bebionic Hand: Rehabilitation & Training Protocol

Sources:
- Debra Latour, Single-Handed Solutions, LLC
- RLS Steeper
- Ottobock
- Atlas of Amputations & Limb Deficiencies
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Agenda

• Features & Functions
• Grip Patterns
• Changing Grips
• Training Protocol
• Care & Maintenance
• Outcome Measures
bebionic Design

- Myoelectric-controlled hand
- Multi-articulating fingers
- 3 sizes (S,M,L)
- Mechanical thumb; offers opposition & lateral positions
- Electrodes or linear transducer inputs
- 14 grip patterns; up to 8 can be programmed at one time
- 6 operational mode choices (*4 Single site; 2 dual site*)
- 4 Bebionic wrist options (*small has 3*)
- Natural profile
- Glove not required, but recommended
### Technical Specifications

<table>
<thead>
<tr>
<th>Action</th>
<th>Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>31 lbs</td>
</tr>
<tr>
<td>Tripod</td>
<td>8 lbs</td>
</tr>
<tr>
<td>Key</td>
<td>6 lbs</td>
</tr>
<tr>
<td>Hand Carry</td>
<td>99 lbs</td>
</tr>
<tr>
<td>Finger Carry</td>
<td>55 lbs</td>
</tr>
<tr>
<td>Finger Tip Extension</td>
<td>13 lbs</td>
</tr>
<tr>
<td>Vertical Push Down (through knuckles only!)</td>
<td>198 lbs</td>
</tr>
</tbody>
</table>
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Smart Thumb

- 2 mechanical thumb positions: opposed and non-opposed (lateral)
- Fixed for grasp
- **Thumb automatically moves to accommodate selected grip pattern once manually moved into lateral or opposition**
- Thumb adjustment screws allow for aligning flexion/extension and ab/adduction
- Individual finger motors

<table>
<thead>
<tr>
<th>8 Opposed Positions</th>
<th>6 Lateral/ Non-Opposed Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thumb in opposition to fingers</strong></td>
<td><strong>Thumb parallel with fingers</strong></td>
</tr>
<tr>
<td>Example grip patterns:</td>
<td>Example grip patterns:</td>
</tr>
<tr>
<td>- Tripod</td>
<td>- Key</td>
</tr>
<tr>
<td>- Power</td>
<td>- Finger Point</td>
</tr>
</tbody>
</table>
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Smart Thumb

Thumb Alignment

• CP needs to choose Tripod OR Pinch in software
• Ensures appropriate alignment of thumb contacting 1 vs 2 fingers
• If Tripod selected, Precision Open/Closed won’t be aligned
• Aligned for Tripod out of the box
bebionic Multi-Articulating Fingers

- **Fingers stop at resistance** when being closed
- Proximal joints are fixed due to motor location
- **Spring loaded fingers** → foldaway when force applied posteriorly
  → will always return to extension
  - Helpful when touching something or someone accidentally
  - Not for pushing/pressing something voluntarily
- Field serviceable finger tips on size small
**bebionic Design**

Two Gaiters
- Bonded Palm Gaiter
- Separate Thumb Gaiter

- Smooth flush fitting Thumb gaiter
- Large, flat removable pads
- Injection molded surface enhances grip and stability
- Thumb gaiter allows clinical adjustment of the thumb position
bionics

Wrist Options

**EQD**
- All sizes
- Rotates 360°

**Short**
- All sizes
- Lower profile
- Rotates 360°

**Flexion**
- All sizes
- Button locks/unlocks in flex/extension
- 30° each direction
- 3 locking positions

**Multi-Flex**
- Medium and large sizes only
- Passive movement in all directions
- 3 locking positions (flex, ext, neutral)
- Lateral deviation always available
bebionic
Glove

- Multi-layer Hi-Definition silicone glove
- Easy to don/doff
- 19 TrueFinish™ shades + jet black color options
- Seamless reinforcing liner
  - Provides tear resistance
  - Allows glove to move freely over the mechanism
  - No requirement for lubrication
  - 3-month warranty
- Provides an aesthetic finish
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- Features & Functions
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- Outcome Measures
### bebionic Grip Patterns

<table>
<thead>
<tr>
<th>OPPOSED</th>
<th>LATERAL / NON-OPPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tripod OR Pinch</strong></td>
<td>Mouse</td>
</tr>
<tr>
<td><strong>Power AND Hook</strong></td>
<td>Key</td>
</tr>
<tr>
<td><strong>Active Index</strong></td>
<td>Finger Point</td>
</tr>
<tr>
<td><strong>Precision open</strong></td>
<td>Column</td>
</tr>
<tr>
<td><strong>Precision closed</strong></td>
<td>Relaxed Hand</td>
</tr>
<tr>
<td><strong>Adduction (Power and Key)</strong></td>
<td>Open Palm</td>
</tr>
</tbody>
</table>

[https://www.youtube.com/watch?v=JkNL1sDN2sw&t=19s](https://www.youtube.com/watch?v=JkNL1sDN2sw&t=19s)
bebionic Grip Patterns

Lateral: KEY

- 4 fingers partially close
- Thumb closes to side of index finger
- Thumb can be raised/lowered without moving other 4 fingers
  - Allows for release, capture, or repositioning of object
- Thumb grip limited to protect mechanics of index finger

**Example ADLs:**
- Carrying paper
- Using a spoon
- Holding thin/flat objects (plate or credit card)
bebionic Grip Patterns
Lateral: FINGER POINT

- Extended index finger
- Middle, ring, and little fingers close against palm
- Thumb moves against middle finger
- Index finger cannot be controlled independently

- Example ADLs:
  - Typing
  - Pressing small buttons
bebionic Grip Patterns

Lateral: MOUSE

- Thumb and little finger close to hold side of mouse
- Middle and ring fingers provide stability
- Index finger closes onto mouse button and then backs off
- Each close signal will provide a mouse click
- Can click, double click, and click and drag
- Open signal will release mouse
- Check mouse size for compatibility
bebionic Grip Patterns

Lateral: COLUMN

- Fingers close over thumb
- Thumb stops flexion of index finger, resulting in resistance to support the index finger
- Provides a fixed column to firmly push buttons

- Example ADLs:
  - Pushing heavy objects
  - Pushing larger buttons/switches
  - Holding cutlery
  - Recommended for dressing
    *(thumb is kept out of the way)*
bebionic Grip Patterns

Lateral: RELAXED

- Thumb partially driven toward palm
- All fingers driven to slightly flexed position
- Applying further signal drives finger into Hook Grip
- Use when hand is not actively being used
- More natural and lifelike appearance

- Example ADLs:
  - Hand in pocket
bebionic Grip Patterns
Opposed: TRIPOD

- Index and middle fingers meet thumb
- Ring and little fingers continue to close until resistance is met or close signal stops
- **Example ADLs:**
  - Pick up, hold and manipulate spherical or cylindrical objects such as:
    - Key Ring
    - Coins
    - Pens
    - Jar Lids
- Auto Grip also available in this pattern only
  - Activated with 3 consecutive close signals
  - Deactivation occurs when hand opens
  - Reactivation by 3 consecutive close signals

*Remember, choose Tripod OR Pinch for optimal function; align thumb as needed*
bebionic Grip Patterns

**Opposed: PINCH**

- Thumb only contacts index finger
- Fine manipulation of objects
- Use thumb adjustment screws to precisely align contact
- **Example ADLs:**
  - Nuts/bolts/screws
  - String/cord/cables

*Remember, choose Tripod OR Pinch for optimal function*
bebionic Grip Patterns
Opposed: POWER

- Compliant surface grip
- All 4 fingers close into palm until resistance is met or close signal stops
- When approaching fully closed position, thumb drives in to cover fingers *(additional grip security)*
- Partially closed power grip also leads to HOOK position

**Example ADLs:**
- Hold round objects
  - Ball
  - Fruit
- Hold cylindrical objects
  - Bottles
  - Tool handles
- Also provides a handshake
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Opposed: PRECISION OPEN

- Index finger meets static thumb
- Thumb closes to midpoint of range and pauses
- Index is then active and independent under user control
- Middle, ring and little fingers remain extended; palm is free
- Use thumb screws to manually align thumb/index contact
- **Example ADLs:**
  - Repetitive picking up of small objects
    - Beads, M&Ms, earring backs
  - Useful for tasks with longer durations of time
bebionic Grip Patterns

Opposed: PRECISION CLOSED

- Middle, ring and little fingers close into palm
- Thumb moves to midpoint of range and pauses
- Index is then active and independent under user control
- Use thumb screws to manually align index/thumb contact
- Similar to precision open, but used when extended fingers would be obstructive
- Example ADLs:
  - Working at a desk
bebionic Grip Patterns

Opposed: ACTIVE INDEX

- Middle, ring and little fingers will grasp handle of object
- Thumb will secure grip
- Index finger will then close and be under independent user control
- Open signal will fully open index finger and exit active index mode

- **Example ADLs:**
  - Typing
  - Operating spray bottle
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Additional Grips

Thumb in opposition position

Power

Hook

Finger Adduction

Thumb in lateral position

Mouse

Open Palm

*Hook, finger adduction and open palm are hand positions that result from programmed grip patterns
bebionic Grip Patterns

ADDITIONAL POSITION: Finger Adduction

• Fingers move together naturally as hand closes
• Most functional in Power Grip, but also works in Key and Pinch
• Achieves function in another plane
• Can hold thin, flat objects between flexed fingers

• Example ADLs
  – Cutlery
  – Toothbrush
  – Playing cards
  – Credit cards
  – Tickets
bebionic Grip Patterns

ADDITIONAL POSITION: Open Palm

- Thumb in non-opposed position
- Hand may be fully opened
- Provides flat palm for bowls or plates

*Works best with wrist in locked position*
bebionic Grip Patterns

ADDITIONAL GRIP: Hook

- Thumb opposed
- Partially closed Power Grip provides Hook Grip
- Can also be achieved by closing fingers in Relaxed Grip

**Example ADLs:**
- Carrying shopping bags, briefcases, etc.
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# bebionic Operational Modes

*Programmed by CP using Bebalance Software

*OT must know what program number the user’s hand is in!

## SINGLE SITE

| Program 0  | - Apply signal to open hand  
|           | - Remove signal to close  
|           | - 4 Opposed, 2 Non-Opposed grip patterns available |
| Program 1  | - Short burst to open/sustained signal to close  
|           | - Grip changes if a signal is received after adjustable time period (2 sec max)  
|           | - All 8 grip pattern slots available |
| Program 2  | - Quick rising signal to open  
|           | - Slow rising signal to close  
|           | - Further open signal within adjustable time (2 sec max) to change between grips  
|           | - All 8 grip pattern slots available |
| Program 3  | - First signal opens/second signal (outside of programmable delay) closes  
|           | - Further open signal within adjustable time (2 sec max) to change between grips  
|           | - All 8 grip pattern slots available |

## DUAL SITE

| Program 4  | - Open/open  
|           | - Apply further open signal to switch between grips (after hand is open)  
|           | - All 8 grip pattern slots available |
| Program 5  | - Co-contraction  
|           | - Open signal to open; Close signal to close  
|           | - Open hand halfway and co-contract to change grip pattern  
|           | - All 8 grip pattern slots available |
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Changing Grips

- 4 grips per thumb position
- 2 in default, 2 in alternate mode
- Grip 1, in each thumb position, should be grip used most frequently
- Thorough analysis of user’s daily life activities will define appropriate grips

Each Thumb Position Has:

<table>
<thead>
<tr>
<th>PRIMARY</th>
<th>SECONDARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grip 1 Default</td>
<td>Grip 3 Default</td>
</tr>
<tr>
<td>Open/Open</td>
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</tr>
<tr>
<td>or Co-Co</td>
<td>or Co-Co</td>
</tr>
<tr>
<td>Grip 2 Alternate</td>
<td>Grip 4 Alternate</td>
</tr>
<tr>
<td>PROGRAM SWITCH</td>
<td></td>
</tr>
</tbody>
</table>

*Dynamic Arm Use: Open/Open for hand only; co-co for elbow*
**bebionic**

Grip Switching Events

1. **Myo Signals**
   (Co-Contraction or OPEN-OPEN signals depending on how hand is programmed)

2. **Program Switch**

3. **Thumb Position**
Switching Event: MyoSignals

Open/Open: Program 4

✓ One electrode controls the switch over between Default & Alternate Grips
✓ Created by 2 open signals within 1 second (default setting/adjustable)

Co-Contraction: Program 5

✓ 2 electrodes control the switchover between Default & Alternate Grips
✓ Simultaneous and short contraction of both muscles

✓ To elicit co-contraction in transradial users, ask them to imagine doing one of the following with their phantom limb:
   1. Make a quick fist
   2. Flick water off of their finger tips
   3. Snap their fingers

✓ For transhumeral users, ask them to imagine:
   1. Holding a newspaper under their arm
   2. Unlocking a door with a key
   3. “Shielding” themselves, or “tense up” like something may be about to hit their arm
Program Switch:
4 Functions

- **ON/OFF**
  - OFF: Single Press 3 sec
  - ON: Single Press 2+ sec
  - Also recalibrates hand

- **ALTERNATE GRIPS**
  - Hand ON: Press less than 2 sec
  - Short beep & vibration will occur

- **BLUETOOTH**
  - Hand ON: Single press 4-6+ sec
  - Activates Bluetooth
  - **Double beep/vibration** occurs
  - Single press 2+ sec
  - Disables Bluetooth

- **GLOVE DONNING**
  - Hand OFF
  - Press switch until thumb drives in
Switching Event: Thumb Position

- Move thumb from Opposition to Lateral to change grip sets

The thumb provides optimal use of the grip patterns:

- Determines ML thumb position for Tripod or Pinch & precision grips
- Adjustable to determine an accurate contact point between thumb and the opposition fingers (index finger and middle finger)
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#### Changing Grips

<table>
<thead>
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<th>Secondary Grips</th>
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<td><strong>Alternate-Grip</strong></td>
<td><strong>Tripod / Pinch</strong></td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td><strong>Active Index</strong></td>
</tr>
<tr>
<td><strong>Precision Open</strong></td>
<td><strong>Precision Closed</strong></td>
</tr>
<tr>
<td><strong>Thumb Opposition</strong></td>
<td><strong>Thumb Lateral</strong></td>
</tr>
<tr>
<td><strong>Default-Grip</strong></td>
<td><strong>Alternate-Grip</strong></td>
</tr>
<tr>
<td><strong>Push Button</strong></td>
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Agenda

- Features & Functions
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- Training Protocol
- Care & Maintenance
- Outcome Measures
OT Myoelectric Rehabilitation
General Program

*Should not proceed to prosthetic training until muscle sites are strengthened, isolated, and well-controlled

1. Post-op
2. Pre-prosthetic

MUSCLE SITE CONTROL
1. Strengthening
2. Isolation
3. Coordination
4. Endurance

3. ADLs

*Specific to Terminal Device

Training phases at a glance:

- **Physical Training** (with/without prosthesis)
- **1 Controls Training**
  - Achieve optimal physical condition
- **2 Repetitive Drills**
  - Gain general control of the prosthesis
- **3 ADL Training**
  - Repeat exercises to master your prosthesis
  - Use the prosthesis to its best advantage for everyday activities

**Follow-Up Visits:**
Monitor the need for gain adjustments, prosthetic repair, replacement, or upgrade; treat skin issues; manage pain from overuse; and preserve functionality throughout the aging process.
bebionic Rehabilitation

Physical Training

✓ Balance
✓ Endurance
✓ Strength
✓ Muscle coordination

Physical training exercises are easy to perform at home:

• Without prosthesis
• With prosthesis
• Before prosthetic fitting
• During rehabilitation
Physical Training

- Is the body posture upright?
- Is the body weight distributed evenly between both legs?
- Is the spine rotated as little as possible or not at all?
- Are both shoulders at the same height?
- Balance and coordination should be maintained while on balance board and uneven surfaces
- Strengthening exercises (i.e. therabands)
Controls Training

• **Goal is to follow explicit commands, no random movements**
• Focus is the optimal use of the prosthesis
• Makes the user more intimately familiar with the prosthesis
• User gets a feeling for how to operate the prosthesis **without** objects
• Includes passive and active functions
• Prior to starting passive functions, address:
  ✓ Donning/doffing
  ✓ Charging process
  ✓ Identify program switch (especially if glove is worn)
Controls Training: Passive Functions

1. Fingers
   • Allow user to fold fingers and watch them spring back into extension
   • Educate user to take weight through chassis only, not fingers, when pushing up from a chair

2. Wrist Functions
   • Short & QD wrist will passively rotate 360°
   • Flexion wrist can lock in 30° flexion, 30° extension, and in neutral
   • Multiflex wrist has passive movement in all directions and 3 locking positions. Note: ulnar deviation always available.

3. Program Switch Education
   • Power ON/OFF
   • Activates Bluetooth
   • Activates glove donning mode
   • Changes from primary to secondary grip sets; use handout as visual if necessary

4. Thumb
   • Manually move from opposition to lateral
   • Use sound side hand or push bebionic thumb against thigh
Program Switch: User Functions

- **ON/OFF**
  - OFF: Single Press 3 sec
  - ON: Single Press 2+ sec
  - Also recalibrates hand

- **ALTERNATE GRIPS**
  - Hand ON: Press less than 2 sec
  - Short beep & vibration will occur

*User only needs to know these 2 functions*
**bebionic User Instruction Guide**

**THUMB IN**

<table>
<thead>
<tr>
<th>Position 1</th>
<th>Position 2</th>
<th>Push Button</th>
<th>Position 3</th>
<th>Position 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open/Open</td>
<td></td>
<td></td>
<td></td>
<td>Open/Open</td>
</tr>
</tbody>
</table>

Move thumb and push button to start at position 1; only moving thumb will go directly to position 3

**THUMB OUT**

<table>
<thead>
<tr>
<th>Position 1</th>
<th>Position 2</th>
<th>Push Button</th>
<th>Position 3</th>
<th>Position 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open/Open</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*Please print and write in programmed grip patterns for user*

*If using co-contraction for switching grips, open/open will need to be changed to co-contraction*
Controls Training: Lateral & Opposed Positions

- **Without** objects
- Access all programmed grip patterns
- Open/close varying speed and hand position
- User copies therapist movements
- Monitor compensatory movements
- **10 repetitions for each grip pattern**
- **30 min; 2-3 x day**
- Follow up with combination of various tasks
- Start sitting, progress to standing and movement
Controls Training Process

1. Open/Close Hand
2. Access Grip Patterns
3. Rotate Wrist Flex/Ext Elbow
4. Switch Between Components
5. Commands vs Random Movements

*If applicable
Repetitive Drills

- Focuses on **training with objects**
- **Grasping, holding and releasing**
  - objects of various size, surface, hardness and flexibility
  - use different grip patterns (chosen for your user)
- Many variations, repetitions and combinations of exercises

**GOAL**

In any situation being able to reliably and confidently handle objects using appropriate grip force, speed and a precise opening width.
## Repetitive Drills

<table>
<thead>
<tr>
<th>1. INDIRECT GRASPING</th>
<th>2. DIRECT GRASPING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initially, the object is <strong>passed from the</strong>*sound side to the prosthetic hand.**</td>
<td>Directly grasping an object with the prosthetic hand only:</td>
</tr>
<tr>
<td>The proprioceptive information received will support the user in operating the hand properly.</td>
<td>• Train all/different hand modes</td>
</tr>
<tr>
<td></td>
<td>• With/without visual feedback</td>
</tr>
<tr>
<td></td>
<td>• Focus on precise grip force</td>
</tr>
<tr>
<td></td>
<td>• Improve movements and coordination</td>
</tr>
</tbody>
</table>
Repetitive Drills

- Grasp, hold & release activities with objects
- Focus on proportional control
- Various objects in different planes and axes
- Variations, repetitions, & combinations of exercises
- **1-3 hrs/day**
- 90-100% accuracy
- Minimized compensatory movements
- Can add games to increase motivation

Variations:

- Modes
- Hand Positions
- Shapes
- Sizes
- Object Diameter
- Grip Force
- Surfaces
- Durometer
- Delicate Objects
Repetitive Drills Process

**HAND**
- Same size objects
- Varied size/densities
- Varied heights & planes of body

**WRIST**
- Prepositioning TD
- Pro/Supination
- Various heights & planes of body

**METHOD**
Usually most disliked process, but allows for non-threatening experiences that provide opportunities to troubleshoot
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Repetitive Drill Progression

Objects
1. Hard
2. Soft

Position
1. Sitting
2. Standing
3. Walking
4. Uneven Ground

Task Completion
1. Proximal
2. Distal

Task Completion:
Without/Reduced Visual Control

Task Completion:
1. Cross Midline
2. Overhead
3. Side

Beginning

End
ADL Training

- Transfer the training to the **daily routine**
- Everyday tasks are integrated in the training
- Encourage prosthetic use and manage individual tasks
- Use all the grip patterns programmed for your user

**GOAL**

To increase independence, carry out functional activities confidently with both hands using objects which are regularly used in daily life.
Activities of Daily Living

GOAL:
To increase independence, carry out functional activities confidently with both hands using objects which are regularly used in daily life.

- Using prosthesis to its best advantage for ADLs
- Full integrated daily use with both lateral & opposition
- User achieves maximum autonomy & independence
- Determining when to use prosthesis as functional assist vs primary action
- Customized activities
- Tasks should also be done as “homework”
- Motivation
- Start with 3-5 activities
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Rehabilitation

ADL Training

**Lateral Power Grip**
Moderate-sized objects are gripped sideways

**Lateral Pinch**
Items are gripped from the side

**Adduction**
Flat, thin objects held between fingers
Works in both opposition and lateral
ADL Training

**Opposition Power Grip**

Hold objects with a large diameter

**Tripod Pinch**

Hold small objects securely

**Open Palm**

Flat hand position
ADL Training

Neutral Position/Relaxed Grip

Natural, physiological appearance in the resting position

*Allow the user to practice ADLs as long and intensively as is beneficial… so the user is motivated to also continue training independently.
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Agenda

- Features & Functions
- Grip Patterns
- Changing Grips
- Training Protocol
- Care & Maintenance
- Outcome Measures
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Wear Schedule

- Depending on muscle strength 1-2 hours first day
- Increase wear time by 1 hour each day as tolerated
- Skin checks
  - Redness that disappears 10-20 min after doffing prosthesis is ok
  - Persistent redness or pain needs to be evaluated by CP
- Clean inside of socket as needed; no soaps or powders on electrodes!
Battery Life

- 10-12 hours of operation with one charge is typical; 16 hours max active use
- 4 hours to charge
- 2200 mAh battery
- Batteries last 1,000 charge cycles (or about 3 years)
- When approaching battery drain, hand will slow down and begin to respond to only open signals (to avoid dying in closed position, possibly on object)
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Glove Care

• General soiling can be removed with soap and water
• After cleaning remove all traces of the cleaner and wipe the surface dry
• Most dyes will be fully removed by this process
• A liquid domestic fabric softener can be diluted to reduce “tackiness”
• Material used will resist most staining media
1. Move thumb into opposed position
2. Switch hand off by pressing program switch for ~ 3 seconds
3. Press and hold program switch for 6 seconds for hand to drive into glove donning mode
4. Fold up base of glove
5. Pull glove over hand
6. Align fingers and thumb of hand with corresponding spaces in glove
7. Hold down program switch for 4 seconds to exit glove donning mode; begin using hand
Agenda

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Outcome Measures

WHY?
• Assess current level of performance with prosthetic device to compare with outcome later on

WHEN?
• At initial fitting (Rehabilitation stage 0)
• At definitive fitting
• Regular follow up visits
Requirements

• Sensitive for showing benefit of simultaneous control
• Prosthetic evaluation in quality and quantity
• Close to “daily life”
• Easy to perform, not too complicated (feasibility)
• Valid for prosthetics

➡️ The following assessments are only recommendations!
**bebionic Rehabilitation**

**Recommended Outcome Measures**

**Functional outcome measurements**

- SHAP - Southampton Hand Assessment Procedure (in standing position for TH level or higher)
- ARAT - Action Research Arm Test
- ACMC - Assessment of Capacity for Myoelectric Control
- Clothespin Relocation Test
- Box and Blocks Test
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Recommended Outcome Measures

Questionnaires

– DASH - Disabilities of the Arm, Shoulder and Hand
– SF-36: RAND 36-Item Short Form Health Survey
– COPM - Canadian Occupational Performance Measure
– WHOQOL bref
– WYH MPI - Multidimensional Pain Inventory
– PDI - Pain Disability Inventory
– VAS - Visual Analog Pain Scale
Other Outcome Measures

• AM-ULA: Activities Measure for Upper Limb Amputees

• Jebsen-Taylor Hand Function Test
  http://www.strokeengine.ca/indepth/jhft_indepth/

• OPUS-Upper Extremity Function Status
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Power Past Impossible

https://www.youtube.com/watch?v=w4KvOJlu5Xo
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Professional & Clinical Services

Our team is here to help by:

- Conference calls
- FaceTime
- WebEx
- Strategic visits
- Group therapy trainings
Thank you for your attention!

www.ottobock.com

Please direct any questions to:

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