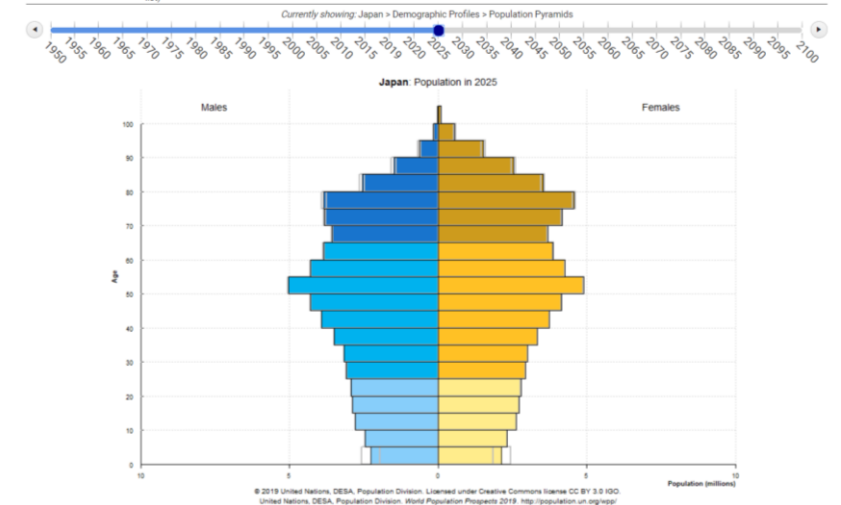


Medium-variant data is shown as coloured bars, and uncertainty is shown in gray for 95 per cent prediction intervals.



Medium-variant data is shown as coloured bars, and uncertainty is shown in gray for 95 per cent prediction intervals.

Healthcare impact on leading industrial nations

Takao Futagami

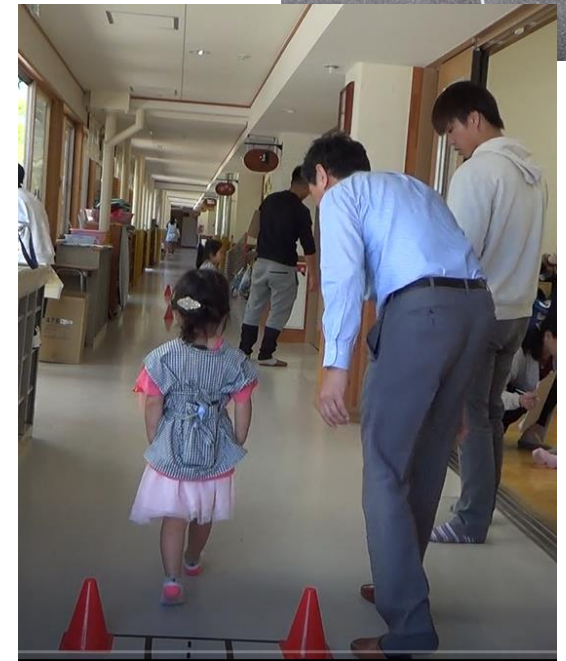
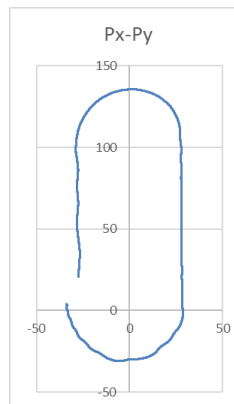
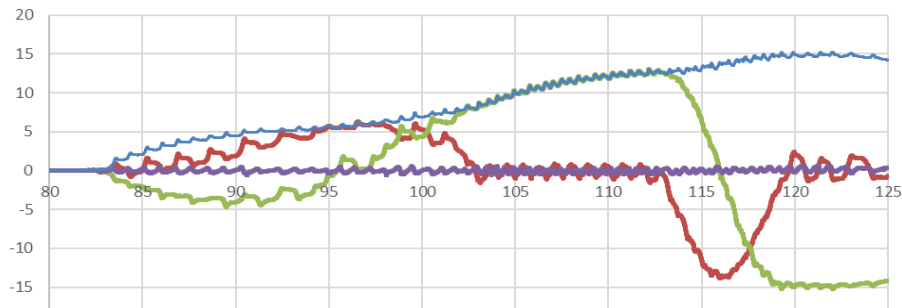
Toyo corporation / Shinshu university

Who I am and what we are doing

- Takao Futagami
 - R&D fellow of Toyo corp to do something good for Japan after Olympic support
 - Guest professor of Shinshu university as software modeling person



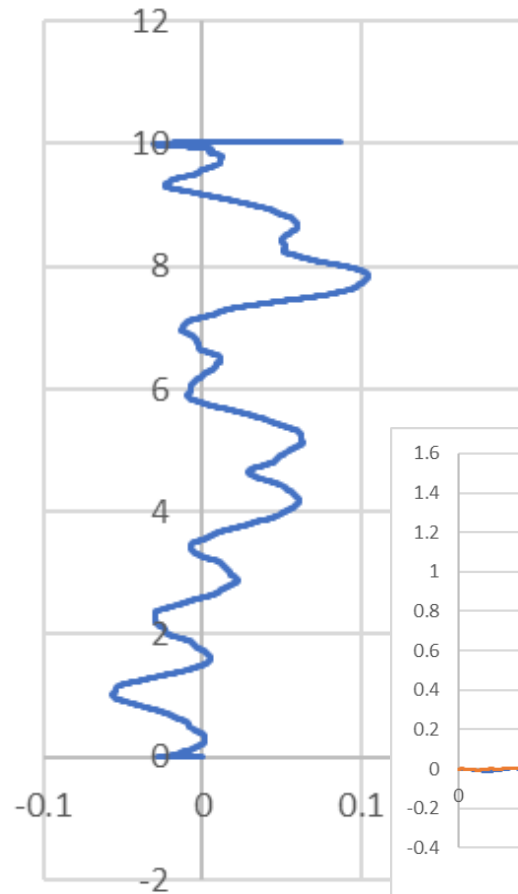
250m top speed acceleration



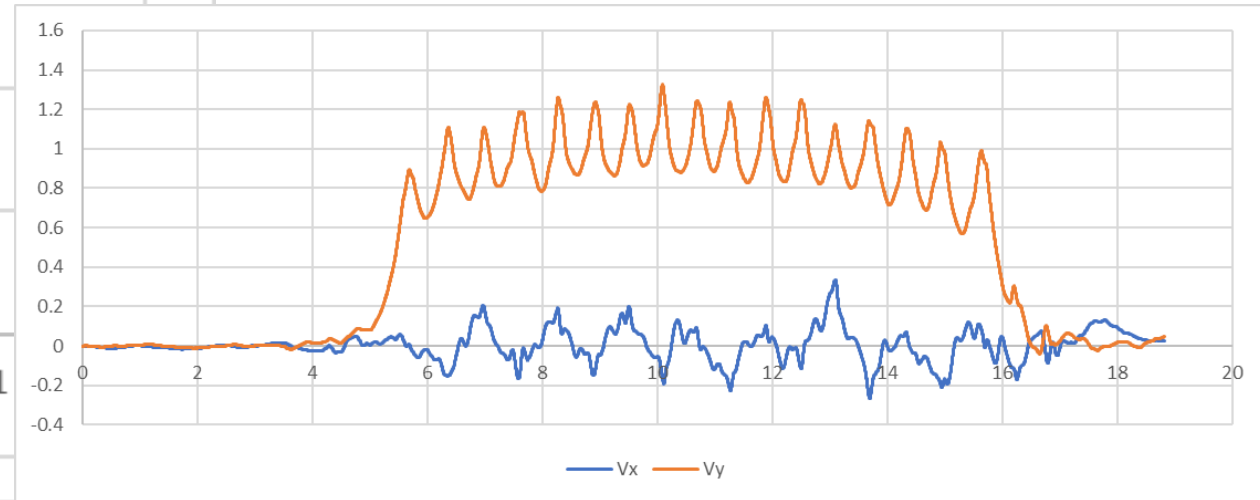
Serious study of cognitive impairment



Natural walk Px-Py



Non Invasive Luminescent Blood Flow
Eye focusing map
Inertial Gait Analysis



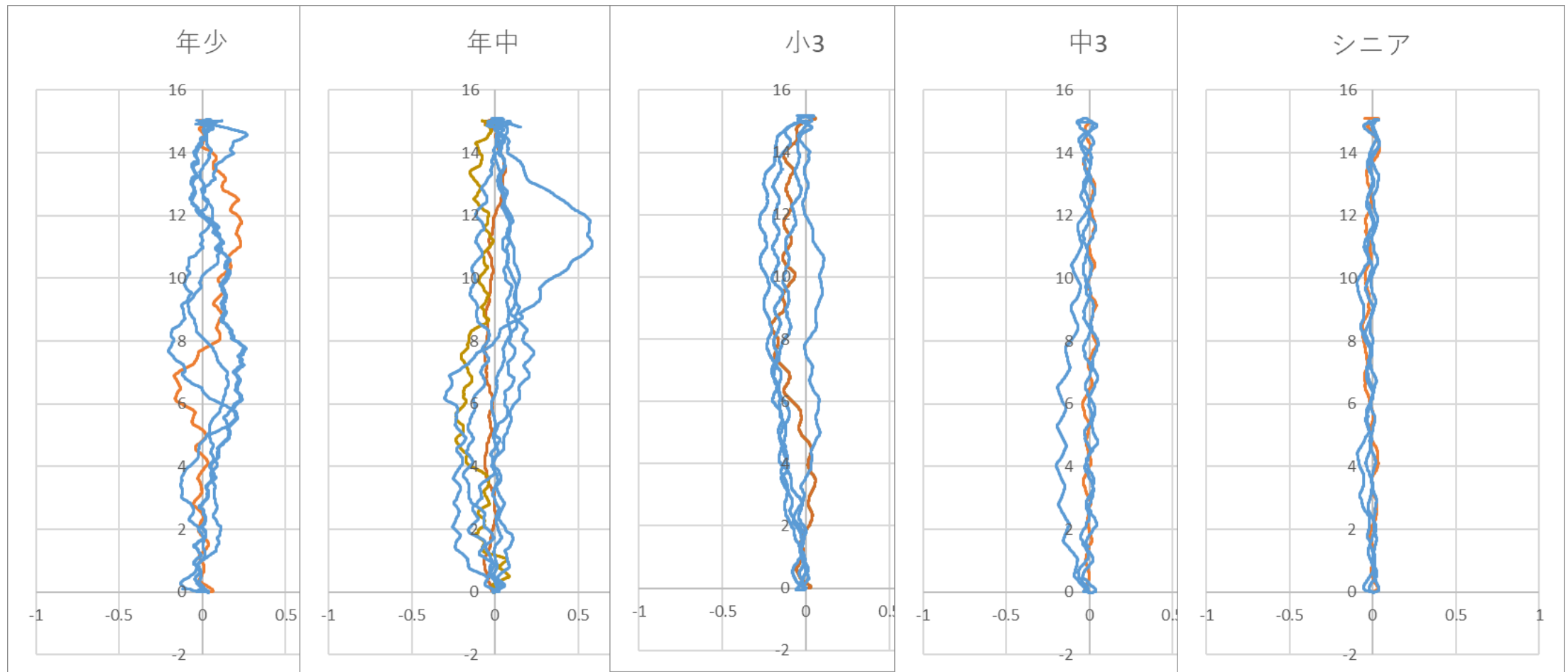
Generation dependency of natural walking path

Kindergarten

Primary School

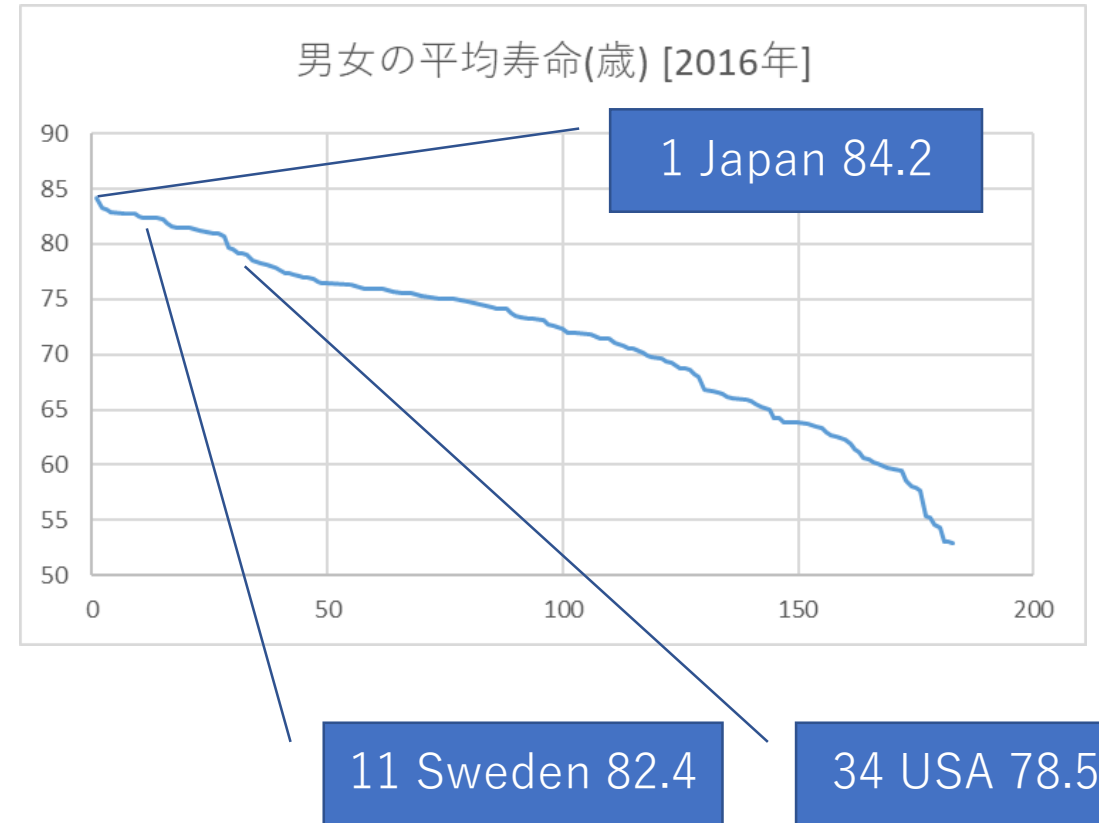
Joiner High

Healthy Adult



Japan as leading country in the world

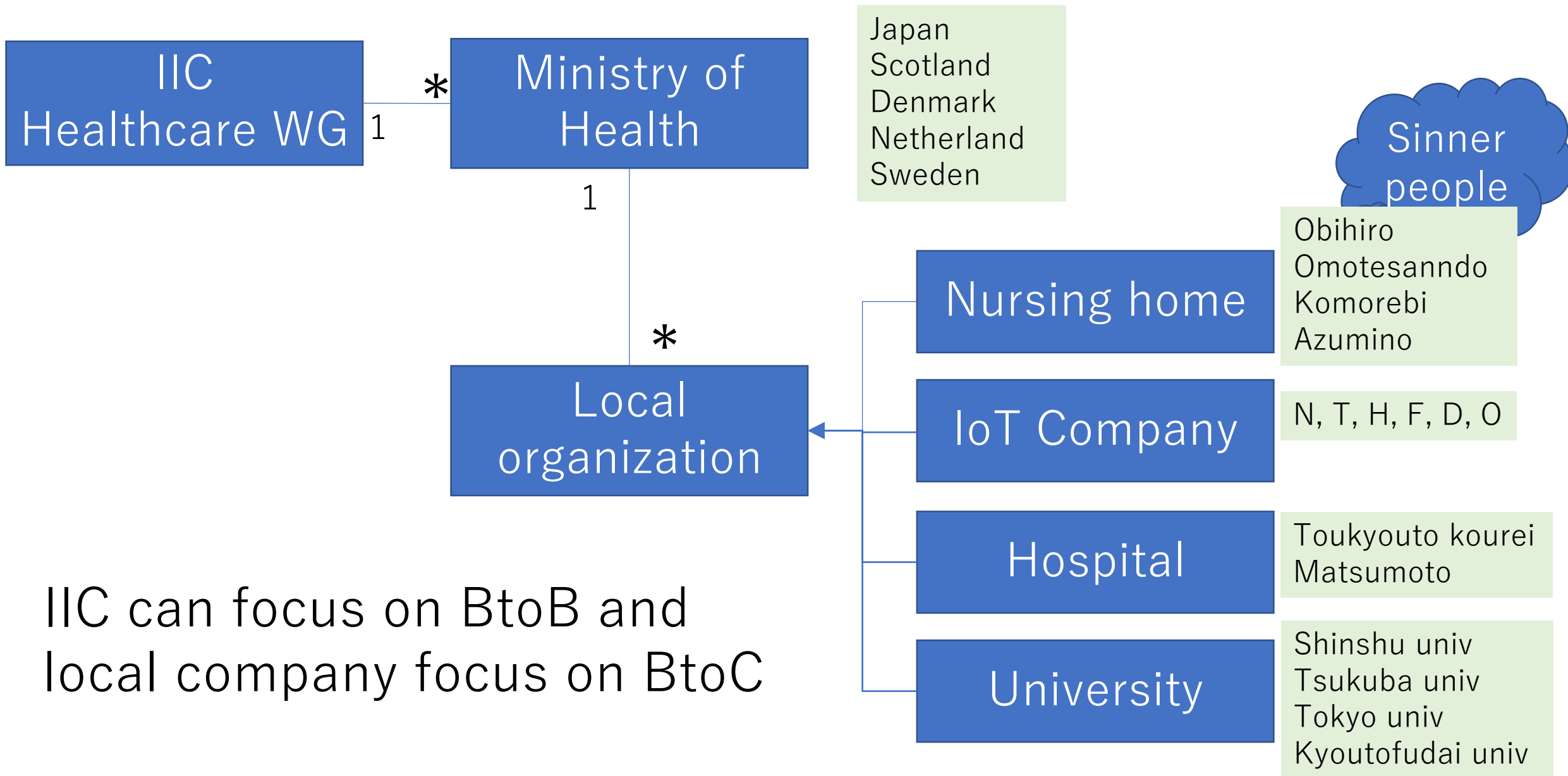
- Japan is the most leading country as Longevity view.
 - About 35M is older than 65(28% of population, 0.6% growth rate)
- Overwhelming fact
 - Cognitive impairment (include mild one) 8.6M people
 - High blood pressure 12.5M people



What we are pursuing

- Cognitive impairment prediction
- Healthy lifetime extension
- Well known key for Cognitive Impairment prevention
 - Exercise Maintain body and brain
 - Food Prevent sarcopenia, vascular problems
 - Communication Increase cerebral blood flow
- Medical prediction is too late, difficult, expensive, complex
 - Hippocampus shrink, Stroke identification by MRI, computation
 - Muscular test for Sarcopenia by isotope method
- Much easier way must be prepared
 - COMMUNICATION FB, twitter, ... all good if people use them
 - FOOD control is still tough as IT automation target
 - EXERCISE Inertial Gait Analysis, vital record, walk log...

Query path to ask collaboration



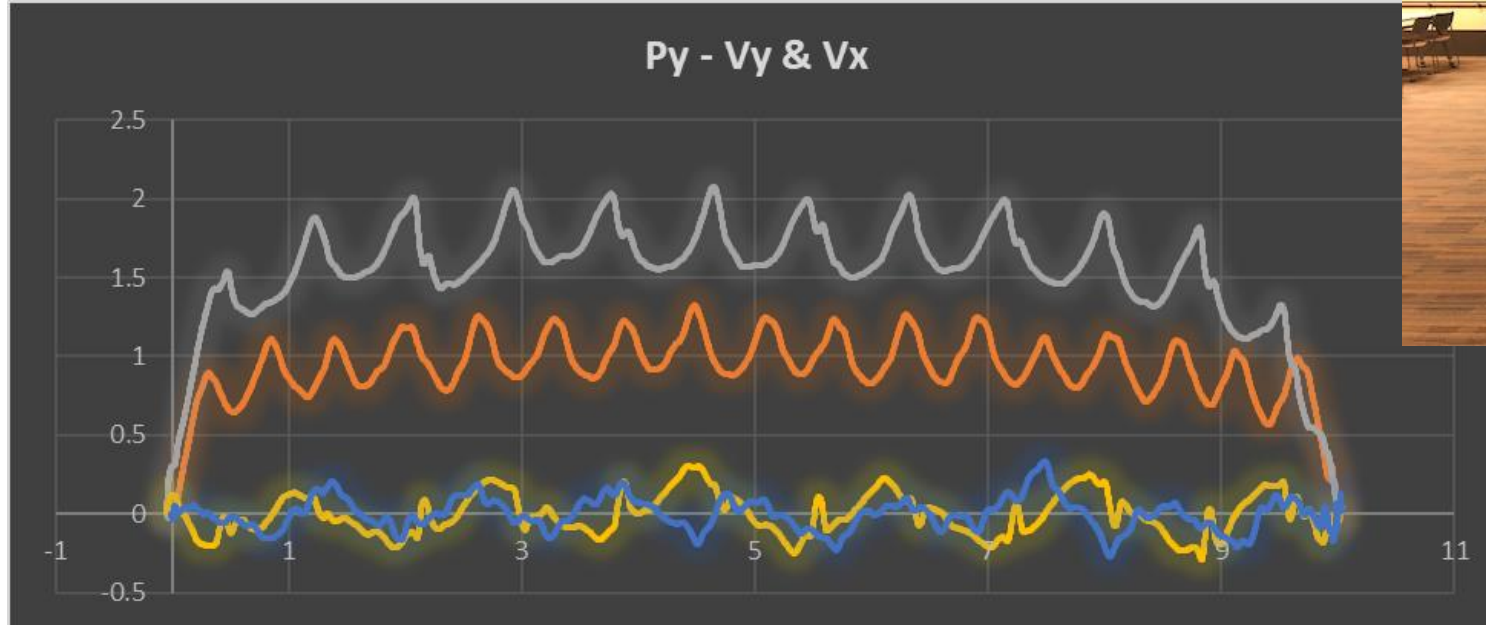
IIC can focus on BtoB and local company focus on BtoC

Testbed

Up until NOWADAYS, those are everything at clinical site

Average Speed of Natural walking

Average Speed of Brisk walking



Testbed candidate facility
In Karuizawa healthcare center

As IIC activity:

- Inertial Gait Analysis for healthcare
 - Long history but not widely used until recently
 - Key information is well accepted
 - IoT can contribute in worldwide implementation
 - Sensor, Network, Data processing, Prediction Support
- Information construct: At least 10,000 registration in IGA depo.
- Facility construct: view, cushion, slip, airflow, lite
- Equipment criteria: Weight, Functionality, Data Format, Accuracy

Takao Futagami

IIC Japan technical member

Toyo corporation Test & measurement system R&D fellow

Shinshu university Engineering div. Guest professor

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