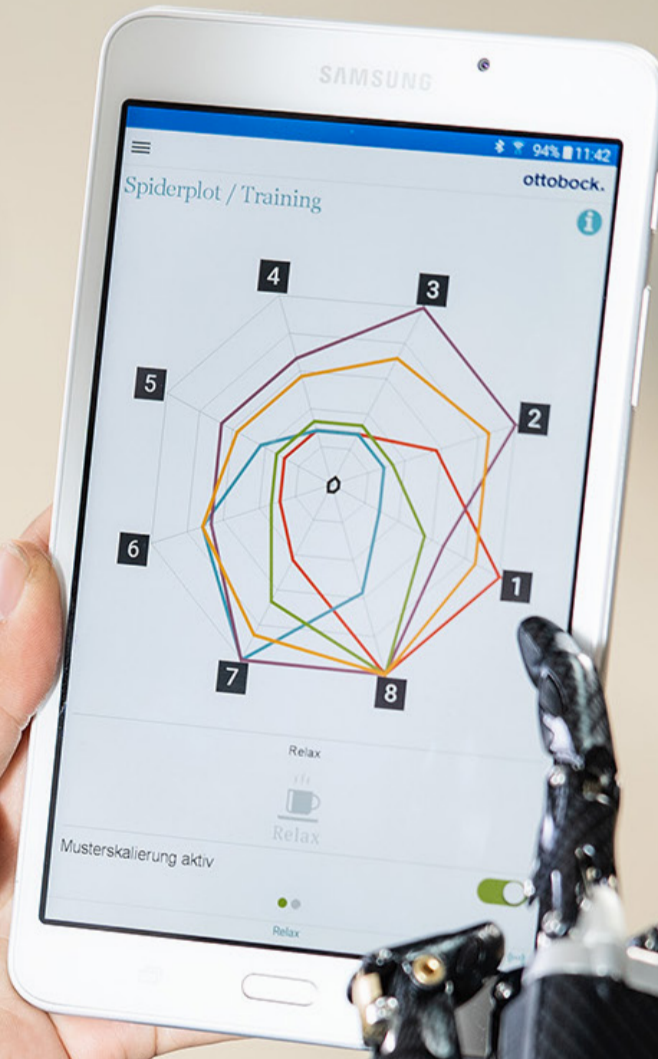


ottobock.

Myo Plus pattern recognition

Update Reference Guide



Quality for life

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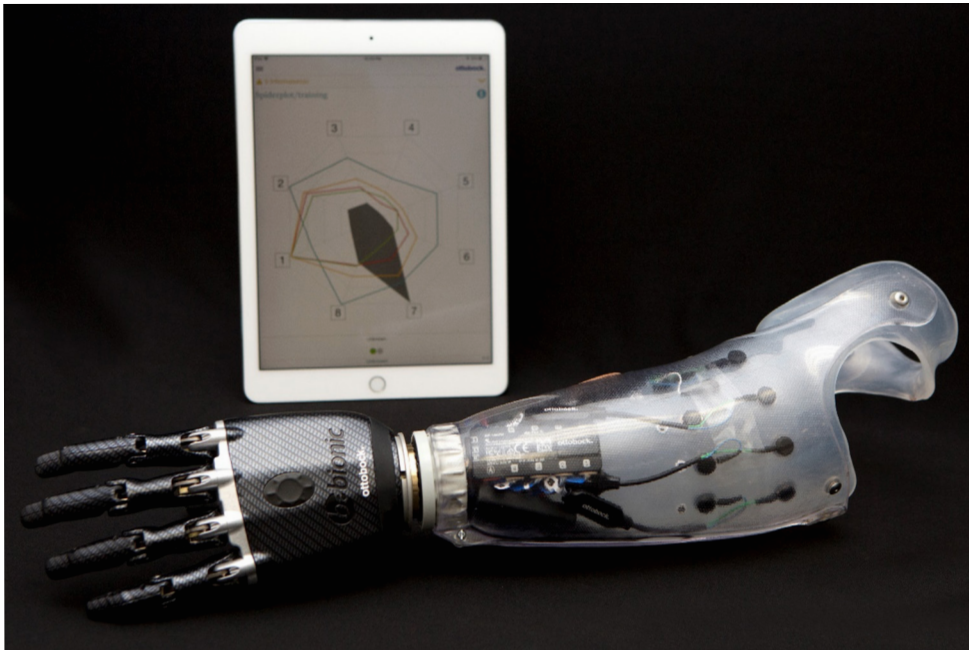
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Myo Plus pattern recognition: *Version 2.0 Now Available!*

Introduction

Myo Plus pattern recognition is a sophisticated, state of the art control system, that provides intuitive control and real time app feedback for individuals using transradial myoelectric prostheses. Control is established via the system's adaptation to the user's natural phantom movements, allowing for direct access to each individual prosthetic motion.

Direct access alleviates the cumbersome switching events that are required with conventional control to access wrist rotation or different grip patterns of the bionic hand. This results in smooth, uninterrupted prosthetic movements without having to concentrate on difficult and unnatural myo signal patterns to fit the limited control strategies of conventional control. By contrast, Myo Plus is a superior option that adapts to individual needs without these previous limitations.

During an initial training session, the user chooses the most convenient phantom movements to assign to each prosthetic function. After these movement patterns are established, the user can continue to fine-tune the system through real-time information and feedback in the Myo Plus app.

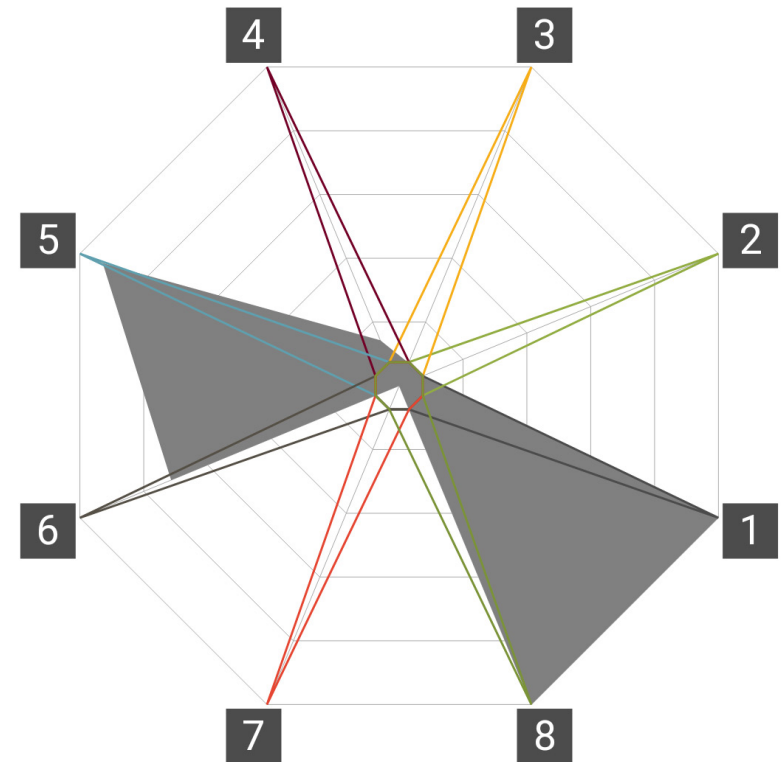
What's New?

We launched MyoPlus in North America in January of 2020 and have received very positive feedback from clinicians and users across the continent. We listened to their feedback and are excited to share some updates to the system. This update includes both a software and a hardware update.

Update Summary

1. Myo Plus App Updates - Interface and Features
2. Improved Myo Cuff & new cable connections for demo, training, and therapy
3. Reduced Standby Power consumption
4. Hot Plug-In / Analog compatibility

NOTE: Existing or older Myo Plus systems in the field are compatible with the updated version of the app.



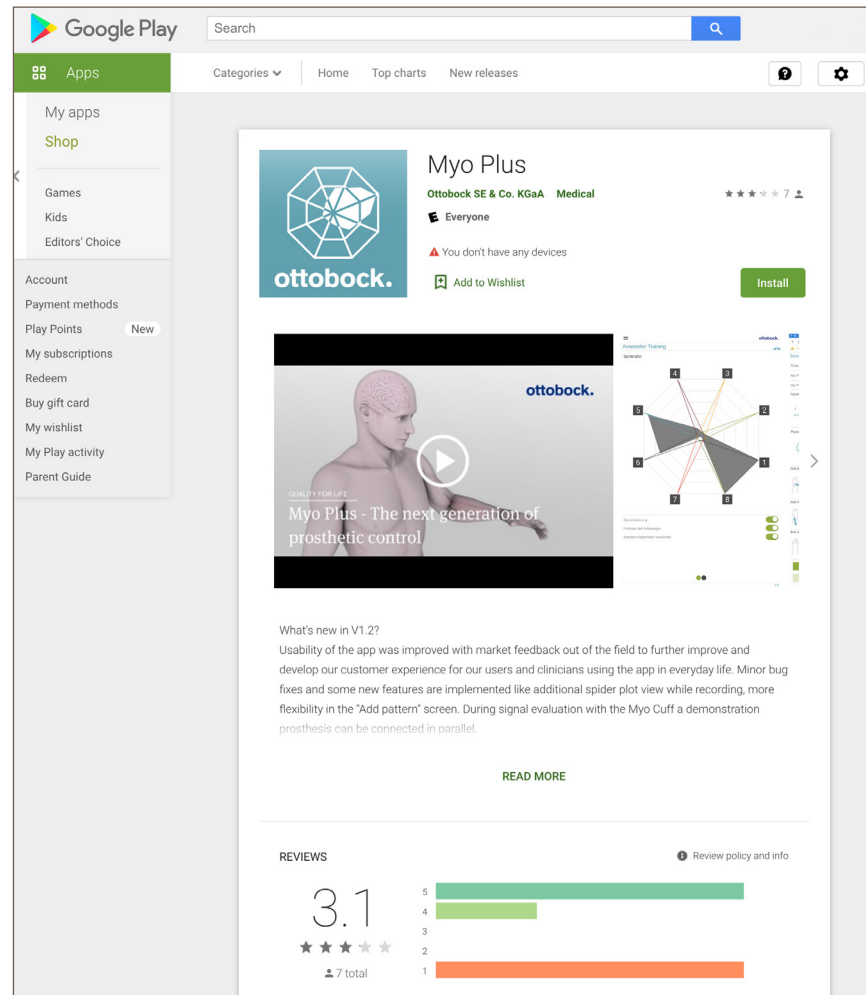
1. Myo Plus App Updates

Old firmware version: 323-4, 1.0.1

New firmware version: 323-4, 1.2.7

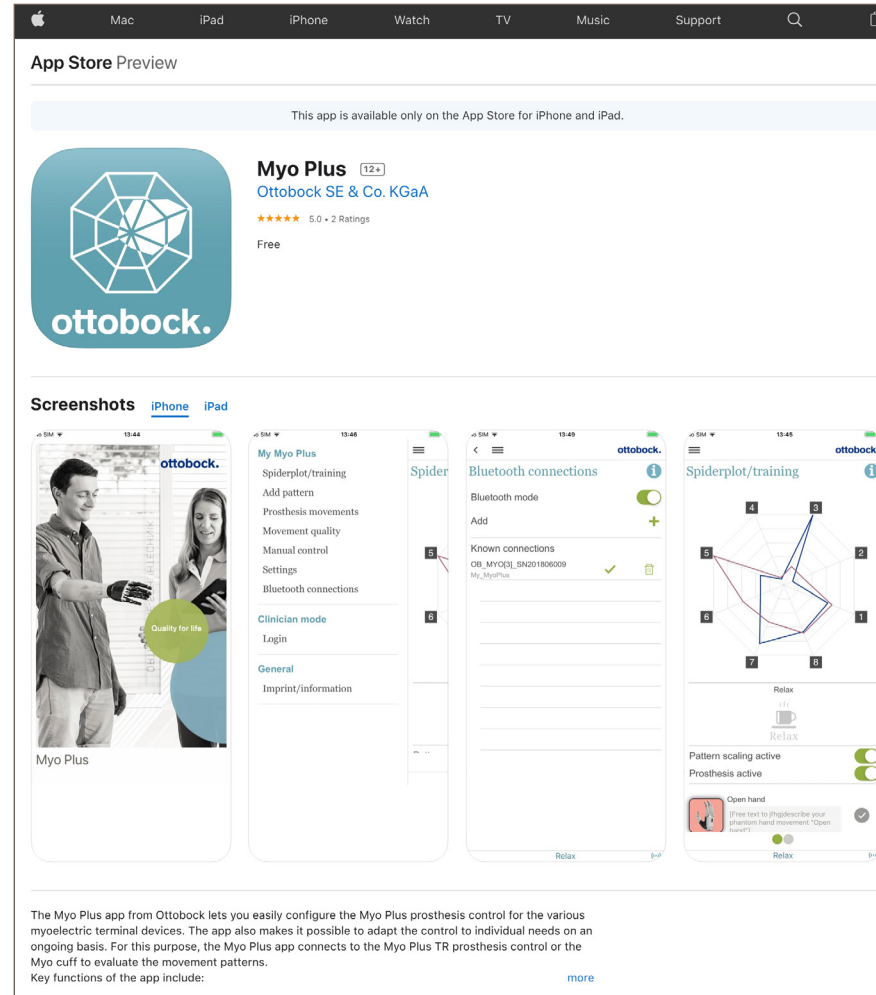
Android systems

- Google Play Store: [Myo Plus - Apps on Google Play](#)
- Requires Android 5.1 and up



iOS devices

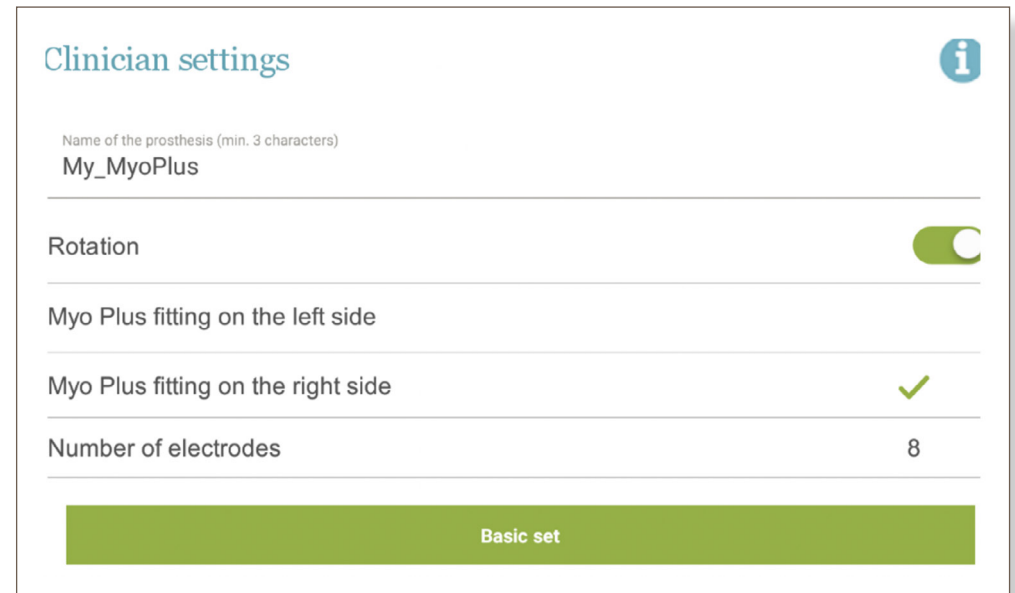
- Apple App Store: [Myo Plus on the App Store \(apple.com\)](#)
- Requires iOS 10.0 or later



The Myo Plus app from Ottobock lets you easily configure the Myo Plus prosthesis control for the various myoelectric terminal devices. The app also makes it possible to adapt the control to individual needs on an ongoing basis. For this purpose, the Myo Plus app connects to the Myo Plus TR prosthesis control or the Myo cuff to evaluate the movement patterns. Key functions of the app include: [more](#)

1.1 NEW Menu: Clinician Settings

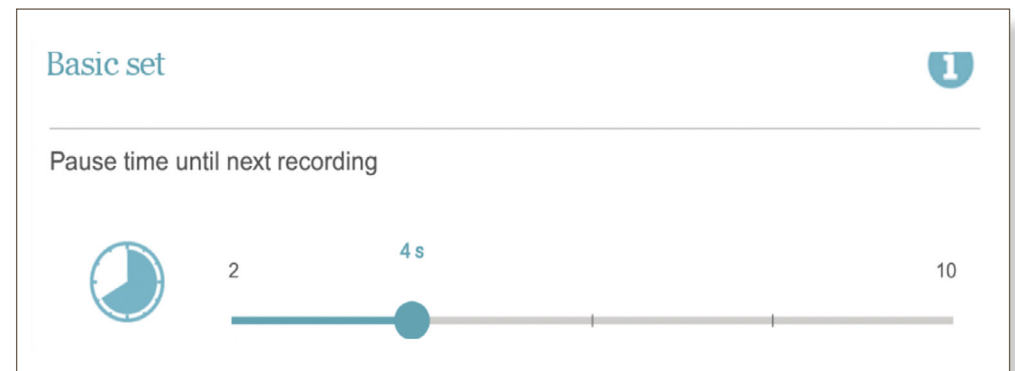
After Clinician log-in, the app automatically navigates to the clinician settings menu for improved navigation.



The screenshot shows the 'Clinician settings' screen. At the top right is an information icon (i). Below the title, there is a text input field for 'Name of the prosthesis (min. 3 characters)' with the value 'My_MyoPlus'. Below this is a 'Rotation' toggle switch, which is currently turned on. Underneath are two rows: 'Myo Plus fitting on the left side' and 'Myo Plus fitting on the right side', with a green checkmark to the right of the second row. Below these is a 'Number of electrodes' field with the value '8'. At the bottom is a large green button labeled 'Basic set'.

1.2 Basic Set Recoding Improvements

The pause time between recordings can be adjusted between 2 – 10 seconds for more flexibility based on user and/or clinician comfort.



The screenshot shows the 'Basic set' screen. At the top right is an information icon (i). Below the title is a horizontal line. Underneath is the text 'Pause time until next recording'. Below this is a slider control. On the left is a clock icon. The slider has a range from 2 to 10, with a current value of 4 s. The slider is a horizontal line with a blue circle at the 4 s mark.

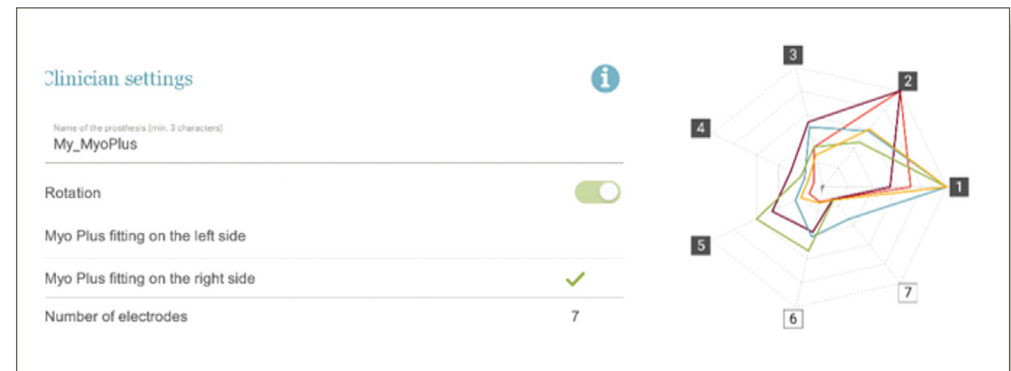
1.3 Recording View

In Clinician mode, you have the choice between seeing the Spiderplot versus the movement picture during recording. The movement picture prompts the correct gesture/pattern during recording. The Spiderplot view is helpful for the clinician to monitor that the same movement pattern chosen during initial pattern discovery is being used for the recording. This ensures pattern consistency for reliable prosthetic control. A smaller movement picture will then also be displayed below the recording circle to prompt the correct movement pattern.



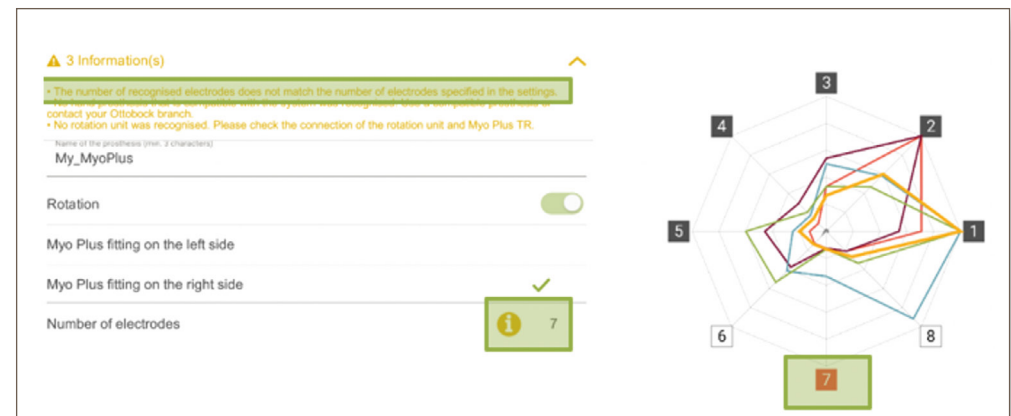
1.4 Automatic Detection of Plugged-In Electrodes

Myo Plus will automatically detect the number of plugged-in electrodes and display them in the Clinician settings, rather than defaulting to 8 as the only option. Plus, the shape of the Spiderplot changes according to the number of electrodes used (black = active electrode contact).



1.5 Electrode Error Notifications

If the electrodes are not connected correctly, or the total number used doesn't match what was inputted in the settings, an error message will notify the clinician: "The number of recognized electrodes does not match the number of electrodes specified in the settings." The lowest number ports in the TR unit should always be used when using less than 8 electrodes.



1.6 NEW Feature: List of Recordings

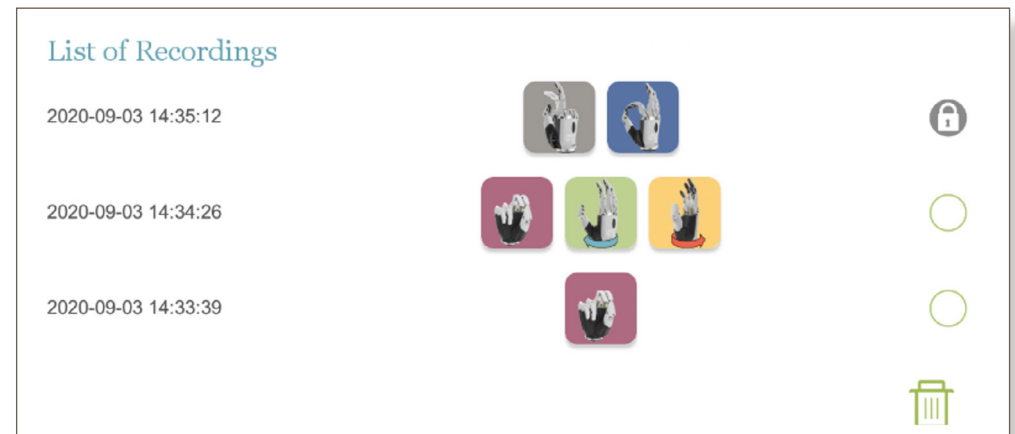
A list of recordings can be found in the menu “Add Pattern” below the selection of movements. Any recordings added outside of the basic set will be displayed. Images of added movement patterns appear to easily see what’s included in each recording.

The additional recordings can also be easily deleted to make room for more recordings. The system can store up to 30 recordings total (6 used for the Basic Set, 24 additional recordings can be added). Additional recordings provide more information to the system, which results in more accurate control.



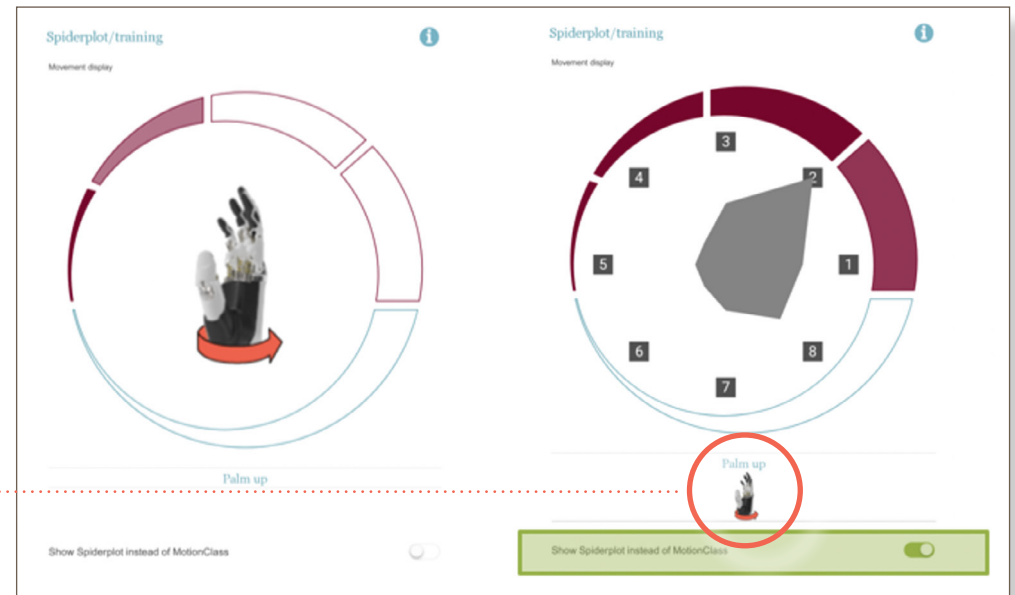
1.7 Locked Recordings

Clinicians can lock recordings to prevent the user from inadvertently deleting them.



1.8 Improved Display Options

You can now choose to see the Spiderplot or the Movement picture during training. A smaller picture of the movement pattern is also displayed beneath the pause time bar when using the Spiderplot option. This is helpful additional visual feedback when in Spiderplot view, particularly for the user.



1.9 Improved Security: New Password Criteria

Password criteria now requires a minimum of 8 characters and a combination of capital letters, lower case letters, numbers, and special characters.

After 5 failed log-in attempts, the account is locked for 30 seconds.

For Android use, "location permission" must be granted for the first Bluetooth connection.


Password


- ✓ Minimum 8 characters
- ✓ At least 1 capital letter
- ✓ At least 1 lower case letter
- ✓ At least 1 number (0-9)
- ✓ At least 1 special character

1.10 NEW Feature: Myo cuff can be connected to a demonstration prosthesis

The use and connection of our tabletop demo stands are now officially incorporated into the app. In the Myo Cuff menu, tap the “connect” button and turn on the dome within 15 seconds.

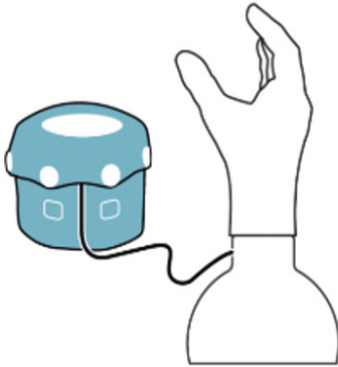
Myo cuff ⓘ

 bebionic hand simulation ✓

 MyoBock hand simulation

Connect a demonstration prosthesis

Connect to a demonstration prosthesis. Make sure that the demonstration prosthesis is switched off before pressing the Connect button.



Connect

2. Myo Plus Hardware Updates

2.1 Myo Cuff fabric: Now labeled

The blue fabric covering on the Myo cuff is now labeled to make proper application on the residual limb easier.

Put on the Myo cuff so that the hand symbol is legible from the user's point of view.

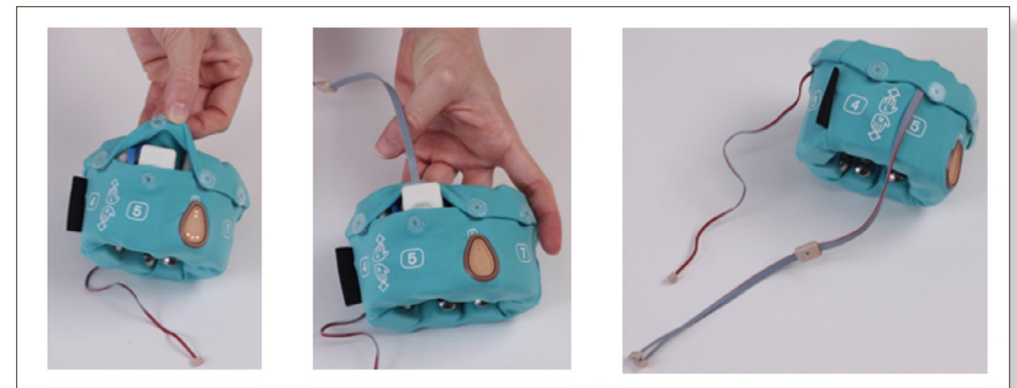
Then rotate the Myo cuff so that the ulna lies between electrodes 1 and 8 (Electrode no. 1 should be positioned laterally so that the electrode number increases in the medial direction).



2.2 NEW: Myo Plus cuff can now be attached/detached from the demo prosthesis

New cabling allows the Myo Plus cuff to be attached or detached from the demo dome directly by the Clinician. This makes the cuff more mobile and easier to for therapy or training beyond the initial demonstration or basic set recording.

Detailed instructions to attach and detach the new cables from the demo dome will be included in the updated Myo Plus quick guide and IFU.



2.3 Reduced Standby Power Consumption

The improved design has reduced the total power consumption during normal use (without active Bluetooth connection) by 23% (21mA to 12mA).

2.4 Hot Plug-In / Analog Mode (Increased Compatibility of Terminal Devices)

Analog Mode: Myo Plus will now recognize devices that operate on an analog signal. This means the system will now recognize devices beyond the bebionic by Ottobock or Myo Bock terminal devices. The functionality will be limited — operation will revert to methods required in standard 2-site electrode control. The user will be able to pronate/supinate the wrist rotator and open/close the terminal device using established movement patterns. To switch grip patterns in a multigrasp hand, they will have to perform whichever switching event is programmed in the hand. Co-contraction will not be recognized as a switching mechanism for any terminal device. This functionality will be useful for simple secondary devices like an electric hook or with a back-up terminal device.

Hot Plug-In: You can now connect or change the terminal device without switching the system on/off. Previously, the hand would close and then no longer operate.

Compatibility with Non-Ottobock Devices

Myo Plus should only be used with components and batteries that have been tested and approved for use. Myo Plus should only be used for its intended purpose and within the technical specifications as indicated in the instructions for use.

No risk analysis or testing was performed on non-Ottobock devices. Use of a non-Ottobock device is considered off-label and therefore, Ottobock cannot be held responsible.



Tech Tip: Make sure the terminal device is connected to the prosthesis before powering on the system. If the terminal device is connected to the prosthesis after powering on, wrist rotation and open/close functions are active, but additional grip patterns of the bebionic hand cannot be recognized.

Please refer to our website for updated marketing materials and the Myo Plus certification course.