

User Manual

myopro 2+

Sections for all MyoPro 2+ Models



MOTION W



MOTION G

CONTACT INFORMATION

UNITED STATES



Myomo Inc.
45 Blue Sky Drive
Burlington, MA 01803
Tel: +1-877-736-9666
(Myomo Support)
Fax: +1-617-886-0333

EUROPE



The Black Church, St. Mary's
Place, Dublin 7, D07 P4AX,
Ireland
Email:
eurep@cslifesciences.com

UNITED KINGDOM

UK Rep

Compliance Solutions Ltd
Suite 10, Dunnswood Road,
Cumbernauld, Glasgow
United Kingdom G67 3EN
Tel: +447917134922

AUSTRALIA

TGA Sponsor

NeuroMuscular Orthotics
1846 Dandenong Road,
Clayton, VIC 3168 Australia
Tel: 1300 411 666
Email: darren@neuromuscular-
orthotics.com.au

	For sales information, email:	info@myomo.com
	For customer support, email:	support@myomo.com
	For more information about Myomo, visit:	www.myomo.com

CAUTION: United States Federal Law restricts this device to sale by or on the order of a physician or physical therapist.

COPYRIGHT NOTICE

© 2017 Myomo®, Inc. All rights reserved.

No part of this guide may be reproduced, transmitted, transcribed, or translated without the written permission of Myomo.

Product name MyoPro®, MyoPro 2+, and company name Myomo®, mentioned herein are trademarks of Myomo, Inc. or their respective owners. Other product and company names are used herein for identification purposes only and may be trademarks of their respective companies.

The information contained in this document represents the current view of Myomo as of the date of publication and is subject to change without notice. Because Myomo must respond to changing market conditions, it should not be interpreted to be a commitment on the part of Myomo and cannot guarantee the accuracy of any information presented after the date of publication.

The MyoPro mechanical assembly has an expected life of five years. This statement is not a service warranty or a guarantee of access to a service warranty. This information is provided to assist in planning.

Contents

INTRODUCTION	5
CUSTOMER SUPPORT	7
INFORMATION SYMBOLS	7
INTENDED USE	8
INDICATIONS FOR USE	8
CONTRAINDICATIONS	8
MYOPRO 2+ DESCRIPTION	9
WARNINGS	10
CAUTIONS	12
FUNCTIONAL AUDIBLE ALERTS	13
BATTERY	14
BATTERY & CHARGING	16
SETTING UP THE CHARGER	17
CHARGING THE BATTERY	18
OPENING AND CLOSING THE MYOPRO 2+'S BATTERY COMPARTMENT	19
INSERTING THE BATTERY INTO THE MYOPRO 2+	20
CONTROL PANEL	22
CONTROL PANEL BUTTONS & LIGHTS DIAGRAM	24
CONTROL PANEL LIGHTS, DESCRIBED	25
HOW TO POWER THE MYOPRO 2+ ON AND OFF	26
POWER ON	26
POWER OFF	26
SENSITIVITY SETTINGS	27
MAINTENANCE	28
BEST PRACTICES FOR SMOOTH PERFORMANCE	30
FACTOR A: STRAP TENSION	30
FACTOR B: SENSORS PLACEMENT	30

FACTOR C: STATIC	30
CLEANING THE MYOPRO 2+	31
REPAIRING THE MYOPRO 2+	31
STORING THE MYOPRO 2+	32
DISCARDING THE MYOPRO 2+	32
AVOIDING DAMAGE TO THE MYOPRO 2+	33
TROUBLESHOOTING	34
TROUBLESHOOTING TIPS	34
MYOPRO 2+ ERROR	35
RECOGNIZING WHEN THE MYOPRO 2+ IS EXPERIENCING AN ERROR	35
WHAT TO DO ABOUT AN ERROR	35
LOCATION OF IDENTIFYING NUMBERS	36
TECHNICAL SPECIFICATIONS	40
ENVIRONMENTAL REQUIREMENTS	40
POWER ELEMENTS	40
ELECTROMAGNETIC COMPATIBILITY	41
ON-DEVICE MARKINGS	42

INTRODUCTION

THIS PAGE IS INTENTIONALLY LEFT BLANK

CUSTOMER SUPPORT



For any support issues, please contact your treating clinical Provider

A Provider may be a physical or occupational therapist, a physician, a prosthetist, an orthotist, or other in the medical field who has been trained in providing clinical care with the MyoPro 2+. Your Provider is the first resource for all fit and operational issues.



If your Provider is unable to address an issue, he or she may contact Myomo customer support for assistance. See Page 2 for contact information.

INFORMATION SYMBOLS



WARNING

Warns about situations involving the use of electricity and other situations that could result in bodily harm.



CAUTION

Cautions about actions that may create unsafe conditions that could result in damage to the equipment or loss of data.



NOTE

Note about something to be aware of at this stage of MyoPro 2+ use that will help optimize performance or help avoid a common issue that new Users may face.

INTENDED USE

The MyoPro 2+, an upper limb orthosis, is a compensatory device to increase ability to perform functional tasks with the affected limb. The user voluntarily activates movement of the orthotic device with their remaining electromyography (EMG) muscle signal.

INDICATIONS FOR USE

The MyoPro 2+ is indicated for use by adolescents and adults diagnosed with long-term muscle weakness OR partial paralysis. Users must meet physical size specifications and demonstrate capacity to use the device, including sufficient cognitive abilities, per user assessment and clinician evaluation.

CONTRAINDICATIONS

The MyoPro 2+ is contraindicated for use as follows:

1. Insufficient myoelectric signal output from at least one muscle group needed to activate the desired powered joint (for example, biceps or triceps signal to extend the affected elbow).
2. Severe shoulder subluxation.
3. Excessive pain in shoulder, arm or hand during facilitated range of motion.
4. Contraindicated during recovery from acute injury such as trauma, infection, or skin condition.
5. Upper extremity contracture(s) that prevent functional movement to benefit from the orthosis.
6. Rigid spasticity in the affected muscle groups.
7. Arm circumferences and lengths that are outside build specifications required to be fit with the orthosis.
8. Cognitive or behavioral impairment that would inhibit safe use of the orthosis.
9. Other medical issue which interferes with safe use of the device for functional improvement.

MYOPRO 2+ DESCRIPTION

The MyoPro 2+ consists of a combination of the following components: a custom-made upper limb orthosis (brace), a powered elbow orthosis with surface electromyography (EMG) sensors, a static or manually set multi-articulating wrist (MAW), a static hand orthosis or powered hand orthosis with EMG sensors, and optional shoulder harness configurations (Figure 8 (Part Number 27679) and Cross-body (in two sizes) (Part Number 28027 and 28028)) for added comfort and secure fit of the MyoPro 2+. The MyoPro 2+ also comes with an interchangeable, lithium-ion battery pack (Part Number 25626) with a separate battery charging dock (Part Number 25687), as well as a laptop (Part Number 1879). The laptop comes with software pre-downloaded which a User or the User's provider can use in order to view a graphical representation of the User's EMG signal while operating the MyoPro 2+. A carrying bag is provided for transporting and storage of the MyoPro 2+.

The MyoPro 2+'s EMG-control circuit continuously monitors and senses, *but does not stimulate*, the User's muscles. The MyoPro 2+ filters and processes the EMG signal, and translates this information into motor movement. Based on the User's needs and abilities, the control parameters are adjusted by the User's Provider. The power assist moves the motor with speed proportional to User's exertion. This system enables the MyoPro 2+ to assist the User to initiate and complete desired motions.

The MyoPro 2+ is designed for use in a home or clinical environments away from areas with high flammability risk. Please reference Warnings and Technical Specifications for additional information. It should not be worn while undergoing medical imaging (x-ray, MRI, CT scan, etc.)

WARNINGS

The following statements warn against injury risk when using the MyoPro 2+:

- ⚠ The MyoPro 2+ is a prescription device and should only be used as indicated under clinical supervision of a Provider, or after receiving instruction from a clinical Provider for at-home use.


- ⚠ The MyoPro 2+ is only to be used by the person for whom it is prescribed.



- ⚠ ONLY use the MyoPro 2+ upper limb orthosis on the prescribed elbow, wrist, and hand joints. Each MyoPro 2+ is built specifically for a left arm or a right arm; never wear the MyoPro 2+ on the other arm.



- ⚠ Do not use the MyoPro 2+ to drive an automobile or operate machinery.


- ⚠ Do not sleep while wearing the device


- ⚠ DO NOT expose the MyoPro 2+ to flame or excessive heat; personal injury may occur.


- ⚠ The MyoPro 2+ is NOT waterproof. Do not shower, swim, or expose the device to rain or other sources of water. Do not wear the device for assistance to wash dishes by hand as risk for water exposure to the grasp motor is high.




- ⚠ Use caution when using the device in shoulder positions where it is possible for the User to hit him or herself.
- ⚠ Do not attempt to lift heavy objects with the MyoPro 2+; the elbow motor provides at most 5 lbs of lifting assistance.


- ⚠ Tight straps may restrict the User's circulation. Therefore, always check that the straps are not too tight throughout the User's range of motion.

WARNINGS, CONTINUED



Each component of the device is supplied for safety and best performance. Use all provided components for optimal operation.



No modification or disassembly of the mechanical or electrical components of the MyoPro 2+ is allowed as it may expose other dangers.



If storing the MyoPro 2+ for more than one month, remove the battery from the battery compartment.



If at any time during the use of this device, you notice any of the following, discontinue use and contact your Provider:



- Movement does not match the User's desired motion.
- Persistent redness, swelling, or skin breakdown (bleeding, chafing, etc.)
- Rash on the arm, hand, or fingers.
- Pain associated with wearing the MyoPro 2+ orthosis.
- Unusual noises from the orthosis (popping, clicking, etc.)
- Smells from the orthosis (smoking, burning plastic, etc.)
- Odor from the orthosis (sour smells or other indications of bio-contamination.)

Icon Credits

Medical Shield by Josy Dom Alexis, Weight: Deadlift by Scott Lewis, Single Person: Person by Alexander Smith, Group of People: Group Men by Peter van Driel, Arm: Muscle by Jurjen Versteeg; the Noun Project

CAUTIONS

The following cautions apply to the MyoPro 2+ device and accompanying components:

- ▲ Do not expose to flame or excessive heat.
- ▲ Do not incinerate the Lithium Ion battery pack.
- ▲ Do not use a hairdryer to dry components of the MyoPro 2+.
- ▲ Use only the battery and battery charger provided with the MyoPro 2+.
- ▲ Insert only the battery pack that came with the MyoPro 2+ into the MyoPro 2+ battery compartment.
- ▲ Charge the battery indoors only. The battery and battery charger should only be operated in temperatures ranging from 0-40 °C (32-104 °F).
- ▲ The MyoPro 2+ and accessories are not waterproof. Take care to protect the device from coming in contact with liquids. Never immerse, pour, or spray water or other liquids directly onto the MyoPro 2+. For proper cleaning instructions, see Page 32.
- ▲ Excess force applied to rotate the motors in either direction will permanently damage the motors.
- ▲ The MyoPro 2+ is not suitable for use in the presence of flammable anesthetic mixtures with air, or flammable anesthetic mixtures containing oxygen or nitrous oxide.
- ▲ If you detect fumes, flames, melting of components around the battery or battery charger, or the device is hot to touch, **TURN THE DEVICE OFF IMMEDIATELY** and contact your Provider.
- ▲ Protect the MyoPro 2+ from damage, always use the carrying bag provided with the unit to store or ship the MyoPro 2+.



Icon Credits

Trees: Forest by Simone Fernandes, House: House by Numero Uno; the Noun Project

FUNCTIONAL AUDIBLE ALERTS

The following Audible Alerts may be heard when operating the device.

Sound	Trigger	Meaning	Prompted Action
Long Beep	Motor temperature is too hot.	Motor is disabled until it cools down.	Please wait for your motor to cool down. It will resume its function once the motor temperature has cooled enough to resume operation.
Swirl Melody	After overheating, motor temperature has cooled enough to resume operation.	Motor is re-enabled and will begin moving again.	Resume normal use.
Donning Mode Ascending 1	Donning Mode enabled in Myconfig, User holds elbow button for 3 seconds.	Donning mode is entered, hand is about to move.	Place hand into the hand restraints.
Donning Mode Ascending 2	User presses hand button after above.	Handset and elbow are about to move.	Place elbow into elbow restraints.
Donning Mode Ascending 3	User presses elbow button after above.	Donning mode is complete.	Donning mode is complete, device going into standby (or configured start mode). You may begin using your device.
Short beeps at 1second intervals.	Overheat Prevention Alarm has been enabled in MyConfig, Device is in Dual Mode, Elbow has been overused in a short period of time.	After 5 seconds of alerting, Motor is disabled for 10 (configurable) seconds to allow it to cool down.	Please wait for your device to cool down. It will resume its function once the motor temperature is back to normal.

BATTERY & CHARGING

THIS PAGE IS INTENTIONALLY LEFT BLANK

BATTERY & CHARGING

- ▲ **CAUTION:** Do not expose to flame or excessive heat.
- ▲ **CAUTION:** If you detect fumes, flames, melting of components around the battery or battery charger, or the device is hot to touch, TURN THE DEVICE OFF IMMEDIATELY and contact your Provider.
- ⌚ **NOTE:** Charge the battery before using the device.
- ⌚ **NOTE:** The battery may arrive in “Shipping Mode.” You MUST put the battery on the charging dock to take it out of Shipping Mode. The MyoPro 2+ will not turn on if the battery is in Shipping Mode.

CHECK THE BATTERY’S CHARGE LEVEL

Press the black dot on the battery icon to see the battery’s charge level.
A light scale (1 to 4 lights) will indicate the battery’s current charge range.

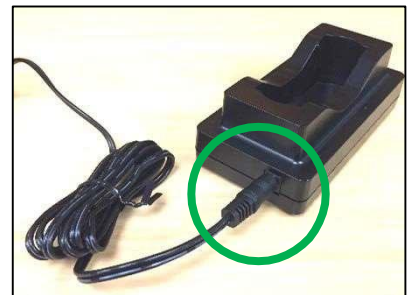
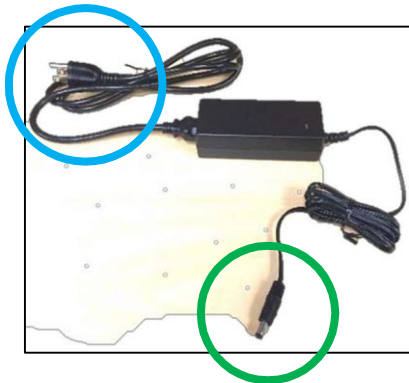


Visual Indicator	One light blinks for 1 second and repeats four times	One light illuminated for 4 seconds	Two lights illuminated for 4 seconds	Three lights illuminated for 4 seconds	Four lights illuminated for 4 seconds
Percent Charge	Less than 10%	10-25%	26-50%	51-75%	76-100%
Icon Display					

SETTING UP THE CHARGER

- ▲ **CAUTION:** Charge the battery indoors only. The battery and battery charger should only be operated in temperatures ranging from 0-40 °C (32-104 °F).
- ▲ **CAUTION:** Use only the battery and battery charger provided with the MyoPro 2+.
- ▲ **CAUTION:** Do not expose to flame or excessive heat.

1. Plug the charging cable into the charging dock.



2. Plug the 3-prong end into a wall outlet.



3. Locate the row of metal prongs inside the charging dock.



CHARGING THE BATTERY

- ▲ **CAUTION:** Charge the battery indoors only. The battery and battery charger should only be operated in temperatures ranging from 0-40 °C (32-104 °F).
- ▲ **CAUTION:** Use only the battery and battery charger provided with the MyoPro 2+.
- ▲ **CAUTION:** Do not expose to flame or excessive heat.
- ⌚ **NOTE:** Charging time for a battery with <10% capacity is approximately 3 hours.

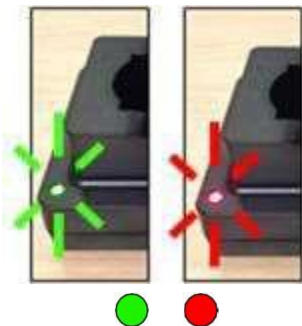
1. Locate the “teeth” on the battery.



2. Align the teeth with the prongs inside the charging dock and push down gently to sit the battery fully onto the prongs.



3. Check the light on the charging dock.



*Flashing (blinking)
between RED & GREEN*

The charger is
detecting the battery.



*Illuminated
ORANGE*

The battery is
charging.



*Illuminated
GREEN*

The battery is
charged.



*Illuminated
RED*

There is a problem
with the battery.
Remove the battery
from the charger and
contact your provider.

OPENING AND CLOSING THE MYOPRO 2+'S BATTERY COMPARTMENT

To open the battery compartment, **press the eject button**.



To close the battery compartment, **push firmly in the center of the compartment door** until the door clicks shut.



INSERTING THE BATTERY INTO THE MYOPRO 2+

- ▲ **CAUTION:** Insert only the battery pack that came with the MyoPro 2+ into the MyoPro 2+ battery compartment.

To insert a charged battery into the MyoPro 2+'s battery compartment:

1. Remove the battery from the charging port & unplug the Charging Dock from the wall outlet.
2. Open the battery compartment.
3. The battery only engages fully in the battery compartment ONE DIRECTION. Locate the “myopro” sticker on the battery – position the logo so that it faces toward your arm., with the battery tab pointing up. This will line it up properly for step 4.



4. Gently insert the battery into the battery compartment.
5. Close the battery compartment.

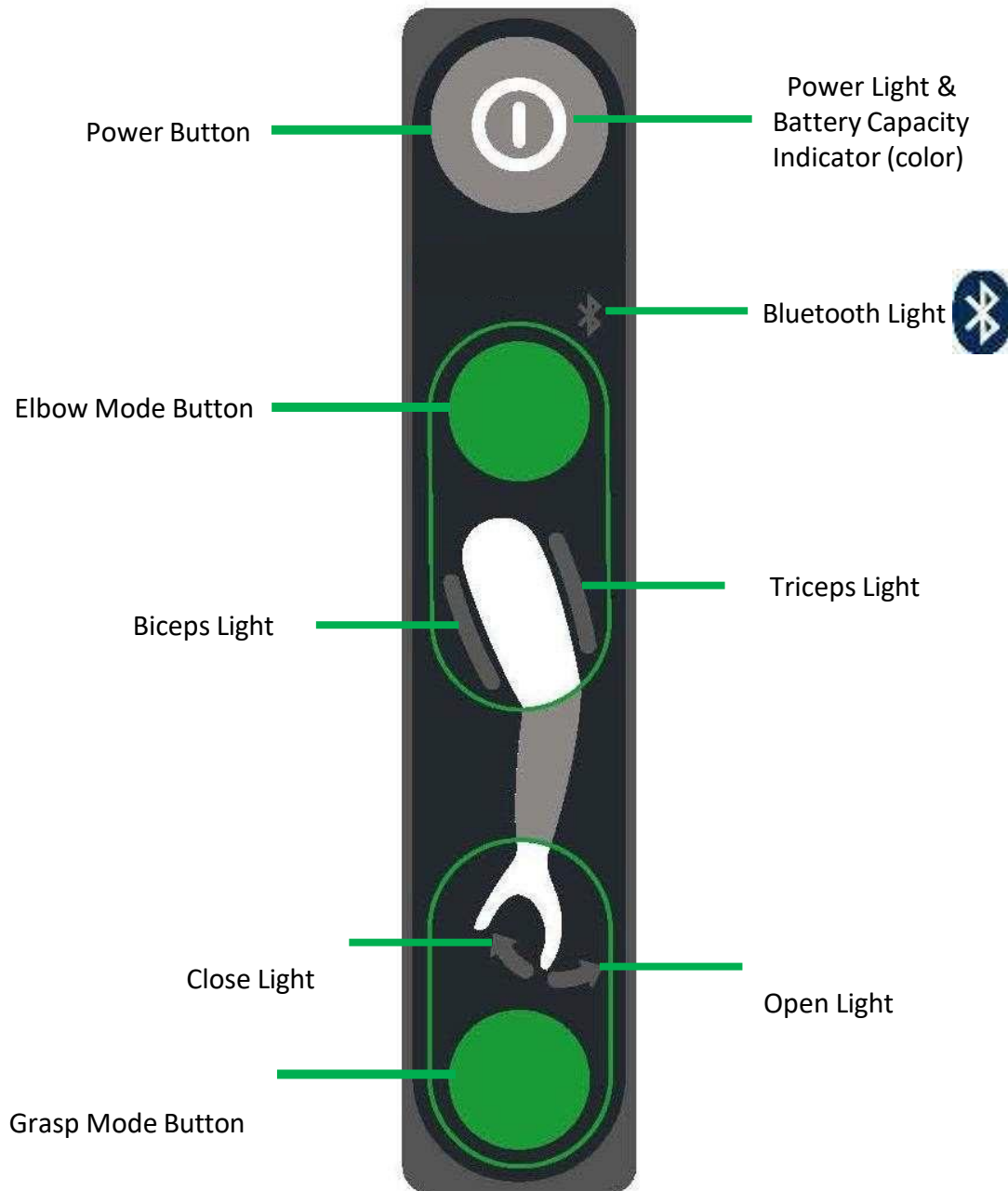
NOTES ON BATTERY HEALTH

-  **WARNING:** If storing the MyoPro 2+ for more than one month, remove the battery from the battery compartment.
- ① **NOTE:** If a battery is unused (stored), it should be recharged at least once every 6 months. If uncharged for more than 6 months, the battery could get so depleted that it could be unable to be recharged.
- ② **NOTE:** Best practices for charging the battery:
- The battery is rated for 300 “charge cycles.” A charge cycle is from less than 10% charge to 100% charge. If you charge once a day, the battery should last for 10 months.
 - Lithium ION batteries deteriorate faster when the depth of discharge is higher. Therefore, it is better NOT to fully deplete the battery before charging. Mid-cycle charging (between 40-60% battery charge) will provide the best longevity.
- ③ **NOTE:** Batteries do not last forever. If the battery is not holding a charge for more than 30 minutes, or you have been using the battery consistently for more than 12 months, it may be time for a new battery. Contact your Provider to order a new battery.
- ④ **NOTE:** The battery charger has an expected life of 3 years.

CONTROL PANEL & SENSITIVITY SETTINGS

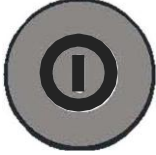
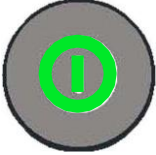
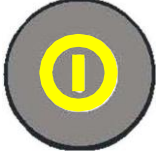
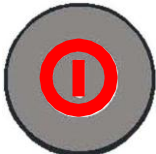
THIS PAGE IS INTENTIONALLY LEFT BLANK

CONTROL PANEL BUTTONS & LIGHTS DIAGRAM



CONTROL PANEL LIGHTS, DESCRIBED

POWER LIGHT & BATTERY CAPACITY INDICATOR COLOR

NOT Illuminated (off)		The MyoPro 2+ is powered OFF.
Illuminated Green		The MyoPro 2+ is powered ON. The battery has greater than 15% charge remaining.
Illuminated Yellow		The MyoPro 2+ is powered ON. The battery has between 15% and 5% charge remaining.
Illuminated Red		The MyoPro 2+ is powered ON. The battery has less than 5% charge remaining.
If color is changing in a repetitive pattern...	1. White (may look light-blue) 2. Dark Blue 3. Green 4. Red	<u>The MyoPro 2+ is experiencing an error. See Page 36 for instructions.</u>

- **NOTE:** Another way to check the battery capacity level is to eject the battery and check the light indicator on the battery itself (see Page 17 for instructions).

BLUETOOTH LIGHT

NOT Illuminated (off)		The MyoPro 2+ <u>is not</u> connected to MyConfig.
Illuminated (on)		The MyoPro 2+ <u>is</u> connect to MyConfig.
Flashing (blinking)		<u>The MyoPro 2+ is experiencing an Error. See Page 36 for instructions.</u>

HOW TO POWER THE MYOPRO 2+ ON AND OFF

-  **WARNING:** Do not use the MyoPro 2+ to drive an automobile or operate machinery.
-  **WARNING:** The MyoPro 2+ is NOT waterproof. Do not shower, swim, or expose the device to rain or other sources of water. Do not wear the device for assistance to wash dishes by hand as risk for water exposure to the grasp motor is high.
-  **WARNING:** Do not attempt to lift heavy objects with the MyoPro 2+; the elbow motor provides at most 5 lbs of lifting assistance.
-  **CAUTION:** The MyoPro 2+ is not suitable for use in the presence of flammable anesthetic mixtures with air, or flammable anesthetic mixtures containing oxygen or nitrous oxide.

POWER ON

-  **NOTE:** Only turn the MyoPro 2+ on once it is correctly and comfortably positioned on your arm. The MyoPro 2+ should always be powered OFF while you are putting it on your arm. Similarly, ensure the power is OFF before starting to take the MyoPro 2+ off your arm. *See your User Manual Appendix for further guidelines.*

1. Press the Power Button.



2. Observe: When the MyoPro 2+ is turning ON, all the lights on the control panel will light up.
3. Observe: After 3 seconds, all the lights will turn off, except for Power Button light.
4. The MyoPro 2+ is ready to use!

POWER OFF

1. Press the power button.



2. Observe: All the lights will stop being illuminated, indicating that the MyoPro 2+ has successfully powered off.
-  **NOTE:** The MyoPro 2+ should remain OFF any time the MyoPro 2+ is not being worn.

SENSITIVITY SETTINGS

Your device will have unique **sensitivity settings** which will be programmed by your Provider when the device is fit to you. These settings correspond to how the device detects and responds to your muscle signal. The sensitivity may be adjusted over time as you continue to use the device. The different sensitivity settings of the device are described below.

Gain	Gain refers to amplification of EMG signal that takes place through the sensor hardware. The higher the gain, the more amplified the User's EMG signal will be, and the easier it will be to trigger the assistance of the device.
Boost	Boost refers to amplification of EMG signal that takes place through the software. The higher the Boost, the more amplified the User's EMG signal will be, and the easier it will be to trigger the assistance of the device.
Threshold	Threshold refers to the value that the EMG signal must cross in order to initiate the motor (in response to either an active muscle signal or a relaxed muscle signal. The threshold can be increased or decreased to the point where the User's EMG signal can get well above it upon activating a muscle, and well below it upon relaxing the muscle.
Range of Motion (ROM)	Another adjustment the MyConfig can make for the MyoPro 2+ is the range of motion for each motor. Your Provider will make sure the range of motion of the elbow and the grasp are optimized for comfort and utility depending on your current passive range of motion.

MAINTENANCE & TROUBLESHOOTING

THIS PAGE IS INTENTIONALLY LEFT BLANK

BEST PRACTICES FOR SMOOTH PERFORMANCE

Several factors can result in erratic movement of the orthosis.

- ⊙ **NOTE:** The metal components of each sensor must have contact with the skin in order to properly read EMG signal.

FACTOR A: STRAP TENSION

Make sure the Upper Sensor Cuff and Upper Cuff Closure are comfortably snug – not too tight, not too loose.

FACTOR B: SENSORS PLACEMENT

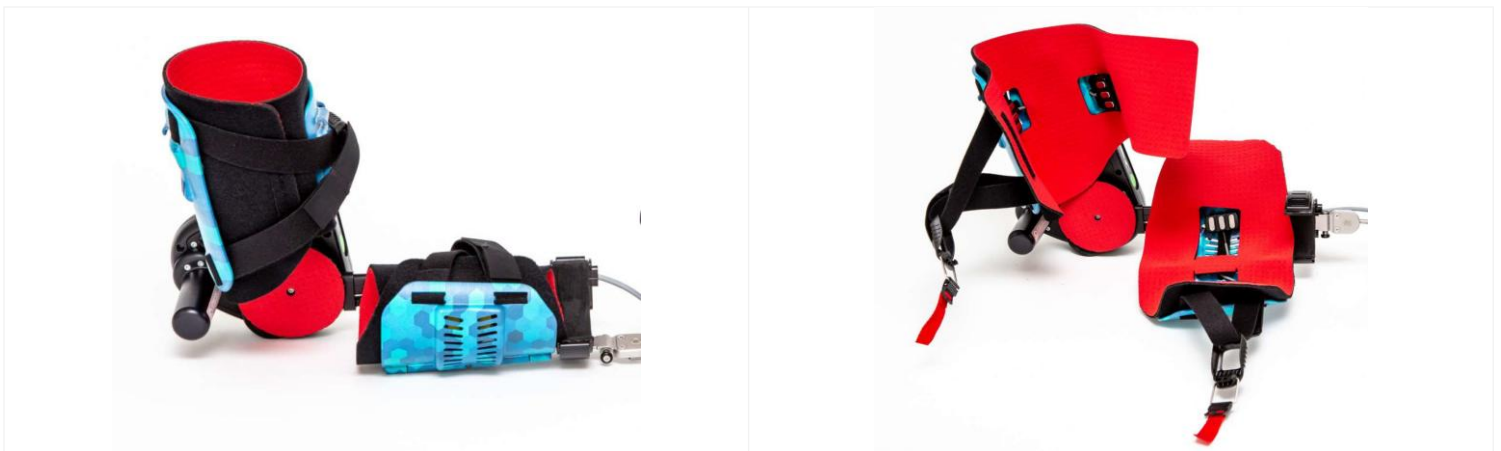
Check that the sensors are centered on the correct muscle site. Some placement adjustment may be made by shifting how the strap is wrapping around your arm.

- ⊙ **NOTE:** Velcro on the back of each sensor allows it to be detached and reattached to the sensor cuffs in a more optimal position. However, this adjustment should **ONLY** be done by your Provider.

FACTOR C: STATIC

Due to static build up and environmental factors, it can take up to 5 minutes for some Users' resting muscle signal to stabilize. If you experience no response from the device, wait 5-10 minutes after donning orthosis to begin using.

- ⊙ **NOTE:** If you experience pain or discomfort, turn off the MyoPro 2+ and check that the straps and pads are not twisted or bunched up. Rest and try again. If pain or discomfort continues, discontinue use of the MyoPro 2+ and consult your Provider.



CLEANING THE MYOPRO 2+

Clean the parts of the MyoPro 2+ (control panel, orthosis, and sensors) which touch your skin once a week or more frequently if dirt or debris has accumulated. To clean the MyoPro 2+ wipe with a soft cloth lightly dampened with Isopropyl Alcohol. Use a Q-tip dampened with Isopropyl Alcohol to get into any smaller grooves, such as on the sensor heads.

- ▲ **CAUTION:** The MyoPro 2+ and accessories are not waterproof. Take care to protect the device from coming in contact with liquids. Never immerse, pour, or spray water or other liquids directly onto the MyoPro 2+.
- ▲ **CAUTION:** Do not use a hairdryer to dry components of the MyoPro 2+.
- ▲ **CAUTION:** Avoid harsh cleaning agents such as bleach and ammonia.
- ⦿ **NOTE:** Take care to prevent the buildup of debris. Let the MyoPro 2+ completely dry out before putting it on again.

REPAIRING THE MYOPRO 2+

Repairs should be made only by your Provider, or by Myomo, directly. To ensure absolute safety of device and personnel, **only** Myomo staff may address repairs to the mechanical or electrical components of the MyoPro 2+. If such a repair is needed, your Provider will send your MyoPro 2+ to Myomo, Inc. Myomo will conduct the repair, and send your MyoPro 2+ back to your Provider. The estimated turnaround time for repairs is 1-2 weeks.

It is considered a Minor risk for a user to be without his or her MyoPro 2+ for an extended period. This repair strategy provides the safest and most reliable pathway for returning the MyoPro 2+ to the user in optimal condition.

- ⦿ **NOTE:** Disassembling the MyoPro 2+ will void the warranty.
- ⚠ **WARNING:** No modification or disassembly of the mechanical or electrical components of the MyoPro 2+ is allowed as it may expose other dangers.

STORING THE MYOPRO 2+

After taking the device off, rest in a clean, dry place to allow the MyoPro to dry.

- ▲ **CAUTION:** Do not use a hairdryer to dry components of the MyoPro 2+.
- ▲ **CAUTION:** Protect the MyoPro 2+ from damage, always use the carrying bag provided with the unit to store or transport the MyoPro 2+.
- ⌕ **NOTE:** Ensure the MyoPro 2+ is completely dry before storing.

Place in the carrying bag for travel and storage. The device may need to be repositioned in order to fit properly into the carrying bag. Gently bring the upper and lower arm frames closer together so the device is in a fully flexed elbow position. This will require moving the elbow motor while the device is powered off.

Move the motor as slowly and as gently as possible, with minimal force. This is the best practice for avoiding damage to the motor.

Storage Environment

The MyoPro 2+ should be stored:

- In a dry location
- Away from direct sunlight
- In temperatures between 0 to 40 °C (32 to 104°F)

The battery is recommended to be stored at or below 20 °C (68 °F), in low humidity environment, free of dust and corrosive gasses. It is best to keep the battery with a state of charge between 50-80%, particularly for longer-term storage.

- ⚠ **WARNING:** If the MyoPro 2+ is not intended to be used within one month, remove the battery from the battery compartment.
- ⌕ **NOTE:** Even if it is in storage, the battery should be recharged every 6 months.

DISCARDING THE MYOPRO 2+

- ⚠ **WARNING:** Do not incinerate the battery.



*Contact your Provider to facilitate proper disposal or recycling.
SEE TECHNICAL SPECIFICATIONS & DEVICE MARKINGS FOR ADDITIONAL INFORMATION.*

AVOIDING DAMAGE TO THE MYOPRO 2+

The MyoPro 2+ is designed to facilitate voluntary movements. It can be damaged by excessive force, either from a User forcibly moving the motor too hard, or if something (such as the arm of a chair) restricts the MyoPro 2+'s movement as it is trying to assist the User.

▲ **CAUTION:** Excess force applied to rotate the motors in either direction will permanently damage the motors.

⤵ **NOTE:** If you move the elbow or grasp motors to change the orthosis' position when it is in Standby mode or off, do so as gently as possible, with minimal force.

⤵ **NOTE:** Stall Detection Feature:

If the MyoPro 2+'s motor gets stuck, for example, by the User's strength or by the arm of a chair, the motor will momentarily shut off. The User would feel that the MyoPro 2+ stops trying to move the User's arm. The device will stop responding to EMG signal and the motor will be able to move passively (as if the device were turned off). This feature prevents the motor from overheating and drawing excessive power from battery when the motor's movement is restricted. The User should relax and try to reposition the MyoPro 2+ away from any interfering objects. The motor will restart on its own, and the device will once again be listening for the User's EMG signal to direct it.

TROUBLESHOOTING

TROUBLESHOOTING TIPS

For additional clinical or technical questions or issues relating to the device, contact your Provider. If your issues remain unresolved, your Provider may contact Myomo. See Page 2 for contact information.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Device is behaving erratically/oscillating in a distinct repeating pattern	Inappropriate sensitivity settings	Talk to your Provider to adjust sensitivity settings
	Poor MyoPro 2+ fit	Check that cuffs and closures are snug, sensors are sitting flat on the skin, and the MyoPro 2+ is aligned correctly on the arm
	Poor sensor conductivity	Check that cuffs and closures are snug, sensors are sitting flat on the skin, and the MyoPro 2+ is aligned correctly on the arm
Discomfort	The straps are too tight	Discontinue use and contact your Provider to ensure proper fit
	Poor MyoPro 2+ fit	Discontinue use and contact your Provider to ensure proper fit
Device appears to fight or resist your movement	Low battery	Charge battery
	Incorrect MyoPro 2+ Use	Contact your Provider to learn correct usage techniques
	Inappropriate sensitivity settings	Talk to your Provider to adjust sensitivity settings.
There is a clicking/grinding sound or frame of device appears “loose” when not in use	There is a mechanical problem	Contact your Provider
Device “locks up” or movement is slow/stiff when in a mode	Low battery	Charge the battery
	Inappropriate sensitivity settings	Talk to your Provider to adjust sensitivity settings.
	Device is in Standby mode	Use the buttons on the Control Panel to change out of Standby mode

MYOPRO 2+ ERROR

- ▲ **CAUTION:** If you detect fumes, flames, melting of components around the battery or battery charger, or the device is hot to touch, **TURN THE DEVICE OFF IMMEDIATELY** and contact your Provider.

RECOGNIZING WHEN THE MYOPRO 2+ IS EXPERIENCING AN ERROR

When the MyoPro 2+ detects an error and initiates an error code, it will not function normally. An electrical or mechanical failure is indicated by the following:

- The Bluetooth light will be flashing (blinking).
- The Power light will be slowly changing color in a repeating pattern – White (which may look Light Blue), Blue, Green, Red, repeat.
- The 4 Mode lights will be turning on and off each time the Power light changes color.

The combination of the Power light color and the 4 mode lights create an **Error Code**. *You do not need to know what the Error Code means; it is intended only for the manufacturer.*

WHAT TO DO ABOUT AN ERROR

1. Turn the MyoPro 2+ off.
2. Wait a few moments.
3. Turn the MyoPro 2+ back on.
4. Check the control panel lights – are you still seeing an error code? YES or NO?

If NO: continue working with your MyoPro 2+ as usual.

If YES, or if the error comes back: contact your Provider, and relay the following information:

When the power button is White , what mode lights are illuminated?	☐ Biceps	☐ Triceps	☐ Close	☐ Open
When the power button is Blue , what mode lights are illuminated?	☐ Biceps	☐ Triceps	☐ Close	☐ Open
When the power button is Green , what mode lights are illuminated?	☐ Biceps	☐ Triceps	☐ Close	☐ Open
When the power button is Red , what mode lights are illuminated?	☐ Biceps	☐ Triceps	☐ Close	☐ Open



Contact your Provider for assistance with a continuing error.

LOCATION OF IDENTIFYING NUMBERS

Elbow Motor Unit

The primary identifying number for each individual MyoPro 2+ is located on the back of the battery and electronics case: it is the serial number for the elbow motor.

It is written as “M000” followed by a 3 or 4 digit number.



Charger

The identifying information for the charger is located on the underside of the charger.



Battery

The identity information for the battery is located on the white label near the battery’s “teeth”.



THIS PAGE IS INTENTIONALLY LEFT BLANK

TECHNICAL SPECIFICATIONS & MARKINGS

THIS PAGE IS INTENTIONALLY LEFT BLANK

TECHNICAL SPECIFICATIONS

⚠ WARNING: The MyoPro 2+ is not suitable for use in the presence of flammable anesthetic mixtures with air, or flammable anesthetic mixtures with oxygen or nitrous oxide.

ENVIRONMENTAL REQUIREMENTS

Temperature	MyoPro 2+ Device Operating: 0 to 40 °C (32 to 104 °F) Storing: -10 to 60 °C (14 to 140 °F)
Humidity	10% - 90% relative humidity, non-condensing
Atmospheric Pressure	700 hPa to 1060 hPa

POWER ELEMENTS

Electrical Characteristics	
Battery Power Source	External/interchangeable 11.25V 2950mAh 33.2Wh Lithium Ion rechargeable battery pack
Battery Charger	Battery Charger: 20-26VDC / 2.8A max Power Supply: 100-240VAC / 50-60Hz
Internal Clock Memory Battery	Internal 3.0 V 40mAh Lithium Coin battery
Environmental Requirements	
Temperature	Battery Charger Operating: 0 to 40 °C (32 to 104 °F) Storing: -10 to 70 °C (14 to 158 °F) Power Supply Operating: 0 to 40 °C (32 to 104 °F) Storing: -10 to 70 °C (14 to 158 °F) Battery For charge: 0 to +45 °C (32 to 113 °F) For discharge: -20 to +60 °C (-4 to 140 °F) Storage < 1 year: -20 to +20 °C (-4 to 68 °F) Storage < 3 months: -20 to +45 °C (-4 to 113 °F) Storage < 1 month: -20 to +60 °C (-4 to 140 °F)

ELECTROMAGNETIC COMPATIBILITY

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Only Myomo personnel may inspect or repair mechanical or electrical components of the MyoPro 2+ in order to maintain basic safety and essential performance with regard to electromagnetic disturbances. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the User is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or re-locate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

ON-DEVICE MARKINGS

Symbol	Description
	Attention – Refer to the accompanying instructions
	Power “On/Off” (push-push) IEC 60417-5010
	The product should be disposed of according to local guidelines
	Complies with FCC Part B Standards- Medical Equipment
	Safety Tested to 60601-1 3rd Edition as amended 1 and 60601-1-2 electromagnetic disturbances.
	RoHS Compliant
	Applied Part Type BF
	Class II construction, does not require a ground

ADDITIONAL INFORMATION

Symbol	Description
	Keep dry
IP21	Ingress Protection rating 21
 0°C 40°C	Operating Temperature Range: 0 to 40 °C (32 to 104 °F)
 10% 90%	Operating Humidity Range: 10% to 90% non-condensing
 700 hPa 1060 hPa	Operating Atmospheric Pressure Range: 700 hPa to 1060 hPa
	Manufacturer: Myomo Inc.

BATTERY AND CHARGER MARKINGS

Symbol	Description
	General warning sign
	Instructions for use
	For indoor use only
	The battery and battery charger comply to the current regulations of the EU guidelines
	The battery complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
	The product should be disposed of according to local guidelines
 Li-ion	Recycling Symbol
	For USA and Canada: Please call 1-800-822-8837 for information on how to recycle this battery
	Charger RoHs (China)
	Battery RoHs (China)
	DC Voltage
	UN Transportation Test
	UL Recognized for Canadian and US market

TOOLKIT

