacological and has limited side effects compared to other known invasive or pharmacological treatments for spasticity.

Clinical studies have also shown secondary effects, such as a general sense of well-being and improved sleep.



Neuromodulation

Neuromodulation is a technology that acts directly upon nerves with the purpose of producing a natural biological response. It is the alteration – or modulation – of nerve activity by delivering electrical agents directly to a target area.



“Our goal was to enable people with neuronal sequelae to live daily lives without [...] invasive procedures, and medications.”

Frederik Lundqvist
Inventor of the Exopulse Suit



To live actively – thanks to modern technology

To relieve the suffering of many people, that was the goal of Fredrik Lundqvist, the inventor of the Exopulse Suit. Later, Nicolas Loren Abboud and Malte Binting joined as co-founders. All three share a personal experience with disability and placed this knowledge into the development of the first electrically powered neuromodulation suit intended to improve mobility.

Exopulse Suit

What's inside the Exopulse Suit

58 embedded electrodes
in the whole suit

2 zippers per arm and leg

Detachable control unit

Magnetic coupling
to connect control unit and suit

Good fit due to material mix
of 51% polyamide and 49% elastane



Separate jacket and trousers
available from size 104 cm to 5XL

Product features

- First neuromodulation suit, composed of a jacket, pants and control unit
- Available in 37 sizes, starting from 2 to 3 years of age, including children's wide sizes, and up to 5XL for men and women
- Has 58 embedded electrodes stimulating 40 key muscle groups
- Allows 30 different settings per muscle, using a sub-threshold 20 Hz TENS stimulation, and ultra-low resistance carbon-enriched silicon electrodes
- Can be equipped with standard programs based on the diagnostics of the patient for immediate use and effect
- Can be adapted to the individual needs of the user in therapy
- Is simple to use, and can be activated by the patient or caregiver during training, at home or in a clinical environment with a simple "Play" button
- Only needs to be worn for 1 hour every day or every other day, as the effects last for up to 48 hours, and can last longer over time
- 2-year / 25 machine washes / unlimited steam cabinet washes product warranty

Exopulse Suit

How to use it

With the Exopulse Suit, your users get the chance to actively regain control of their limitations. All three components (jacket, pants, control unit) of the Exopulse Suit are easy to put on and can be connected in just a few steps.

Following only a few minutes of use, the users feel the liberating effect of neuromodulation all by themselves.

1. Thanks to the lightweight, stretchable material and multiple zippers, the Exopulse Suit slides effortlessly over individual body parts.
2. The belt with the control unit is easy to attach thanks to magnetic couplings.
3. After just a few moments, users feel a liberating effect themselves and also can operate the control unit with the ON/OFF button.



DURING USE:

Support your users from the very first therapy sessions. Give them the opportunity to move around during use and/or perform movements that are difficult to make.

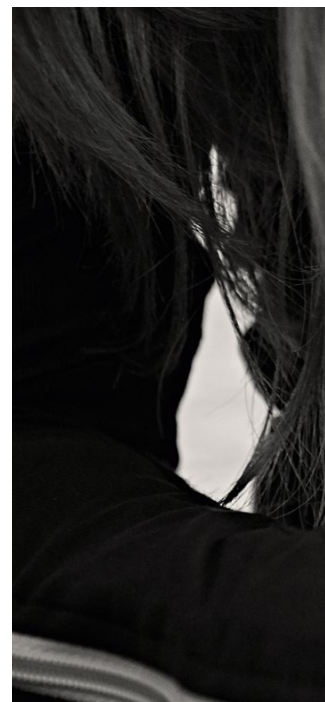
1.



2.



3.





“Before I started using the Exopulse Suit I couldn’t sit with my back straight and legs crossed. The Exopulse Suit improves my balance and helps me walk much longer distances. I can stand up much longer and do much more, like cooking! I really like cooking. Thanks to the Exopulse Suit I no longer need to take Botox injections, which makes me very happy. I take much less pain-killers and sometimes none at all! It feels like a new kind of freedom.”

Léa 10 years, Cerebral Palsy



Exopulse Suit

For whom the Exopulse Suit is suitable

Main patient groups

- Multiple Sclerosis (“MS”)
- Cerebral Palsy (“CP”)
- Stroke
- Spinal Cord Injuries

Intended use

- Relaxation of spastic muscles
- Maintaining or increasing range of motion
- Activation and re-education of muscles
- Increasing local blood circulation
- Symptomatic relief and management of related chronic intractable pain



“I couldn’t believe it. I was shocked. I lived a very active and industrious life, but I had to start over completely: Learn to walk, learn to speak – everything. I suffered a stroke in 2008 resulted in strong spasticity in my arm and leg and a left sided paralysis. I use the Exopulse Suit one hour at a time and I sleep very well afterwards. I’ve regained contact with my foot which I haven’t had for years. It used to be nearly dead! I walk faster, steadier and safer now I’m reconnected with my body in a whole new way!”



Maja 57 years, Stroke



Contraindication

Never use the Exopulse Suit:

- If the user has implanted electronic medical devices or equipment which can be disrupted by magnets, for example, shunts
- Together with electronic life-support equipment or high-frequency operation equipment
- Together with EKG-equipment. There is a risk of Exopulse Suit disturbing the function of the above-mentioned types of equipment

Do not use Exopulse Suit without consulting a doctor in connection with:

- Cardiovascular diseases
- Malignancy (cancer)
- Infectious diseases
- Fever
- Pregnancy
- Skin disease, rashes or other skin problems.
- Usage together with another medical device or medical treatment

Exopulse Suit

Why an Exopulse Suit?

A simple question you can answer with a number of benefits for your user.

The suit is safe and simple to use in a home environment and may improve autonomy by increasing mobility. Using the Exopulse Suit also can simplify caregivers' work – easier manipulation and less carrying means more effective care. Thanks to the targeted activation of individual muscle groups by the different electrodes, the need for stretching exercises may be reduced and thus the effectiveness of physiotherapy may be improved.

It is non-invasive and non-pharmacological and has limited side effects compared to other known invasive or pharmacological treatments for spasticity.

Several clinical studies on the Exopulse Suit have been completed to date by reputable hospitals, such as Karolinska Institutet in Sweden and Hvidovre Hospital in Denmark, while new studies are ongoing with Hôpital Henri Mondor and Mayo Clinic.

Article No.	Description	Size
28XP1=1	Exopulse control unit 9.2	Universal
28XP2=*	Exopulse jacket child	104–152
28XP3=*	Exopulse trousers child	104–152
28XP4=*	Exopulse jacket child (wide)	104–152
28XP5=*	Exopulse trousers child (wide)	104–152
28XP6=*	Exopulse jacket women	XS–5XL
28XP7=*	Exopulse trousers women	XS–5XL
28XP8=*	Exopulse jacket men	XS–5XL
28XP9=*	Exopulse trousers men	XS–5XL
28XP10=XL	Exopulse jacket unisex/short	XL
28XP11=XL	Exopulse trousers unisex/short	XL

* List is not complete and finalised





Exopulse Suit

The supply chain

With the Exopulse Suit, your users get a medical device whose effects have already been proven in several studies. The fitting is carried out in several steps.

1. You or one of your practitioners is trained by Ottobock in the use of the Exopulse Suit which requires certification.
2. Invite interested persons to a trial fitting, if they or their relatives are eligible on the basis of indications and contraindications. During this trial, the suit is tested for 45–60 minutes to see if and how it works on the user.
3. If this trial is not sufficient, a 2–4 week loaner suite for an extended trial can also be organised at home. Especially here, muscle relaxation, which could not be noticed at first sight, can lead to considerable relief in care and support.

In the further course of fitting, you and your user will optimise the use of the Exopulse Suit.

We will be happy to inform you personally about further possibilities.





