TANO Specification

Types of Content	PC Model	PC + Robot Model
Upper limb movement (wood splitting, baseball, bowling and others more than 100 types)		●
Lower limb movement (soccer, foot race, log jump and others more than 50 types)		●
Balance (core) movement (window cleaning, goalkeeper and others more than 25 types)		●
Finger exercises (fruit tree, Christmas tree and others more than 9 types)		●
Oral cavity, breathing exercises (voice-controlled target hitting and others more than 30 types)		●
Brain training (fill-in-the-blank-questions, cup game and others more than 30 types)		●
Event (birthday party, quiz, bingo and others more than 30 types)		●
Play movie and pictures		●
Mountain climbing (motion-synchronized video playback function)		●
Synchro (Scoring feature based on skeletal matching)		●
Measurement (Carepit)		●
Measurement (TANO CHECK)		●
Measurement (SPPB)		●
Measurement (FRT, TUG and others more than 30 types)		●

Convenience・Administrative Function	PC Model	PC + Robot Model
ID management		●
Report display, copy, CVS export		●
Timer function		●
Set menu function		●
Bookmark		●
History		●
Language selection (12 countries)		●
Settings (volume, menu, timer, bookmark and others)		●
Content setting (area, number of people, difficulty level and others)		●
Moderator		●
Tutorial		●

Required Equipment	PC Model	PC + Robot Model
Control system (WindowsPC) ●Windows11、10 ●Main memory 8G or more ●HDD 128GB or more	CPU PASSMARK 5000 or more	CPU PASSMARK 15000 or more
Sensor set (KinectV2)		●
QR code reader		●
Others (USB-HUB, HDMI, mouse and others)		●
TANO-BO (robot)		●
Monitor ※1		●
Monitor stand ※1		●

※1 The necessity and size of a monitor or monitor stand vary depending on the installation location

Publication Information

- Equipment supported by development subsidies from the Ministry of Economy, Trade and Industry (communication)
- Handbook of technologies used in elderly care
- Development and dissemination of care robots by the Ministry of Health, Labor and Welfare 2023
- Development and dissemination of care robots by the Ministry of Health, Labor and Welfare 2021

Actual Evidence

- Development and dissemination of care robots by the Ministry of Health, Labor and Welfare 2017,2016 and more.

Approval・Award

- AMED 2023 "Adoption of projects for promoting development of robotic care equipment"
- 2022 Osaka 10-Year Age Reversal Project" Creating a future city that illuminates life"

Approved project

- 6th Plan Products approved for subsidies under the craftmanship, commerce, and service promotion program
- Kawasaki standard 2016 certified product
- Winning Re-Care Award Health Tech Sector
- Products approved for advanced IoT project
- Product approved for Open call Sagami Robot Special Zone

TANO
Motion training tool

Support for multiple languages — MULTILINGUA SYSTEM

The body starts moving naturally

Gamification Technology

Playing contributes to health!

I was enjoying myself, and suddenly realized I was moving my body.

To alleviate the burden of caregiving work

Recreation
Virtual walk experience, Brain workout, Vocalization training, Quizzes and more

Rehabilitation
Fun rehabilitation with exercises, work out and game contents

Measure
Posture measurement, walking tests, and physical fitness assessments

Creating an environment that facilitates easy communication for care staff and users

Robot MC
Tano Robot leads and manages recreational activities

Tutorial
The screen and Tano Robot explain how to operate

Features planned for future implementation
- Automatic difficulty adjustment feature
- Facial recognition login feature
- Booking feature
- Web camera support

FEATURES

1 Playing games moving your body
Simply standing in front of the sensor turns your body into a controller, allowing for enjoyable, contactless, and non-wearable training

2 Can be played by multiple people simultaneously
It can be used by not just one but many people Facilities users can gather together and enjoy it with friends and family, which encourages conversation

3 Choose content easily with set menu options
With over 250 types of content, you can set your Favorites or custom selections and progress automatically

4 Individual reports are also possible with ID management
Users can check how much exercise was done, any Changes in measurement results, And more through screens, printouts, or CSV export

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TANO implementation at facilities

1 To enhance self-efficacy

Verification results graph

Clear changes in self-efficacy were observed in Each participant before and after the pilot experiment

Change 1
Participants were able to enjoy repetitive practice,Which is fundamental to exercise therapy

Change 2
Participants' psychological burden was reduced and their concentration improved, allowing them to sustain exercise for several minutes instead of the usual a few minutes

Total SE score measurements
$p < 0.05$

80
75
70
0
Before   After
○ median   SE = self-efficiency
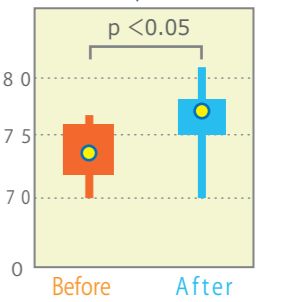
With the combination of enjoyment & reduced burden, participants' exercise duration & motivation significantly improved
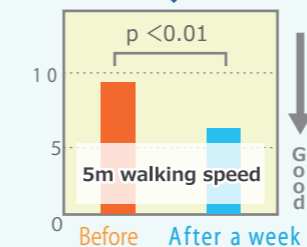
2 To maintain & improve motor & oral functions

In the pilot experiment, participants underwent physical function measurements beforehand, used TANO for exercises and recreational activities about three times a week, and then had the effects on "motor function" and "oral function" evaluated one week later
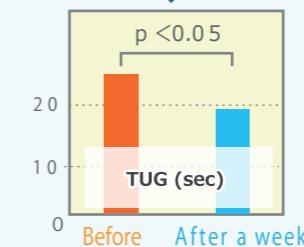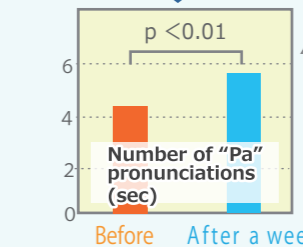
Verification results graph

A health of legs
$p < 0.01$
10
5
5m walking speed
0
Before   After a week
Good
All 9 out of 9 participants showed improvement

Joint flexibility
$p < 0.05$
20
10
TUG (sec)
0
Before   After a week
All 9 out of 9 participants showed improvement

Lip & cheek strength & movement
$p < 0.01$
6
4
2
Number of "Pa" pronunciations (sec)
0
Before   After a week
Good
12 out of 14 participants showed improvement

Tongue strength & movement
$p < 0.05$
6
4
2
Number of "ta" pronunciations (sec)
0
Before   After a week
9 out of 14 participants showed improvement
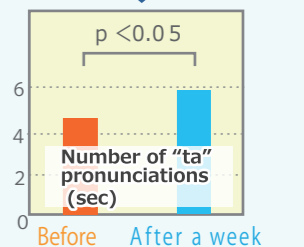
Improvement in legs health, & joint flexibility

Effect in strengthening & improving movement of lip, cheek & tongue

3 The facility manager's comment

To be honest, I felt uneasy until I actually saw our customers engaging in the demonstration   However, after witnessing our customers eagerly and joyfully participating, I felt that TANO and TANO Robot hold the potential for customers to improve their abilities and maintain or enhance their daily living activities through rehabilitation "even without people"
In the field of caregiving, where human resources are limited and shortages are a serious concern, we see committed to contributing through this demonstration project

Demonstration of "The communication robot which creates a real cyber sports environment" in 2023