



 **ÖSSUR**®  
A C A D E M Y

i-Limb Wrist

Global Academy

# Objectives

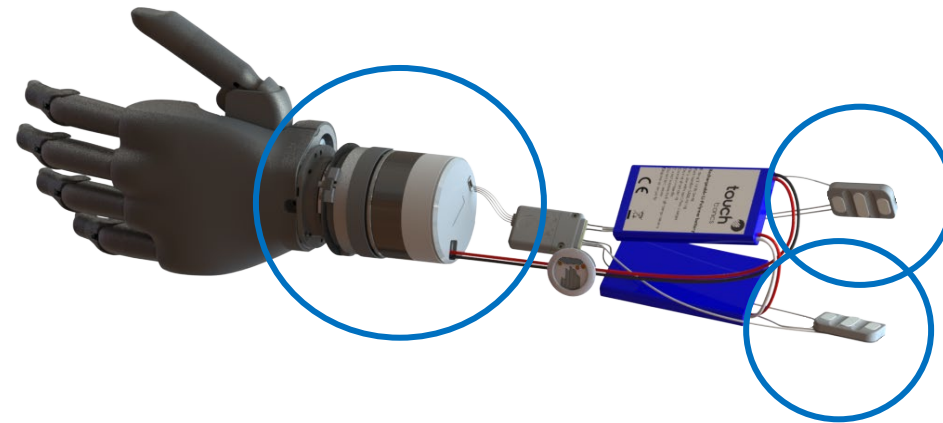
After completing this course, you will be able to:

1. Identify i-Limb Wrist technical specifications
2. Recognize i-Limb Wrist features and benefits



## Introduction to i-Limb Wrist

- Powered wrist rotator
- Controlled via 2 digital electrodes
- Simultaneous rotation
  - i-Limb Quantum
- Direct rotation
  - i-Limb Access
  - i-Limb Ultra
  - i-Limb Quantum



## User Profile

- Transradial level absence
- Two viable control sites
- New and existing myoelectric users

## Contraindications

- Users unable to use two viable control sites
- More proximal level of absence
- Long transradial without room for wrist (56 additional mm)



# Technical Specifications

## Simultaneous wrist rotation upon grip selection

- Horizontal position

- Grip activation

- Gesture
- App
- Muscle
- Proximity



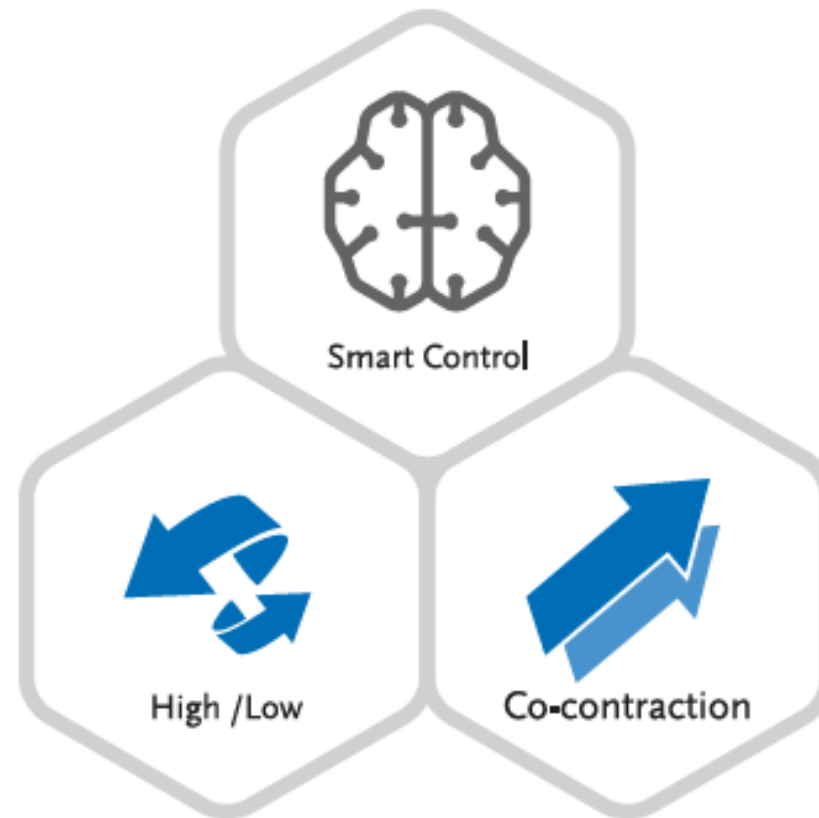
- Wrist rotation to pre-defined optimum position

- Direct wrist rotation / manual wrist rotation to adjust if needed

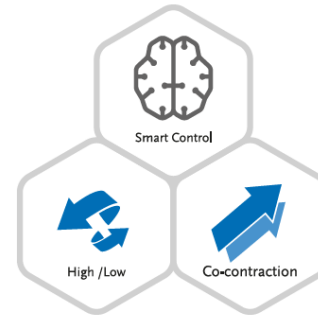
| Grip             | Wrist rotation           |
|------------------|--------------------------|
| Pinch            | 45°                      |
| Tripod           | 45°                      |
| Thumb park quick | Palm facing inwards      |
| Lateral          | Palm facing inwards      |
| Index point      | Palm facing downwards    |
| Open palm        | Palm facing upwards      |
| Handshake        | Palm facing inwards      |
| Grasp            | Palm facing downwards    |
| Trigger grips    | Palm facing inwards      |
| Cylindrical      | No rotation position set |
| Natural hand     | No rotation position set |
| My Grips         | Fully configurable       |

# Technical Specifications

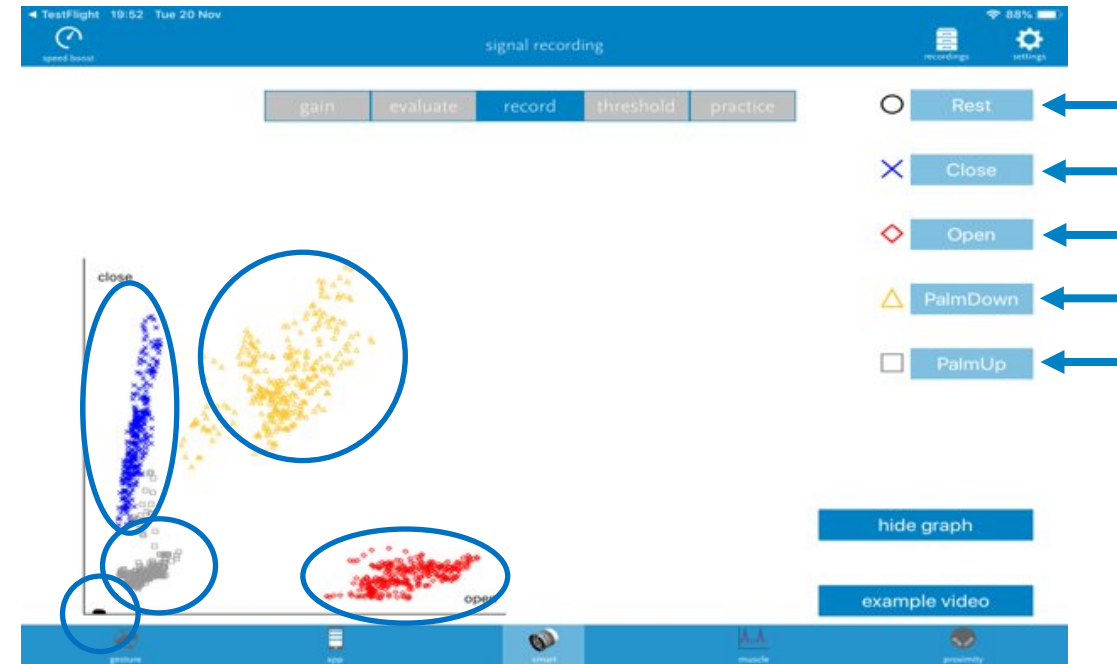
## Direct wrist rotation



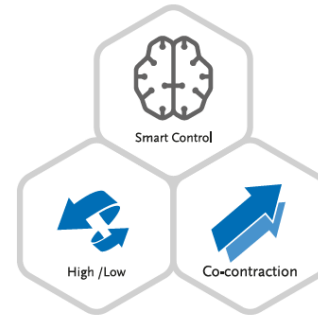
# Technical Specifications



- Smart Control
  - Identifies intuitive muscle actions
  - Rest, close, open, palm down, palm up
  - Direct control to hand and wrist movements
- Biosim app
- Myo-testing to identify optimum position
- User activates muscle actions which feel most intuitive
- Recording process
  - Rest
  - Open
  - Close
  - Palm up
  - Palm down
- Successful recording applied to wrist and hand



# Technical Specifications



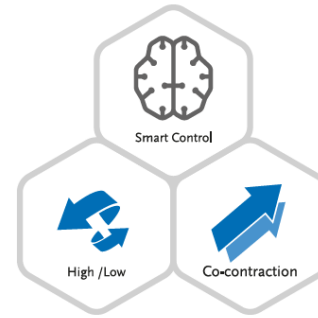
## High/Low

- High (fast and strong) rising signal operates the wrist
- Low (slow and gentle) rising signal operates the hand
- Direction depends on electrode





# Technical Specifications



## Co-contraction

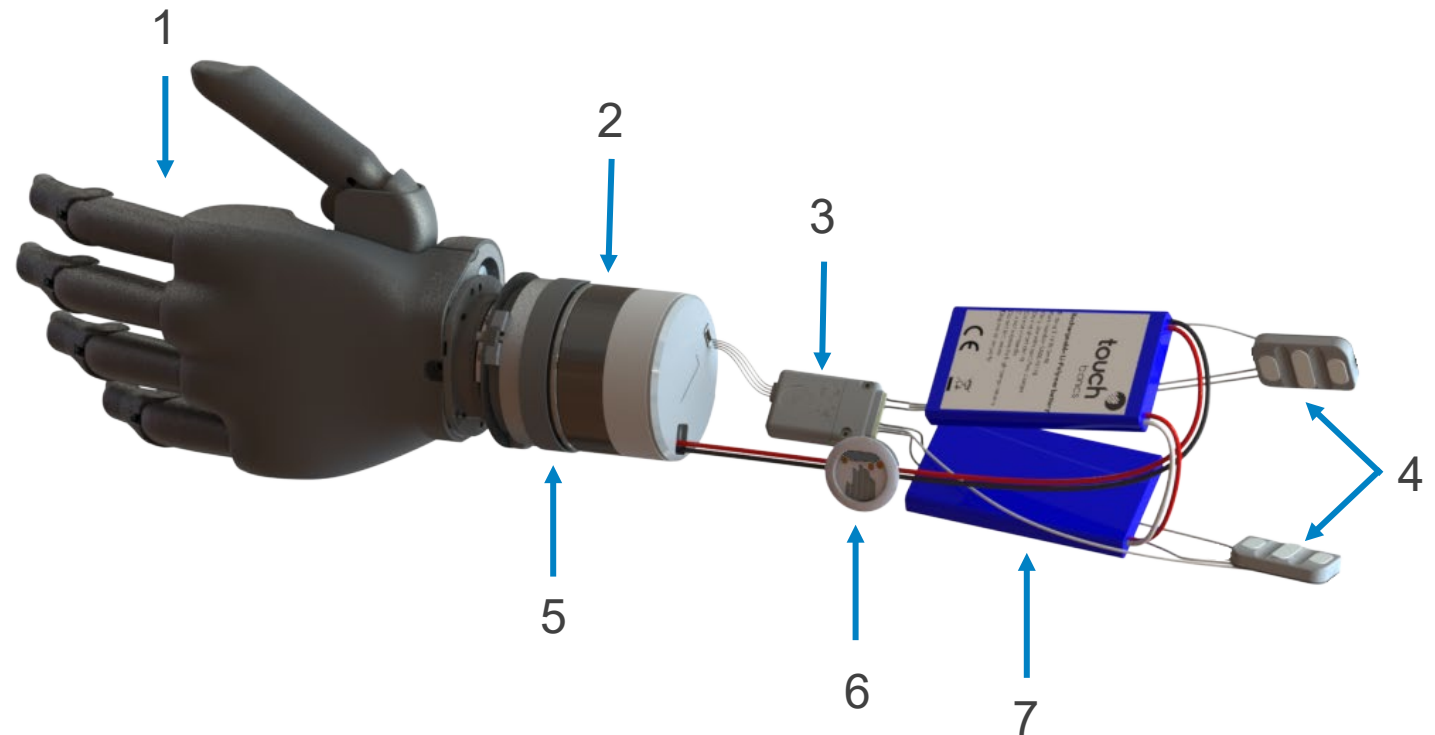
- High contraction of both muscles
- Switch control between hand and wrist
- Open / close and palm up / palm down alternated



# Technical Specifications

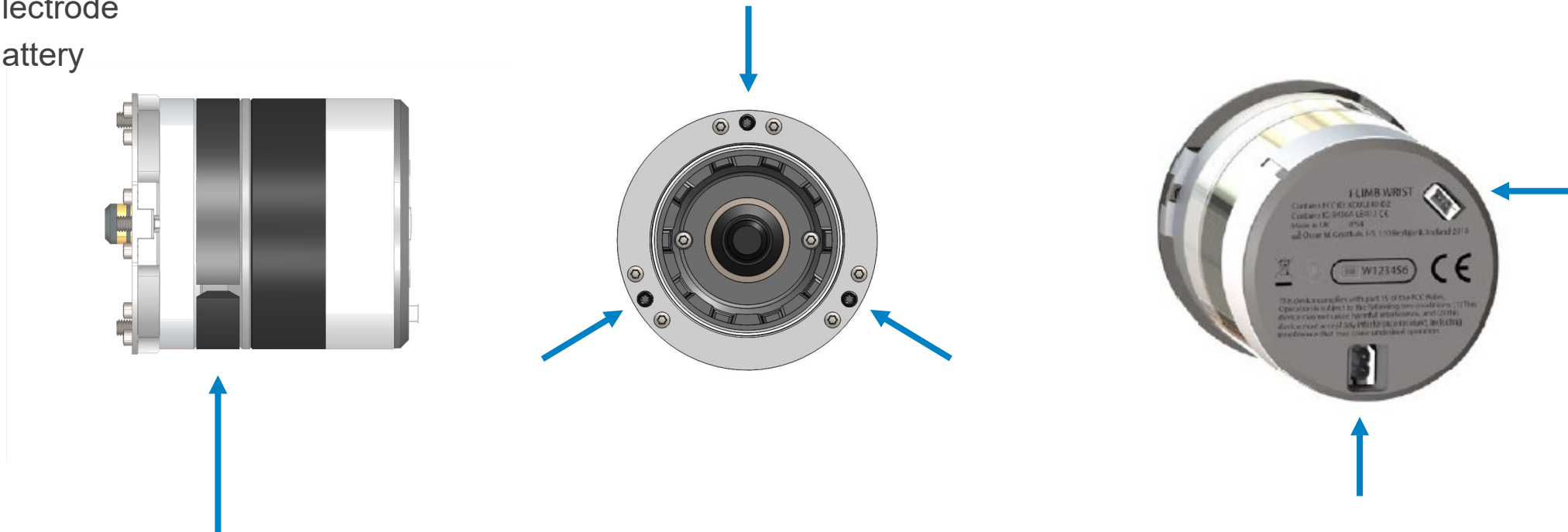
## System components

1. i-Limb (Quantum) hand
2. i-Limb Wrist
3. Digital electrode unit
4. Compact electrode contacts
5. Expansion ring
6. Magnetic charge port
7. Battery



# Technical Specifications

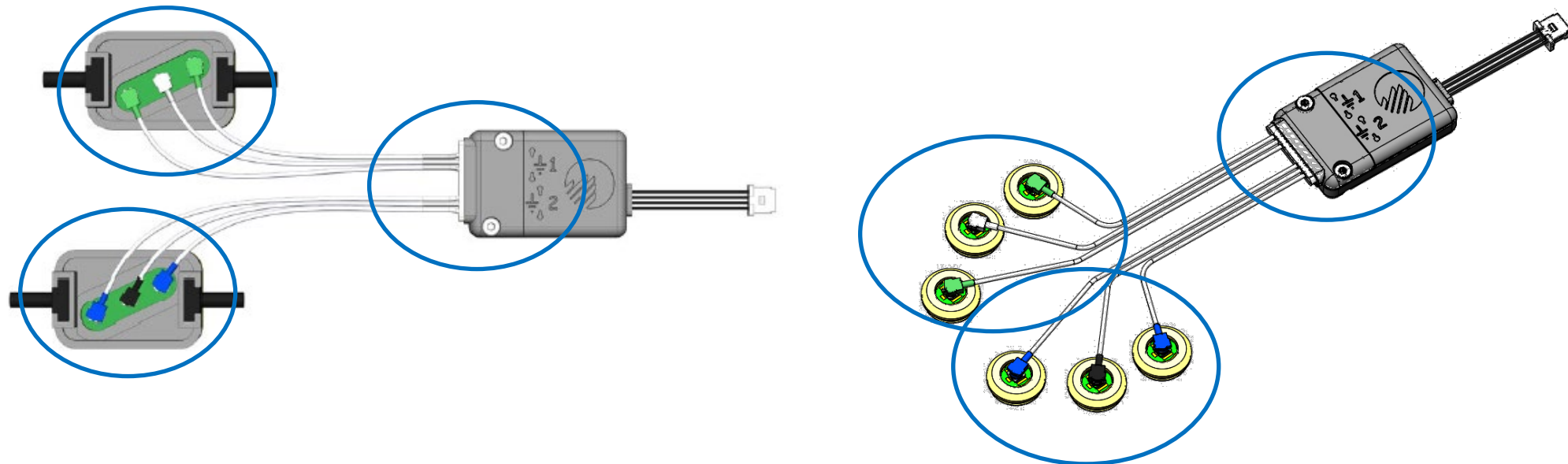
- Length: 56mm
- Weight: 160g
- Expansion ring → fit within outer socket/frame
  - Torque: 0,8Nm
- Proximal connection ports
  - Electrode
  - Battery



# Technical Specifications

## Digital electrodes

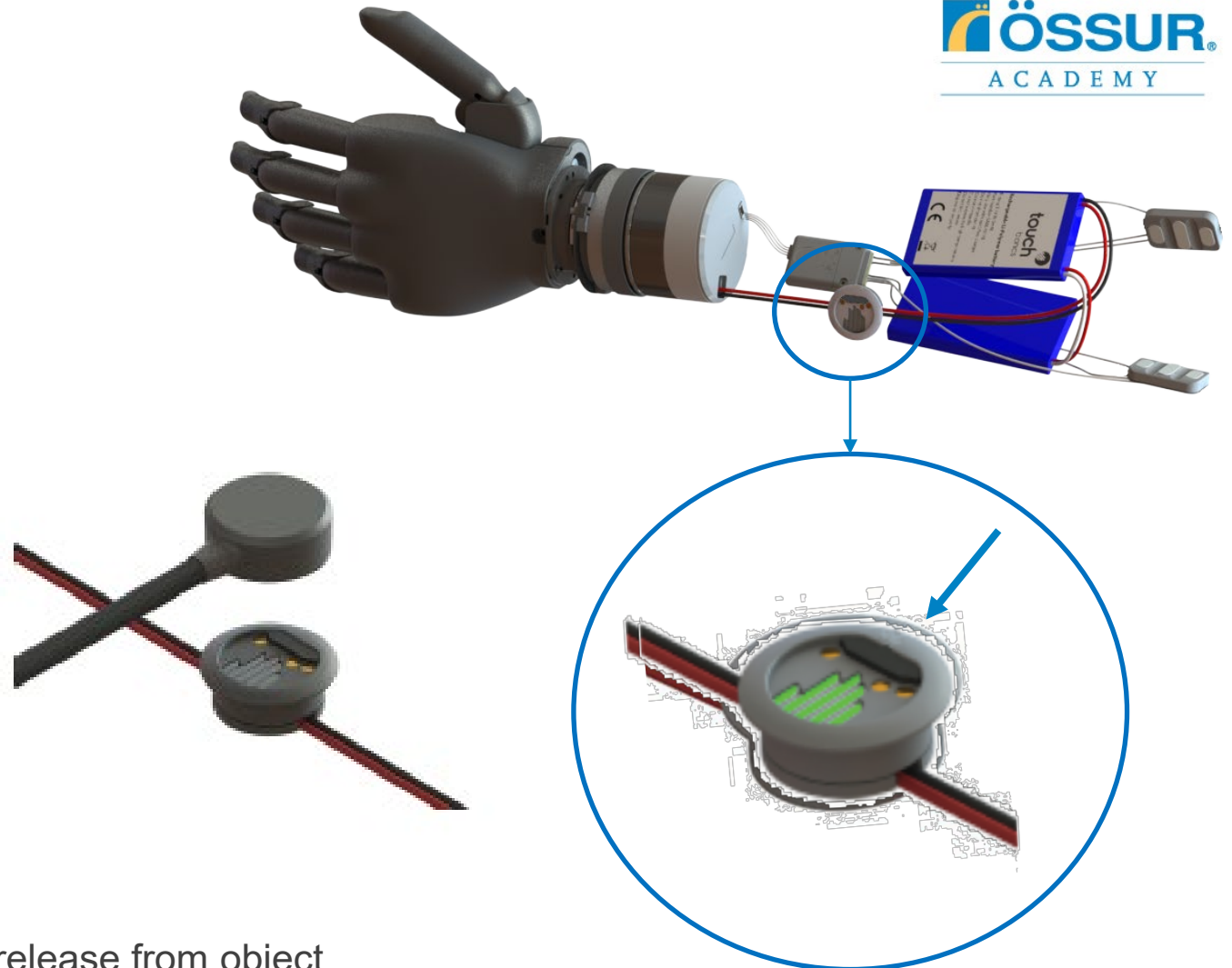
- To control both wrist and hand
- Compact or remote design contact points
- More information extracted compared to analog electrodes



# Technical Specifications

## Magnetic charging port

- Charging battery
  - Charging in progress → red light
  - Fully charged → green light
  - Charging time: 90 min – 3 hrs
- Switch on/off
  - Press and hold button
- Battery level status
  - Bars → 20% level
  - NOTE: emergency reserve to turn on and release from object



# Biosim / My i-Limb



biosim



my i-limb



Rest



Close



Open



PalmDown



PalmUp



gesture



app



smart



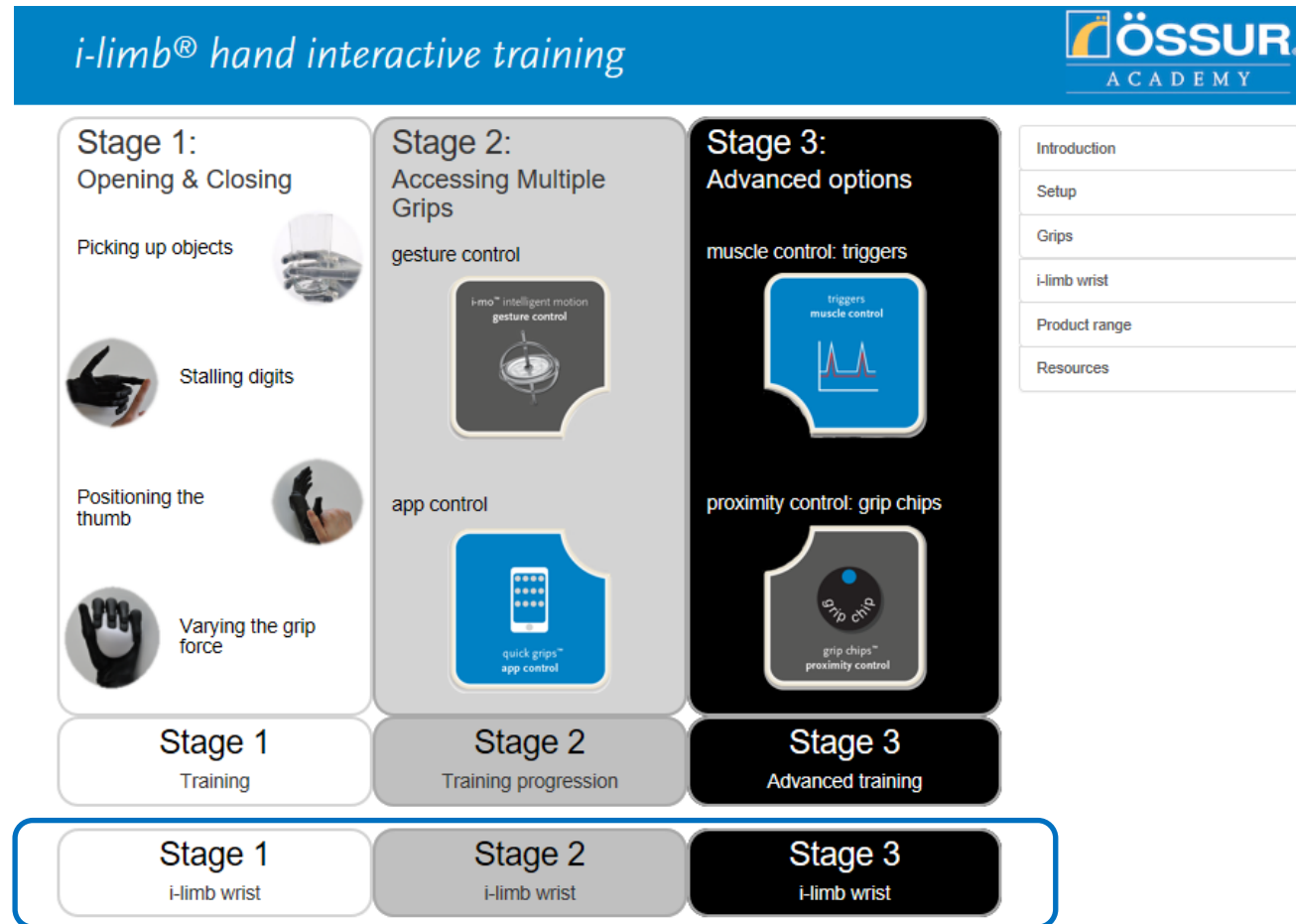
muscle



proximity

# Training

## Staged training approach



## Training – Stage 1

- Focus on hand function open/close without accidental wrist movement
  - Wrist can be turned off in the app at this stage if needed
- Can still use manual wrist rotation at this stage
- Control in multiple planes of motion





## Training – Stage 2

- Changing grips
  - Gesture
  - App
- Incorporate simultaneous control with entering grips
- Horizontal → simultaneous control
- Not-horizontal → enter grip without wrist rotation

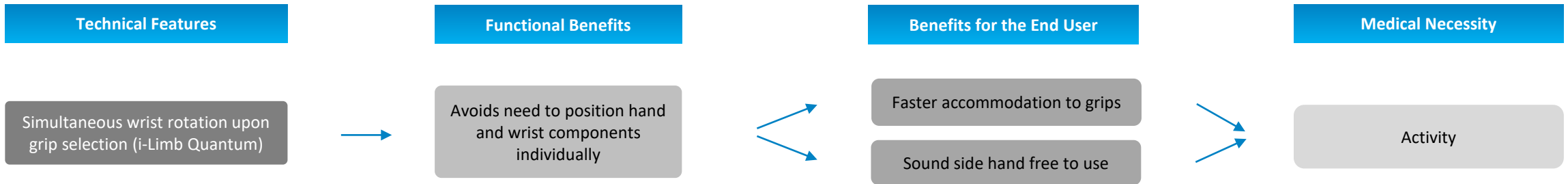


## Training – Stage 3


- Incorporate direct rotational control
  - Smart control
  - High/Low
  - Co-contraction
- Active rotation with objects or pre-positioning outside of grips
- Combine simultaneous and direct rotations control



# Features and Benefits




### Technical Specifications



Simultaneous wrist rotation upon grip selection

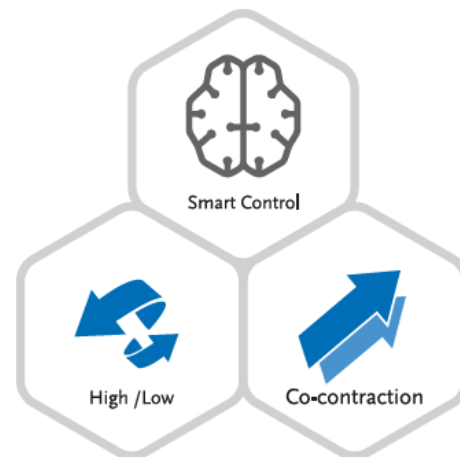
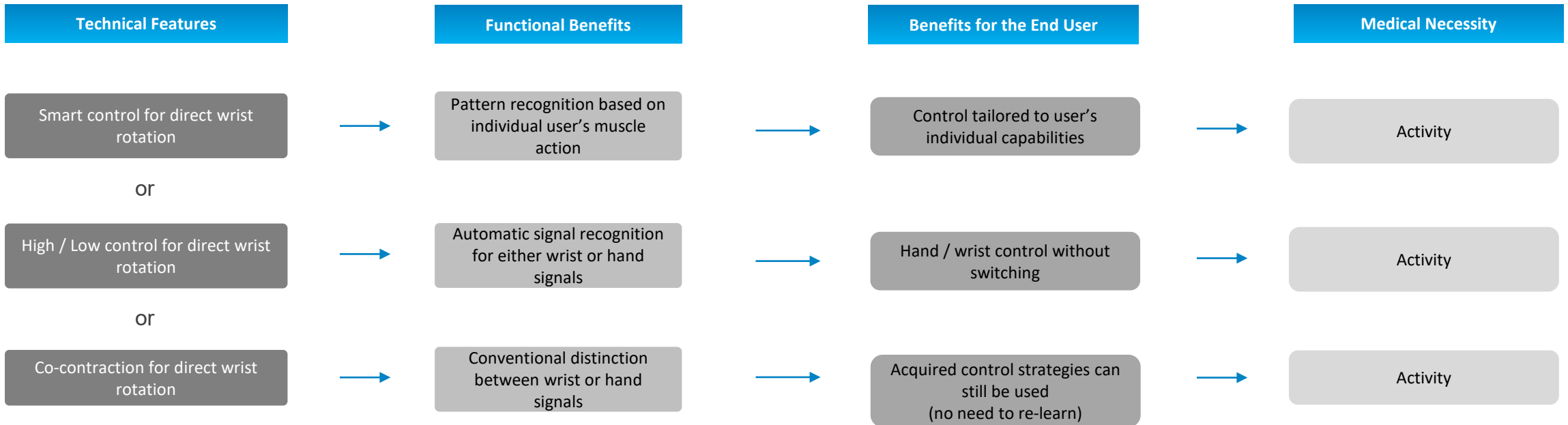
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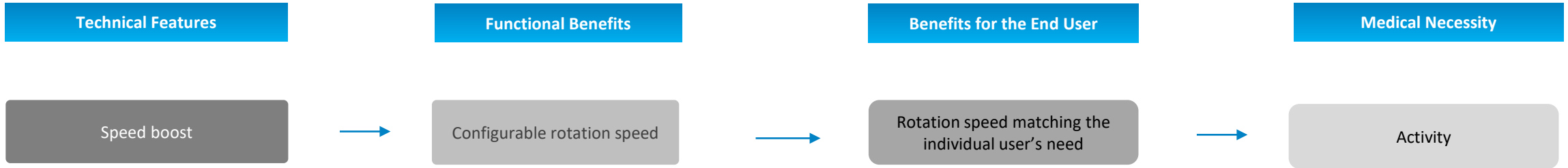
| Grip        | Wrist rotation        |
|-------------|-----------------------|
| Thumb park  | Palm facing inwards   |
| Index point | Palm facing downwards |
| Open palm   | Palm facing upwards   |
| Handshake   | Palm facing inwards   |
| Grasp       | Palm facing downwards |

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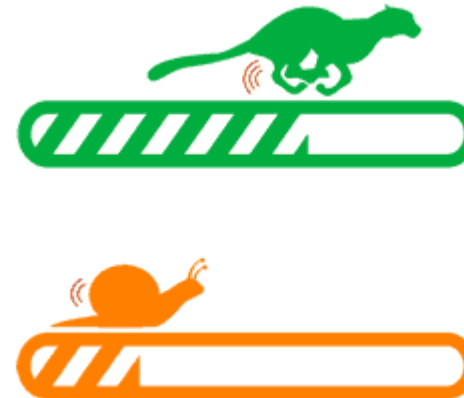
# Features and Benefits



# Features and Benefits



biosim



WE IMPROVE PEOPLE'S MOBILITY

