

PLAYWARE

Bring Happiness to Life



Professor Henrik Hautop Lund
Center for Playware
Technical University of Denmark

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Stop seeing this ad Why this ad?



Jackie Chan's daughter Etta Ng claims she and girlfriend are homeless due to 'homophobic parents'



Doctor accused of molesting, raping patient goes on trial



At just 19, Kylie Jenner Buys Third Home Mansion Global

Recommended by @outbrain

Orange Valley to trial aged-care technology with partners



2 of 2 One of the technologies that Orange Valley is testing out is moto tiles, pressure-sensitive tiles with various lighting options, which can help the elderly with their agility, flexibility and concentration. PHOTOS: LIANHE ZAOBAO

PUBLISHED 10 HOURS AGO



Private nursing home operator Orange Valley Nursing Homes is partnering with companies such as StarHub and ST Engineering to trial aged-care technology to improve staff productivity and service delivery.

Orange Valley is a subsidiary of Invest Healthcare, which was acquired in April last year by

Radisson Royal Hotel



fra 1304 kr 2257 kr 42% trivago.dk



ST VIDEOS

Donald Trump confirms Singapore as possible site for Kim Jong Un summit, but prefers DMZ's Peace...

Donald Trump lauds Southwest Airlines crew for engine failure response

No smokes, many drinks for North's Kim Jong Un at inter-Korea summit

US delays metal tariffs on Canada, EU, Mexico

Disrupting the Industry with Play

HEALTH & ELDERCARE

Moto Tiles Win 'Oscar' of the Eldercare Industry

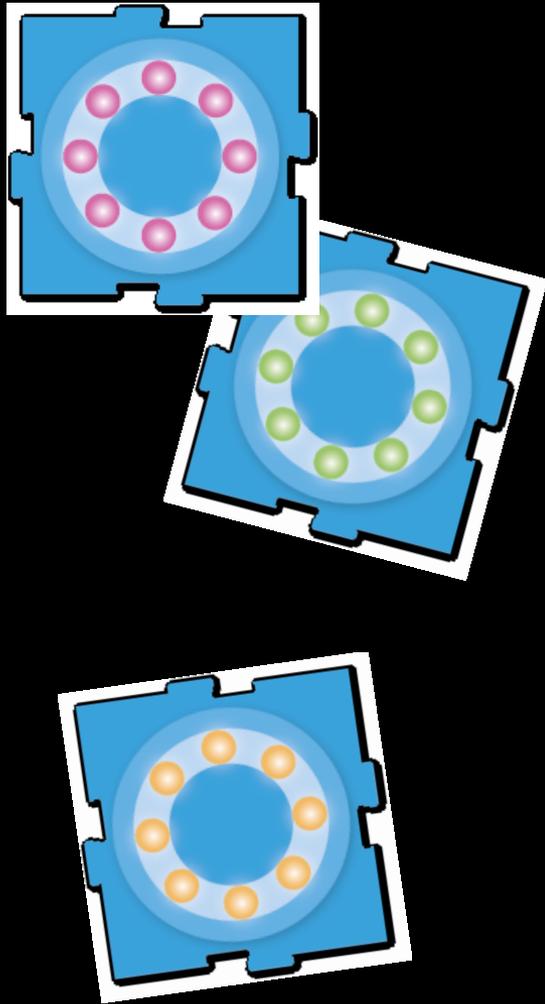


BY: FG Team 18 May 2018



images: ENTERTAINMENT ROBOTICS, AGEING ASIA

Professor Henrik Hautop Lund from the Technical University of Denmark won Product Innovation of the year for the Moto Tiles for eldercare.



PLAYWARE ABC

A: Anybody, Anywhere, Anytime

B: Building Bodies and Brains

C: Construct, Combine, and Create

The background of the image consists of several blue interlocking floor tiles. Each tile has a circular pattern in the center. Some tiles have a white center with a blue ring, while others have a blue center with a white ring. One tile in the upper right has a pink ring. The tiles are arranged in a staggered pattern on a light gray surface.

m:to

*bring
happiness
to life*

IDEA & VISION

"bring happiness to life"

1

Mediates
playful social
interaction

2

Brings
happiness and
quality to life

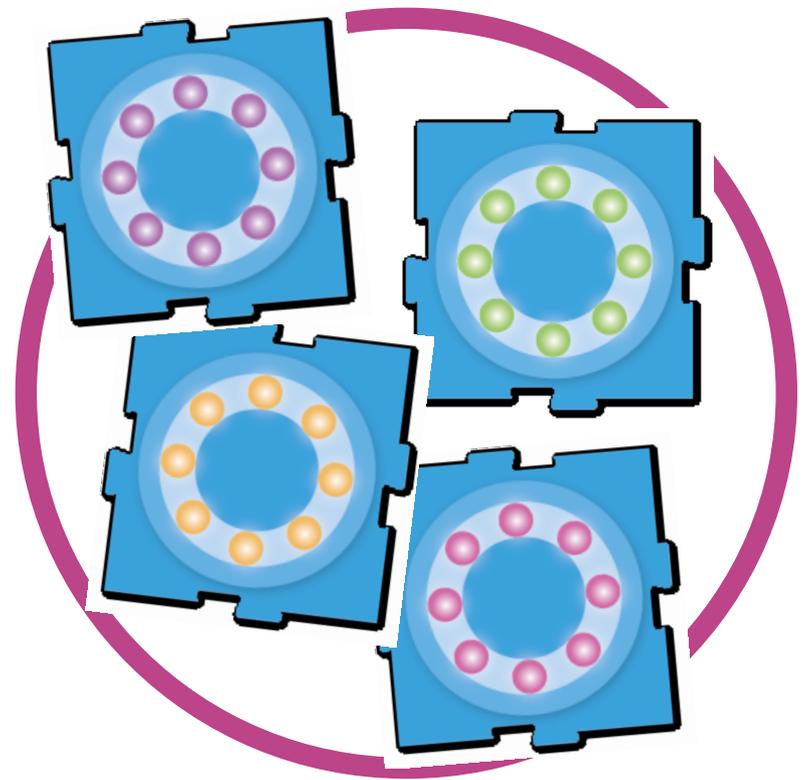
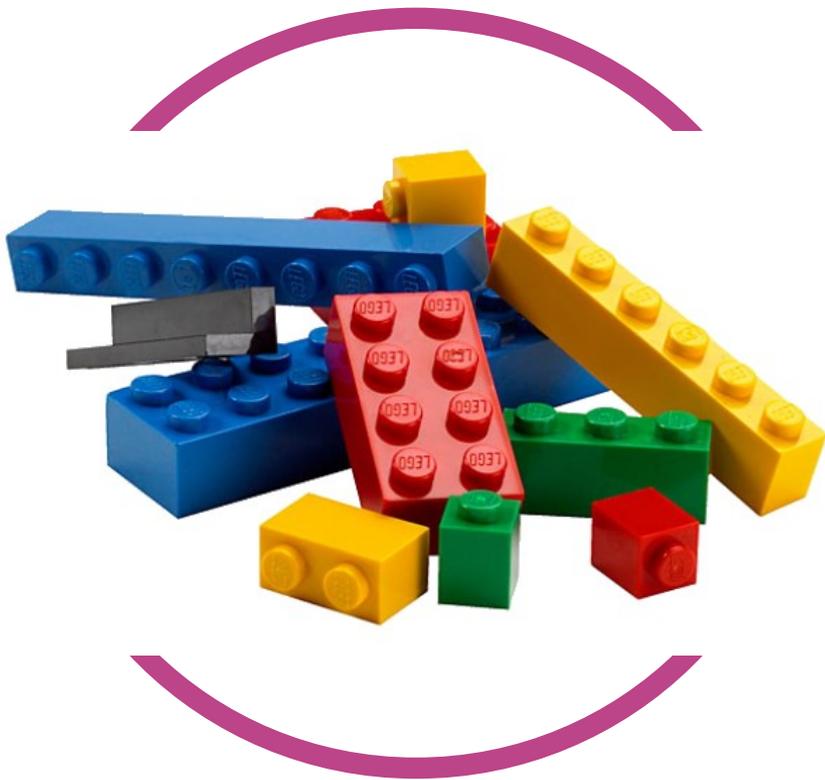
3

Allow people
to regain,
retain and
increase their
skills

Contrary to assistive robots

IDEA & VISION

"The LEGO brick for playful physical training"



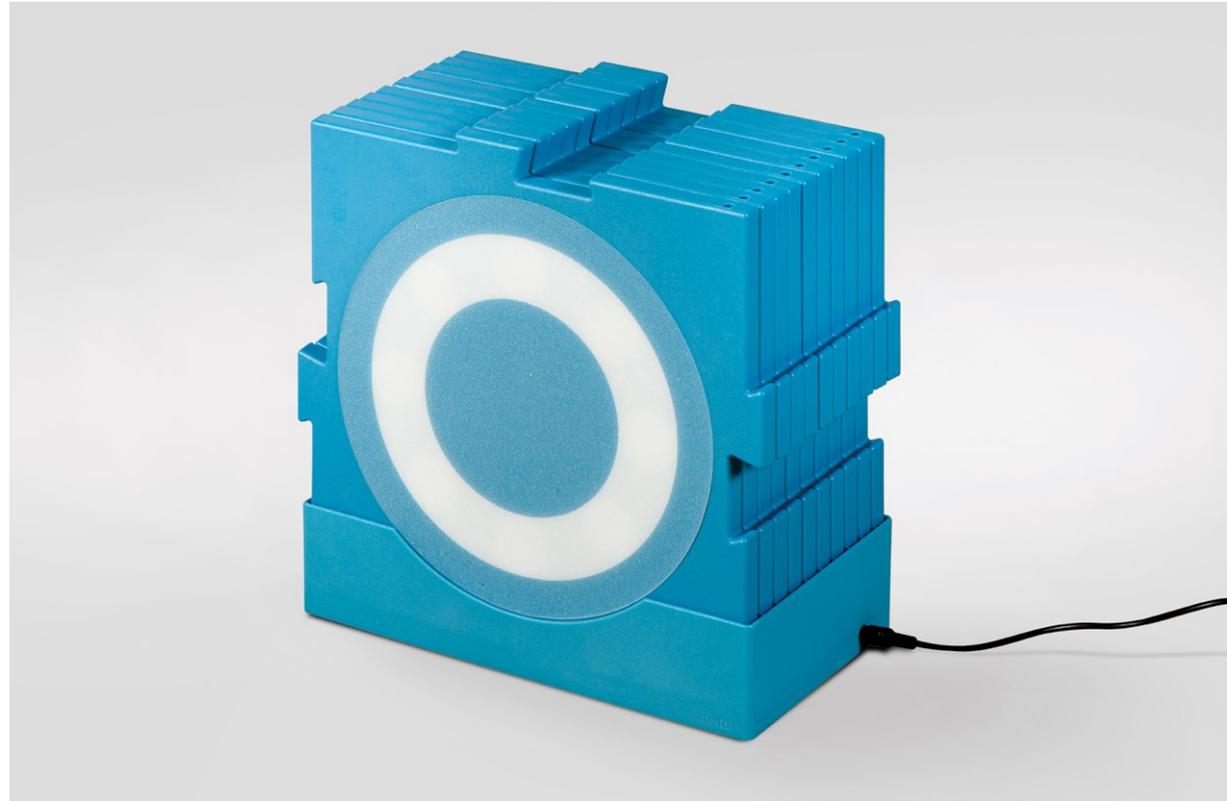


Film: www.moto-tiles.com/eldercare.php?l=enf

DESIGN

“**Simplicity** is
the ultimate
sophistication”

Leonardo da Vinci



m::to tiles
bring happiness to life

An aerial photograph of New York City at sunset. The Empire State Building is the central focus, rising vertically from the dense urban landscape. The sky is filled with dramatic, golden and purple clouds, suggesting a late afternoon or early evening setting. The city's buildings are silhouetted against the bright sky, creating a high-contrast scene.

**YOU THINK BIG,
YOU GET BIG.**

THINKGROWRICH



YOU CAN BE BIG,
YOU CAN GROW.

SMALL IS SMART

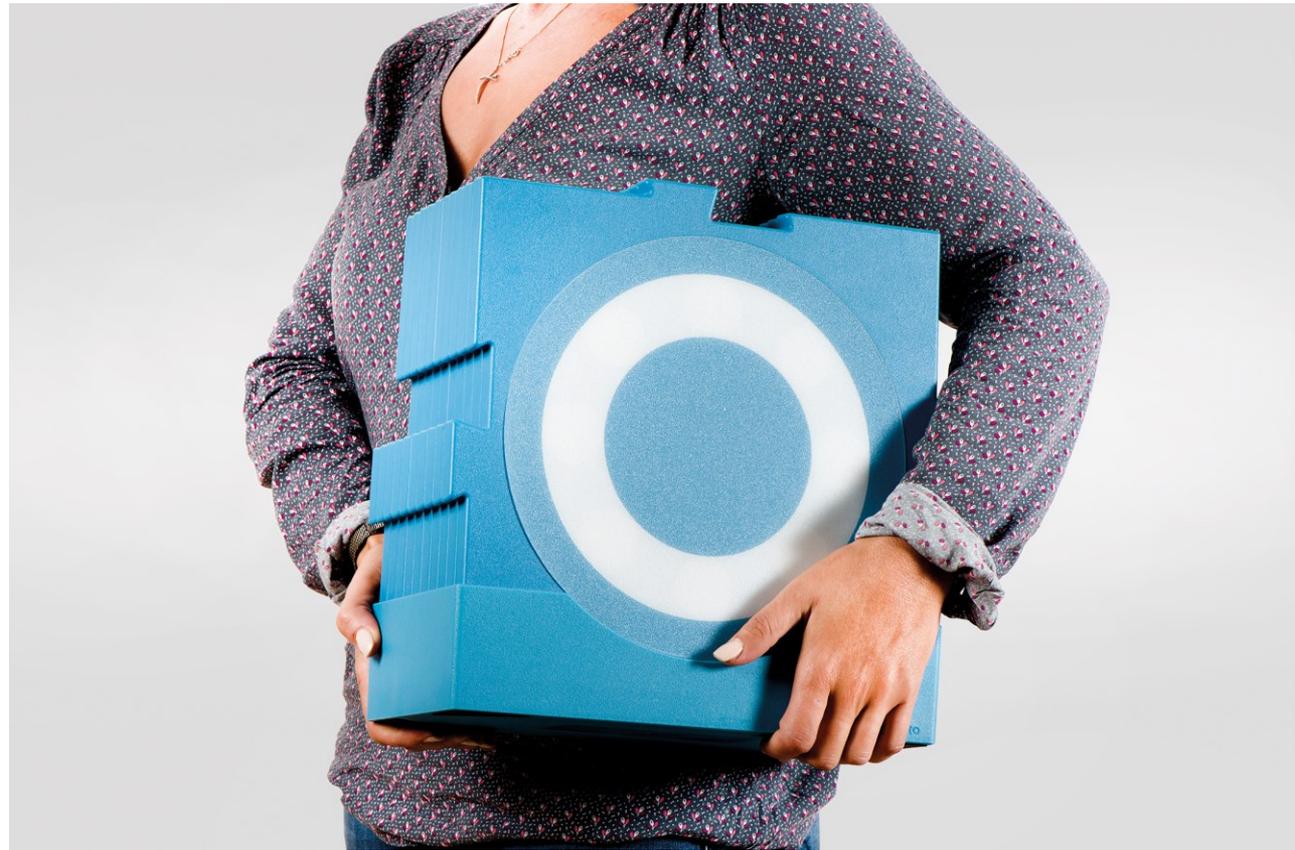
Easy to transport
and set up



Set-up in less than 1 minute

SMALL IS SMART

Easy to transport
and set up



Set-up in less than 1 minute

m::to tiles

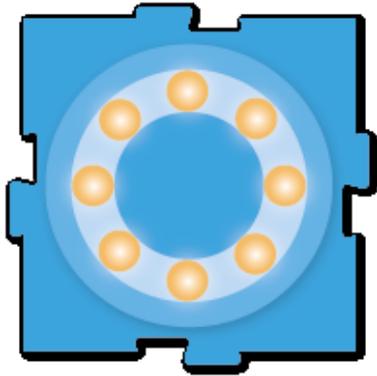
bring happiness to life



Blinded Randomized Controlled Trial

- Subjects:** 60 community-dwelling elderly (avg. 83 years old).
30 intervention group & 30 control group
- Method:** 12 weeks group training sessions with Moto tiles
Follow all CONSORT protocol guidelines for clinical trials
- Training:** 13 min. twice per week. Total: 4h
- Context:** Two elderly activity centers
- Tests:** Pre- and posttest with Senior Fitness Test
Questionnaire – Lickert scale
Performed by third party, blinded
Statistical analyses, performed by third party, blinded
- Results:** **14.9% performance increase on balancing test (LW) $p < 0.01$**
22% performance increase on leg strength test (CS) $p < 0.01$
- Very high adherence and acceptance**

Trial registration: ClinicalTrials.gov: Nr. NCT02496702, Initial Release date 7/7–2015.



Effect (rehab center study):

After 6 weeks play on Moto tiles (twice per week):

- increased skills in balancing and mobility
- increased leg strength by 100%
- increased height by 1-2cm

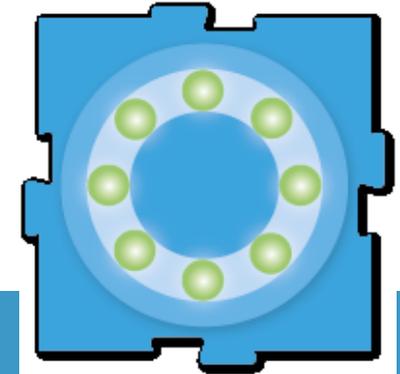
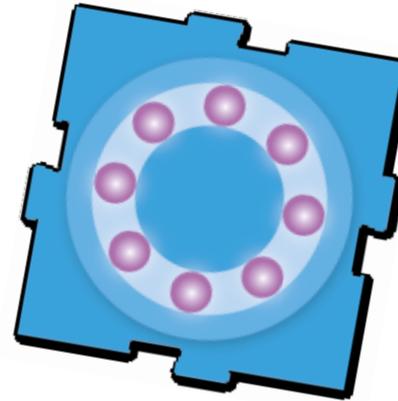
Frail elderly:

6 weeks play on Moto tiles (twice per week):

- Moto tile in parallel walking bar
- Average 10 times of 6 minutes on tiles, i.e. 1hour
- Increase performance in balancing test by 80%
- **Don't use walking aids (rollator) anymore**

After merely 1 hour play on Moto tiles

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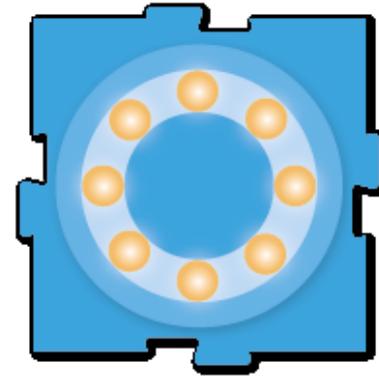


Moto tiles play is effective

For Balancing, Strength, Mobility, Endurance, etc.

*Games for Health Journal, 3:5, June 2014:
online.liebertpub.com/toc/g4h/3/5
BMC Geriatrics journal, 2017*

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**33 million older adults
in Japan (26%)**



NeU spin-off
company from
Hitachi HiTech



Body & Brain training



MOTO TILES & HOT-1000

Blue: less brain activity

Red: more brain activity

Film: www.youtube.com/watch?v=aALNCIZyhHk

Award: Hitachi Brain Science Mark

Brain Training game for older adults

Tests: 22 older adults (62-80 years of age)

1. Brain activity in part of prefrontal cortex
2. Pre- and posttest: standard cognitive tests
spatial cognitive capability test (spatial working memory task),
& decision making capability test (color word matching task)

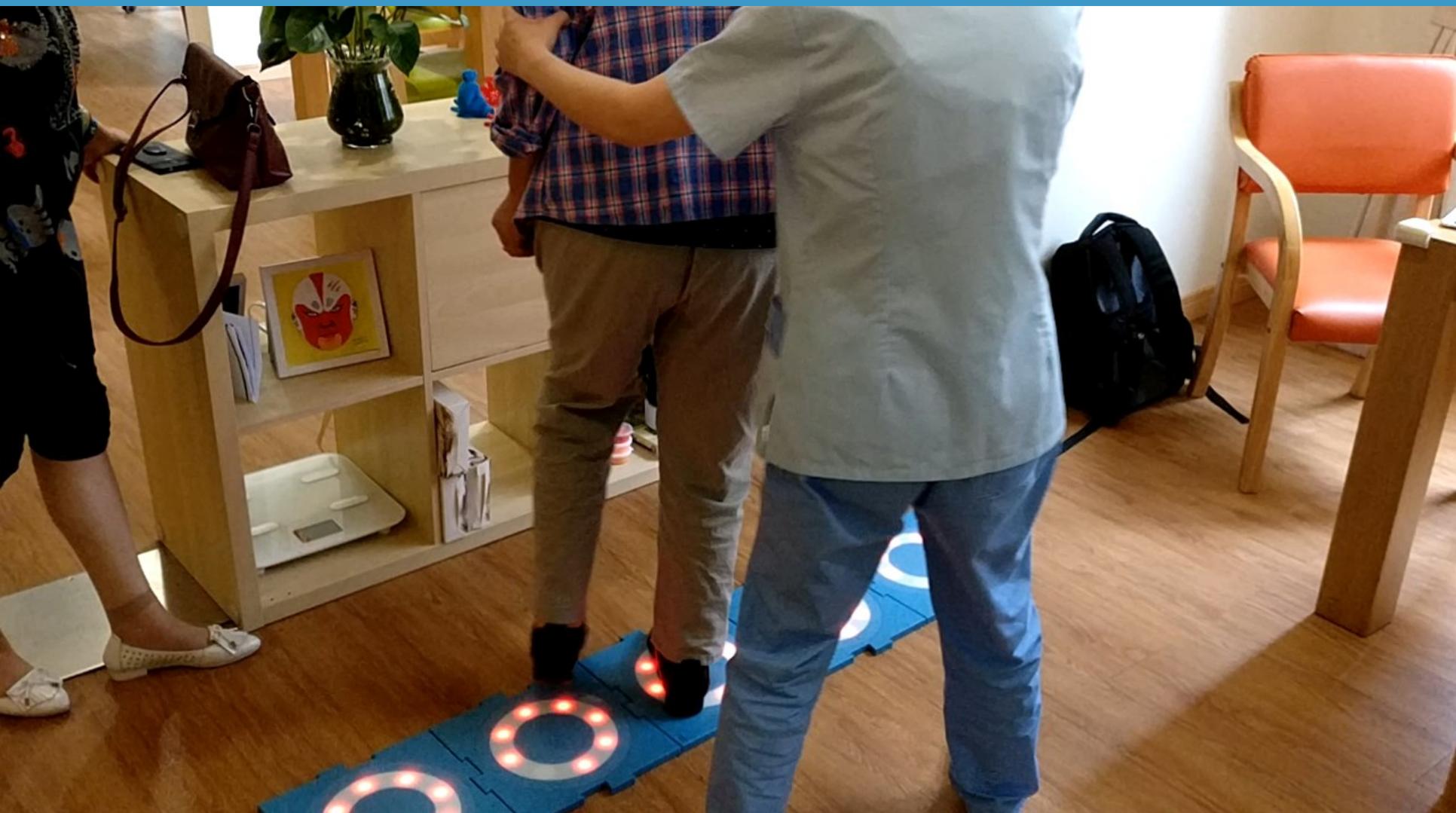
Improvements:

Higher Moto tiles game score: higher brain activity

Significant improvement in cognitive test scores



Shanghai i-Zhaohu



Randomized Controlled Trial

Subjects: 19 seniors (avg. 81.7 years old).
10 intervention group & 9 control group

Method: 2 weeks training sessions with Moto tiles
control group play board games

Training: 30 min. five times per week. Total: 5h

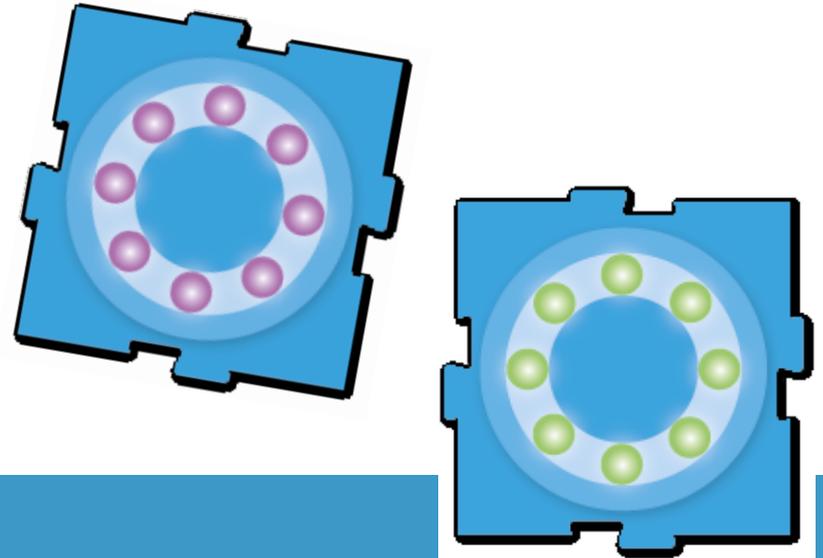
Context: Two senior care homes, Shanghai i-Zhaohu

Tests: Pre- and posttest with cognitive tests:
Visual Search, n-back, Choice-reaction,
Match-to-sample

Statistics: Mann-Whitney u-test, ANCOVA

Results: **Reaction time improvement:**
Visual Search feature: 39% (p<0.05)
Visual Search conjunction: 31% (p<0.05)

Accuracy improvement:
n-back: 25% (p<0.05)

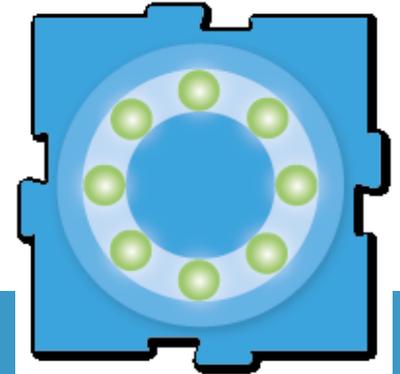
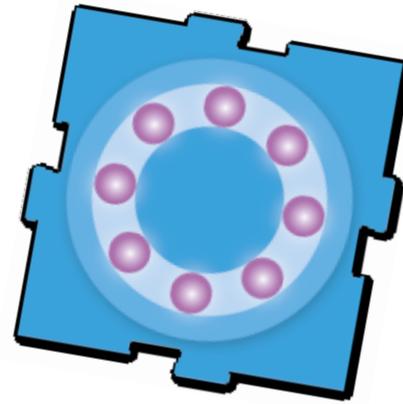


Traditional training
Systematic reviews: High dose needed

Physical: >50 hours (Sherrington et al., 2008)

Cognitive: >52 hours (Gomes-Osman et al., 2018)

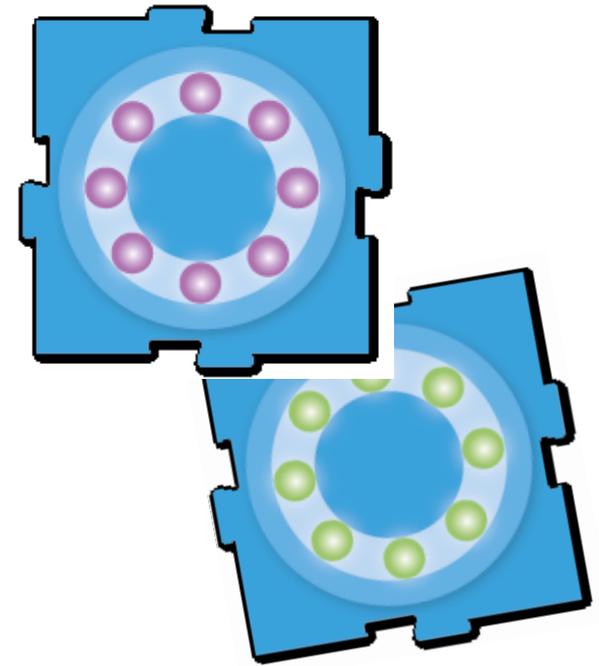
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Moto tiles play has rapid effect on

Body
&
Brain

within a few hours



**Analysis of Moto scores &
standard health test scores**

to provide

Early detection & Recommendation

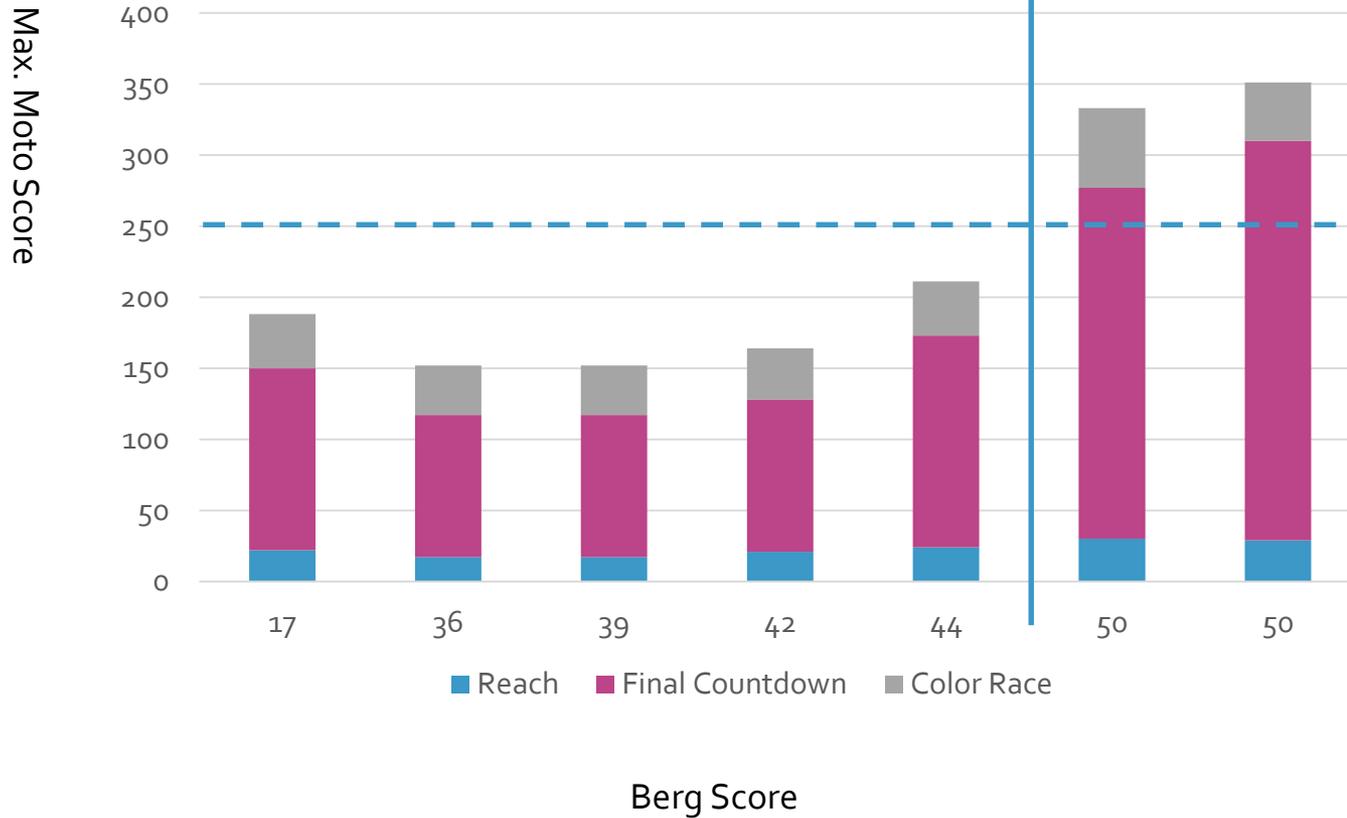
BERG BALANCE TEST

Cut off points:

45 – medium risk of falling

40 – multiple fall risk, assistive need

Berg Score vs Moto Score



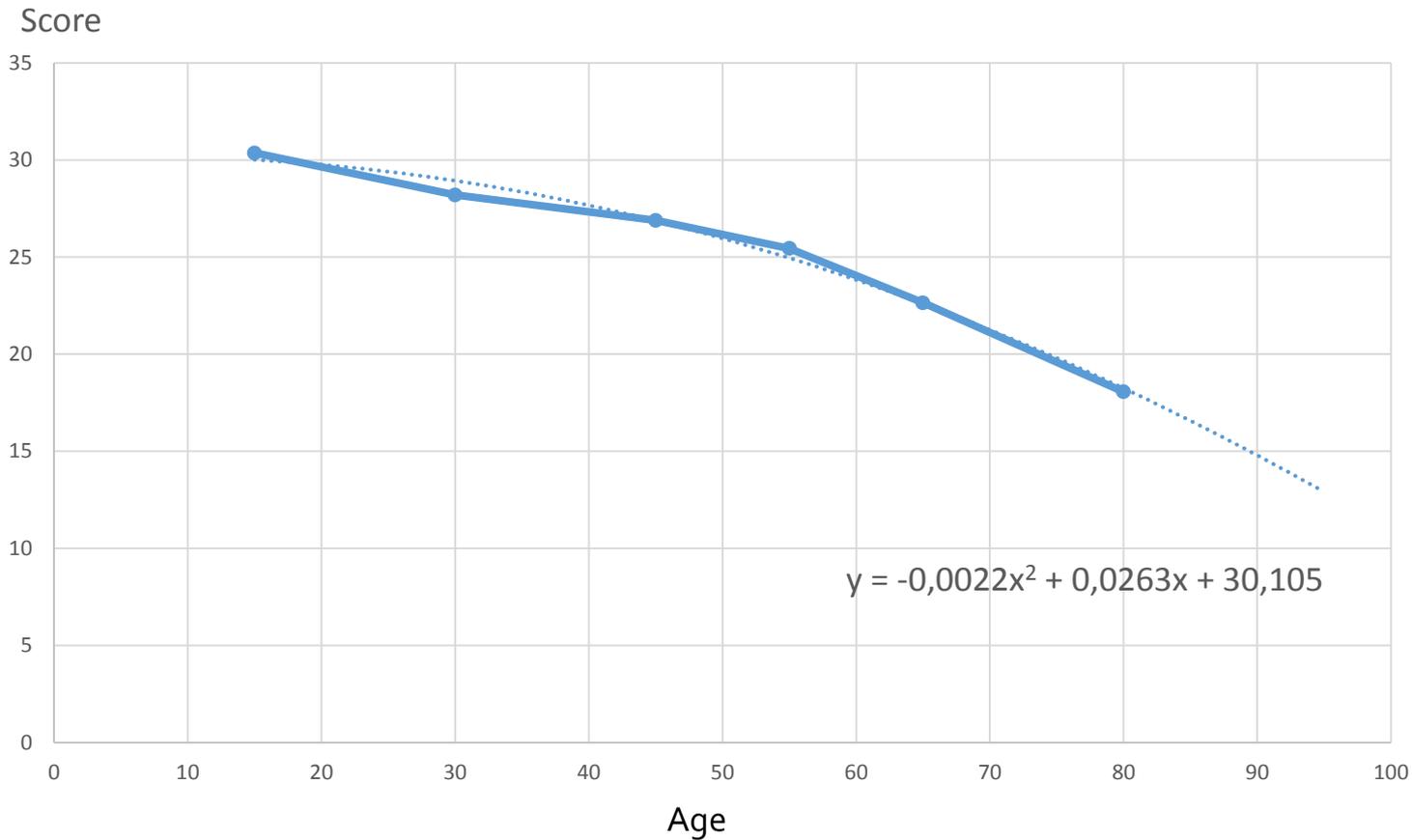
BIG DATA ANALYSIS

- Age & Moto game score
- Nominal score for your age

| Game Score | Score | Steps | | | | | | Subtotal by steps |
|--------------------|-----------------|-----------|-----------|------------|------------|----------------|------------|----------------------|
| | 33~ | 1 | 4 | 1 | 5 | | | 11 |
| 29~32 | 5 | 24 | 23 | 17 | 4 | | 73 | |
| 26~28 | 1 | 10 | 23 | 29 | 23 | 1 | 87 | |
| 20~25 | | 9 | 21 | 49 | 59 | 20 | 158 | |
| 15~19 | | 1 | 1 | 3 | 15 | 49 | 69 | |
| ~14 | | | | | 4 | 9 | 13 | |
| Subtotal by Age | 7 | 48 | 69 | 103 | 105 | 79 | 411 | |
| | Under 20 age | 20-39 age | 40~49age | 50~59age | 60~69age | Above 70age | | |
| | Age | | | | | | | |

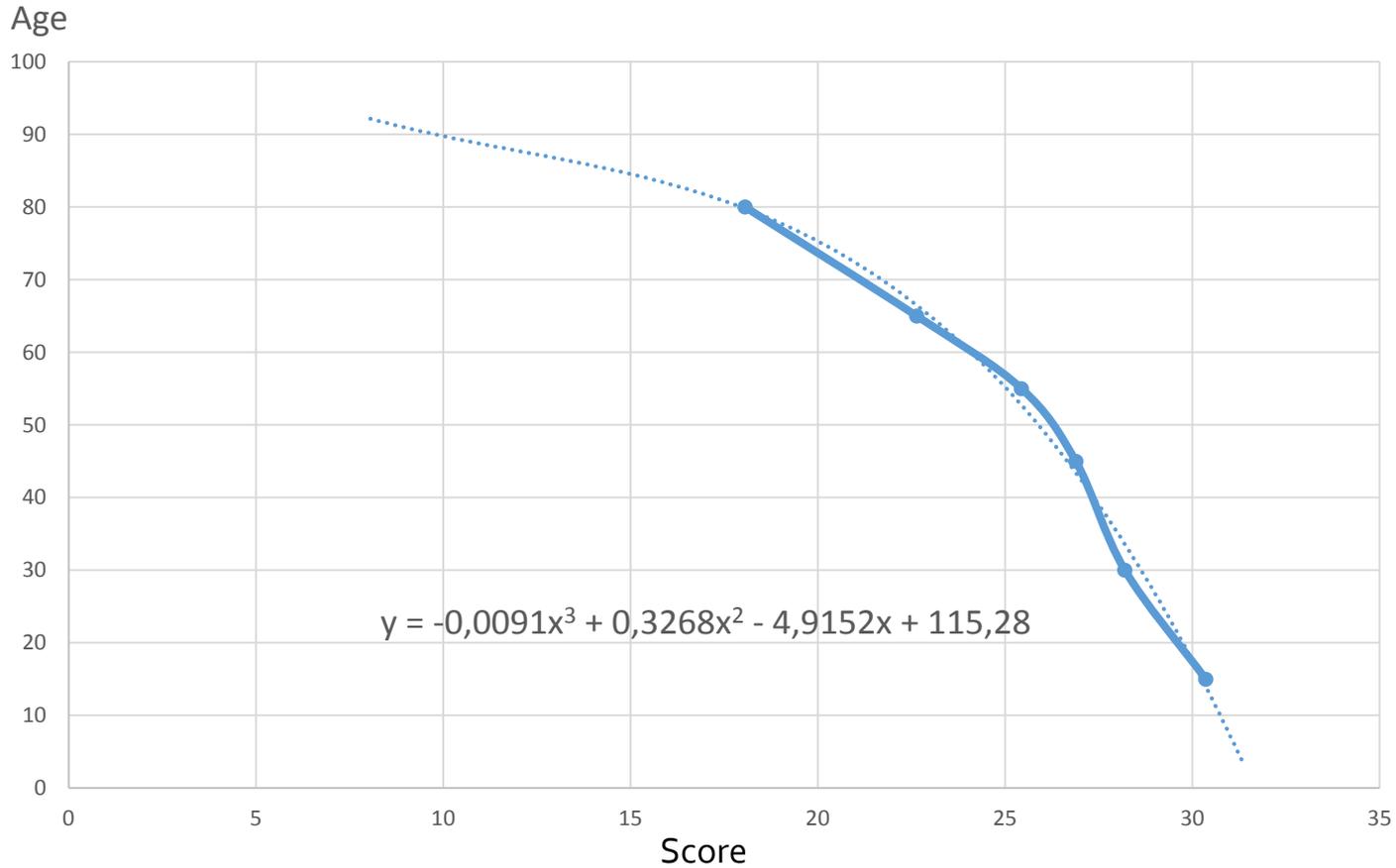
BIG DATA ANALYSIS

- Age & Moto game score
- Nominal score for your age



BIG DATA ANALYSIS

- Age & Moto game score
- Nominal score for your age





2-minutes Moto test

Body-Brain test



Performance Analysis



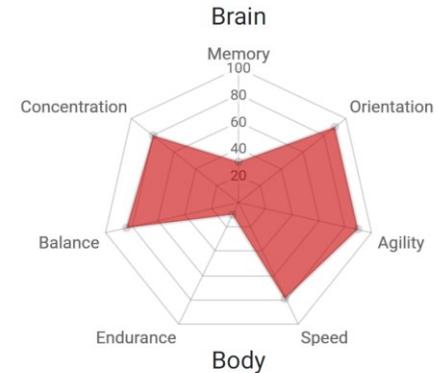
Risk Analysis



Recommendation (training protocol)

e.g. for early-risk detection
dementia, fall risk, etc.

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Risk Analysis

You general physical health may be improved.

You may benefit from brain training for long-term dementia prevention.

Recommendation Based On You Brain And Body Analysis

Moto Tiles play is shown with clinical effect studies to improve body and brain skills. In your case, with Moto Tiles training, you can significantly increase:

ENDURANCE by playing Final Countdown (6 min), Stepping (2min), and ColorRace (2 min) three times per week for 8 weeks = merely 4 hours training!

MEMORY by playing Special One (4 min), Remember (2min), Concentration Color (2min) and Simon Says (2min) three times per week for 8 weeks = merely 4 hours training!

www.moto-tiles.com

AUTO PROTOCOL

- Automatic from Body & Brain test
- Automatic personalised protocol

The screenshot shows a software interface for an 'AUTO PROTOCOL'. The interface is divided into several sections:

- Left Panel:** A vertical list of protocol items, each with a plus icon and a text label: Speed_4-11-18, Agility_4-11-18, Balance_4-11-18 (highlighted in white), Memory_4-11-18, Concentration_4-11-18, and Orientation_4-11-18.
- Games Section:** A list of game types with their respective player and time settings:
 - Color Race: 1 Player 1 min, Player 1 Default
 - Color Race: 1 Player 1 min, Player 1 Default
 - Special One: 1 Player 1 min, Player 1 Default
 - Special One: 1 Player 1 min, Player 1 Default
 - Reach: 1 min, Player 1 Default
 - Reach: 1 min, Player 1 Default
 - Final Countdown: 1 Player 1 min
- Group Section:** Displays 'Player 1' with a 'change' button below it.
- Games sessions:** Shows the number '7'.
- Play Section:** A large play button icon (a triangle inside a circle) is centered in this section.

At the bottom of the interface is a navigation bar with the following elements from left to right: a play button icon, the text 'Play', a user icon, the text 'Users', an auto icon, the text 'Auto', a statistics icon, the text 'Statistics', a store icon, the text 'Store', the text '0 tiles found', a settings gear icon, and a help question mark icon.



Anybody, Anywhere, Anytime: Home rehab service for all seniors

90 years old lady, Denmark





Anybody, Anywhere, Anytime: Home rehab service for all seniors

95 years old lady, Finland

www.youtube.com/watch?v=ms-GGRBOnN4



Yes of course, I accept yours, but not my own, that last one....

Used in elderly care facilities, senior activity centers, rehab centers, hospitals, fitness centers, sports clubs, schools, etc.



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Social Play

www.youtube.com/watch?v=eHpcawrDPCo



No Cultural Barriers – No Age Barriers Cross-generational play



No Cultural Barriers – No Age Barriers Cross-generational play





Older ladies – refugees from Syria, Afghanistan, Iraq

Post-traumatic stress disorder (PTSD)

- Best product to get moving
- Free will, fun, enjoyment
- Open up for social interaction





73-year-old Inger Boel, after a blood clot in the brain [stroke], has regained her stability through a rehabilitation course with dance tiles / Moto Tiles.

Dance tiles / Moto Tiles is an interactive training tool. There are tiles that light up in different colors. Different exercises / games can be done on them and can be graded by level.

Inger has been very motivated and targeted throughout the process, as her greatest wish was to be able to travel to visit her son who lives in Thailand. And on April 30, 2018, it succeeded!

When the staff asked Inger, if there were anyone who should be travelling with her, the answer was: "NO, why should there, now that I can do that myself?"

Inger still uses her walker, which is a good support when she gets tired. But she has moved tremendously, and about the progress, Inger says:

"It is liberating and I feel I have greater freedom. I can go to the bakery and grocery store whenever it suits me - I'm independent of others! "





More info:
www.mototiles.com
Thank You!

m::to

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