

October 20, 2022

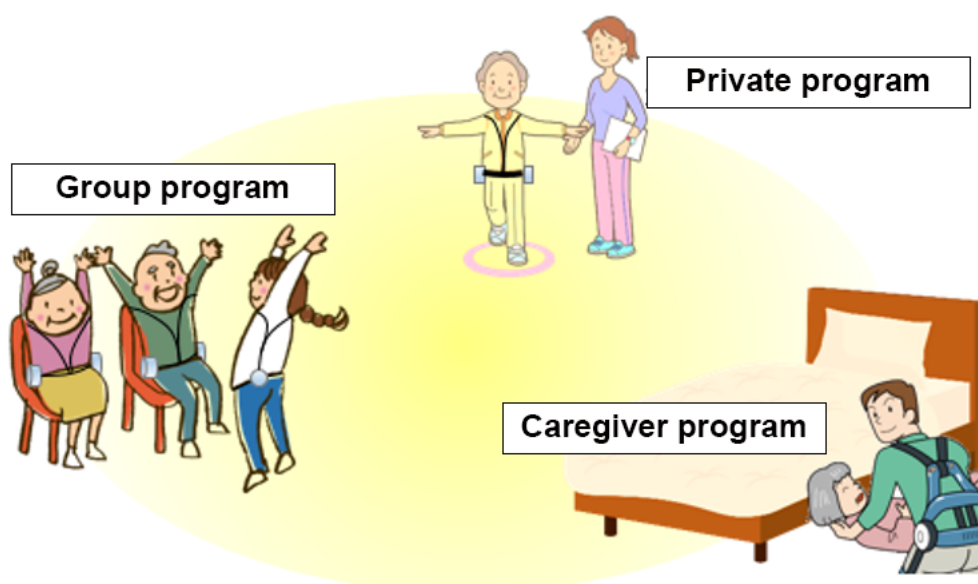
<Press Release>

Ina City, Nagano Prefecture
Marubeni Ina Mirai Denki Corporation
CYBERDYNE Inc.

Commencement of health promotion project 2022 using Power Assist Suit

Ina City, Nagano Prefecture (Mayor: Takashi Shirotori, from now on referred to as "Ina City") will launch this project to improve the health and quality of life (QOL) of the elderly in the community by improving their physical functions and motivation through the use of power-assistive suits (Wearable Cyborg HAL (see attached)).

In this project, Ina City assigns Marubeni Ina Mirai Denki Corporation (Head Office: Ina City, Nagano Prefecture; President: Akihiko Koenuma) to formulate and demonstrate a voluntary exercise program using a power-assist suit. The project utilizes the world's first technology called "HAL" (see attached), developed by CYBERDYNE Inc. (Head office: Tsukuba City, Ibaraki Prefecture; President: Yoshiyuki Sankai), which connects a person's brain nerves and musculoskeletal system, turning the wearer into "Cyborg" by assisting their movement according to the wearer's intention.



<Image of the Health Promotion Program>

In recent years, with the declining birthrate and aging population, the number of older adults and the aging rate has been on the rise, and in Ina City, the aging rate has exceeded 30%. This project aims to support independence and create opportunities for outings by the elderly so that they can continue to live with a sense of fulfillment in their familiar neighborhoods.

For "pain in the legs and hips, etc." (see table below), which is the most common factor preventing elderly people from going out, HAL helps to reduce pain, maintain and improve physical functions, and enhance independence by enabling them to exercise repeatedly without strain.

There are three options available for this program. a) a group training program for several people, b) an individual training program for those who wish to use the equipment at their own homes, and c) a program for caregivers to reduce the workload of family members and other caregivers.

<p>Group Exercise Program Participants Wanted Those who are generally over 60 years of age. Those who feel their legs and hips weakening with age. (For details, please refer to the flyer for participants, etc.)</p>	<ul style="list-style-type: none"> • Main obstruction of going outdoors (multiple answers are allowed) <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px 10px 2px 10px;">1. Pain in legs and hips</td> <td style="text-align: right; padding: 2px 10px 2px 10px;">53.8%</td> </tr> <tr> <td style="padding: 2px 10px 2px 10px;">2. No method of transportation</td> <td style="text-align: right; padding: 2px 10px 2px 10px;">19.9%</td> </tr> <tr> <td style="padding: 2px 10px 2px 10px;">3. Concern about toilets</td> <td style="text-align: right; padding: 2px 10px 2px 10px;">15.8%</td> </tr> <tr> <td style="padding: 2px 10px 2px 10px;">4. Illness</td> <td style="text-align: right; padding: 2px 10px 2px 10px;">12.1%</td> </tr> <tr> <td style="padding: 2px 10px 2px 10px;">5. Nothing to do outside</td> <td style="text-align: right; padding: 2px 10px 2px 10px;">11.1%</td> </tr> <tr> <td style="padding: 2px 10px 2px 10px;">6. Financial reason</td> <td style="text-align: right; padding: 2px 10px 2px 10px;">9.3%</td> </tr> <tr> <td style="padding: 2px 10px 2px 10px;">7. Optical disorders</td> <td style="text-align: right; padding: 2px 10px 2px 10px;">8.9%</td> </tr> </table> <p style="font-size: small; margin-top: 5px;">*Source: 2019 Survey on the actual conditions of life and care for the elderly</p>	1. Pain in legs and hips	53.8%	2. No method of transportation	19.9%	3. Concern about toilets	15.8%	4. Illness	12.1%	5. Nothing to do outside	11.1%	6. Financial reason	9.3%	7. Optical disorders	8.9%
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■Trustee company: Marubeni Ina Mirai Denki Corporation

The company started supplying electricity to public facilities in Ina City in the fiscal year 2019, promoting the introduction and local production of renewable energy for local consumption, as well as engaging in community-based businesses to solve local issues utilizing the business development know-how of the Marubeni Group. Through this project, the company aims to contribute to supporting independence and creating opportunities for outings by the elderly, which have become social issues in Ina City.

■Developer of Power Assist Suit: CYBERDYNE Inc.

The company is a future pioneering company that challenges the realization of "Techno Peer Support" and social and industrial reform by making full use of "Cybernetics Technology" (technology that fuses and combines human, robot, and information systems) that handles "Human" + "Cyber-Physical Space," where people and technology coexist and mutually support each other.

Wearable Cyborg HAL

HAL (Hybrid Assistive Limb) is the world's first technology that connects a person's brain-nerve and muscular systems to enable movement according to the wearer's intention. The technology can turn the wearer into a “cyborg” just by wearing it.

When a person tries to move their body, command signals are sent from the brain to the muscles through nerves, and the muscles move to achieve the movement. During this process, faint "bio-electrical signals" leak from the skin's surface. HAL reads these signals using sensors attached to the skin, and the movement is achieved according to the wearer's intention.

HAL Lumbar Type allows people with difficulty standing up and moving on their own to move their bodies without excessive strain. It is also possible to display various information from the wearer's body on the monitor. Performing voluntary movements synchronized with one's exercise intention repeatedly and without strain is expected to maintain and improve physical functions and increase independence.

There is also a mode that can be used without sensor attachment, allowing the wearer to wear the device easily and quickly for heavy work and other nursing care activities.



Source: CYBERDYNE Inc.

(Note: Received the 21st Century Invention Award at the National Commendation for Invention in 2009: Invention of Cyborg Robot Technology, Patent No. 4178186.)