



# Empowering people with impaired hand function



## Carbonhand – The smart and intuitive grip-strengthening glove

Carbonhand is an assistive device in the form of a grip-strengthening glove with pressure sensors in the fingers and palm that detect when the user performs a grip, and then applies the force needed to ensure a firm grip. The more force the user applies, the more force Carbonhand will apply.

Carbonhand is intended to enhance the user's ability to perform activities of daily living. It can be used in the home environment, indoors or outdoors, and in all public places. It is worn as a conventional glove with a cable attached to a compact power unit that is worn close to the body or next to the user.

### Main features

- A three-finger glove that enhances the grip strength during usage
- Multiple sensors on each finger and one on the first MCP joint
- Control Pad with three programmable profiles and an activation button, configured via smart app
- Glove sizes and different carrying solutions available to fit each user
- Proven to enhance the user's ability to perform activities in daily living.



### Enhances grip and endurance

Artificial tendons and electric motors dynamically add power to the glove ensuring a firm grip and endurance for people with impaired hand function. This enables activities in everyday life, at work, or during rehabilitation.

### The glove adapts to your needs

A control pad on the wrist allows the user to easily switch between three profiles or activate the glove with a button to make, or maintain a grip. Each profile can be adapted for different situations. For example, you may need more support for leisure activities and less for simpler household activities. The profiles are configured from an app on your smartphone.



The Carbonhand system consists of the glove and a small power unit that provides the power as required. You can wear Carbonhand on your back or around your waist, which allows it to be customized to suit the situation or your preferences.

### For people with impaired hand function

Carbonhand is a revolutionary device that gives back power to people with reduced grip strength and/or impaired hand function, increasing independence, and contributes to enhancing the quality of life.

Carbonhand is not for everyone, but it can mean everything to some. Some examples of impaired hand functions where Carbonhand can be useful are:

- Central nervous system disorders such as stroke, MS, or spinal cord injury.
- Orthopedic injuries including fractures in the hand, nerve damage after surgery, or brachial plexus injury.
- Rheumatic diseases or osteoarthritis.





### Immediate impact

The impact of Carbonhand is immediate. With an applied force of up to 20 Newtons (N) per finger, a large proportion of patients with impaired hand function or reduced grip strength are now able to perform household and leisure activities.

The people currently using Carbonhand have different underlying causes of impairments in their hands such as a stroke, peripheral nerve damage, plexus damage, traumatic injuries, spinal cord injuries, or weakness due to age.

It is always the user's hand function and not the diagnosis that determines whether Carbonhand can assist the user or not.



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