



11E- "Happy & Healthy"

Thursday, June 27, 2019

Time: 15.30-16.30

# Bicycle Usage Incentives

## to Motivate People for Health Promotion in Japan

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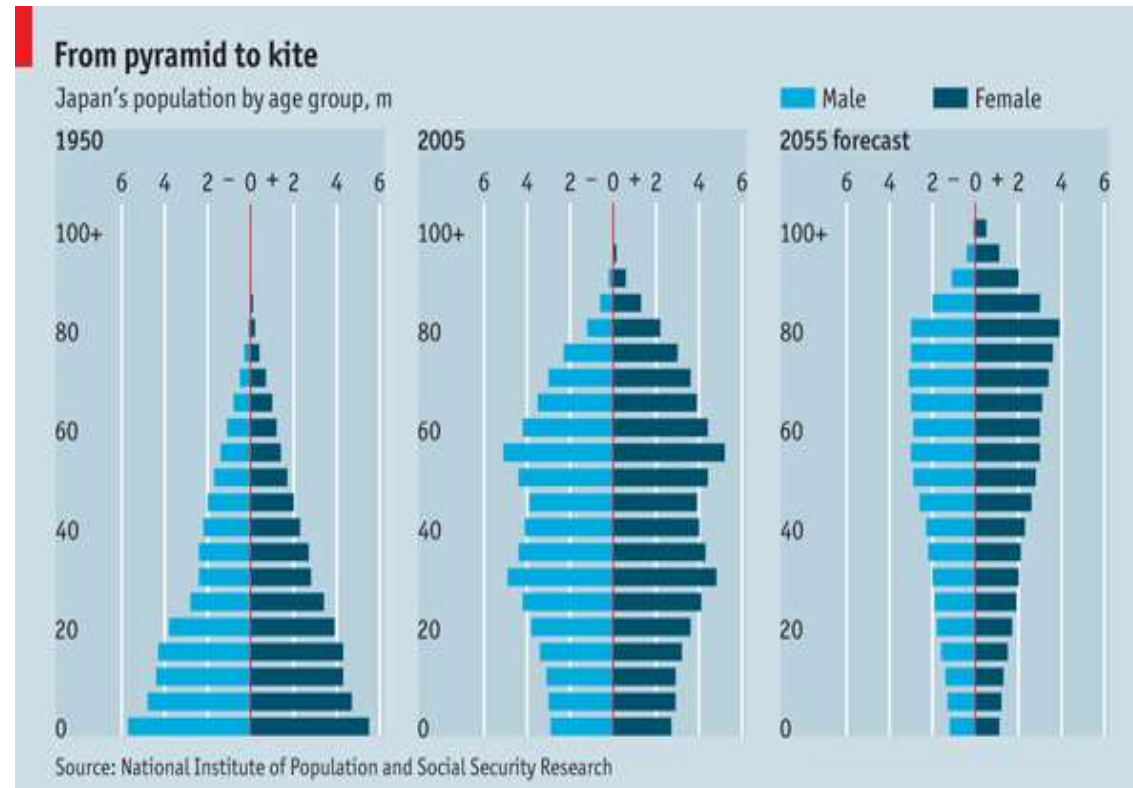
Kokusai Kogyo Co. Ltd.

Teppey Osada

Utsunomiya University

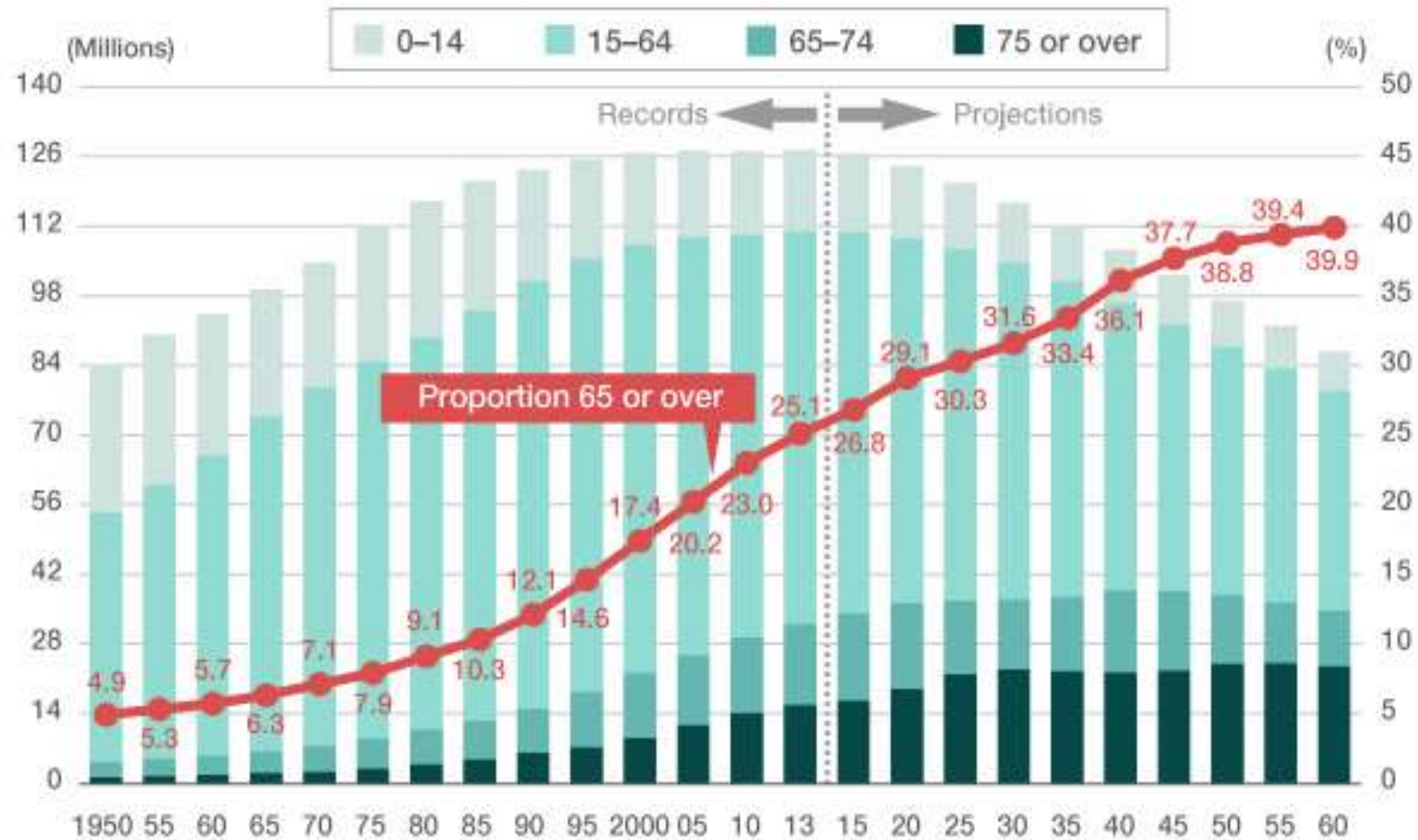
# The Japan Syndrome

## The Shrinking Society with aging population



Source: The Economist, Nov 18<sup>th</sup>, 2010

# Elderly Population Share in Japan



Source: <http://www.nippon.com/en/features/h00079/>

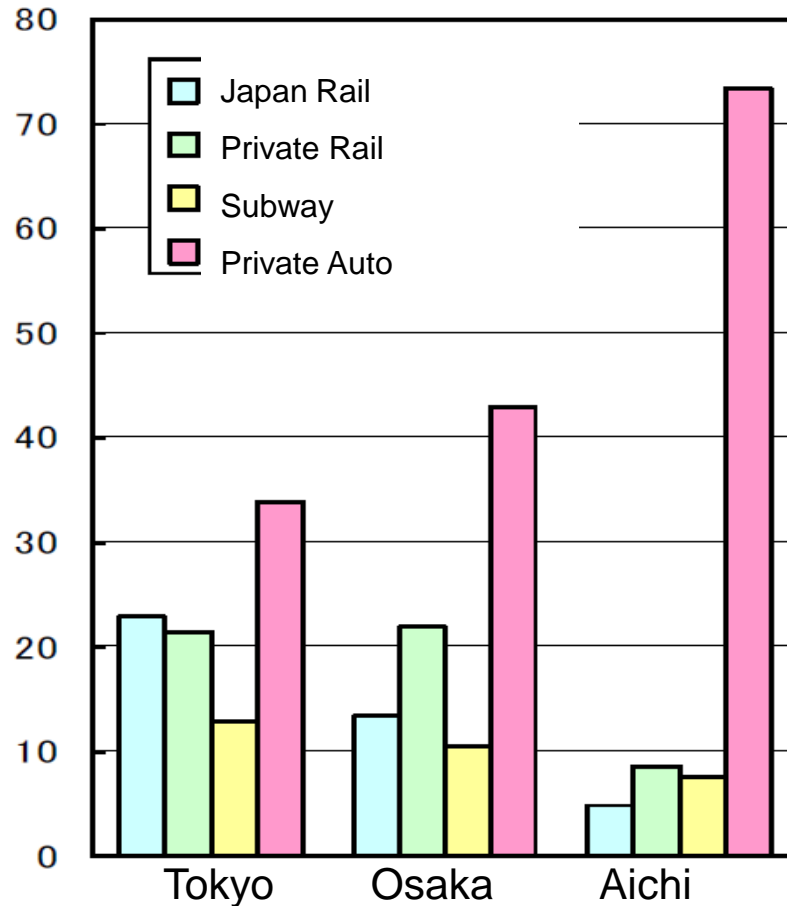
# Japanese Life Expectancy



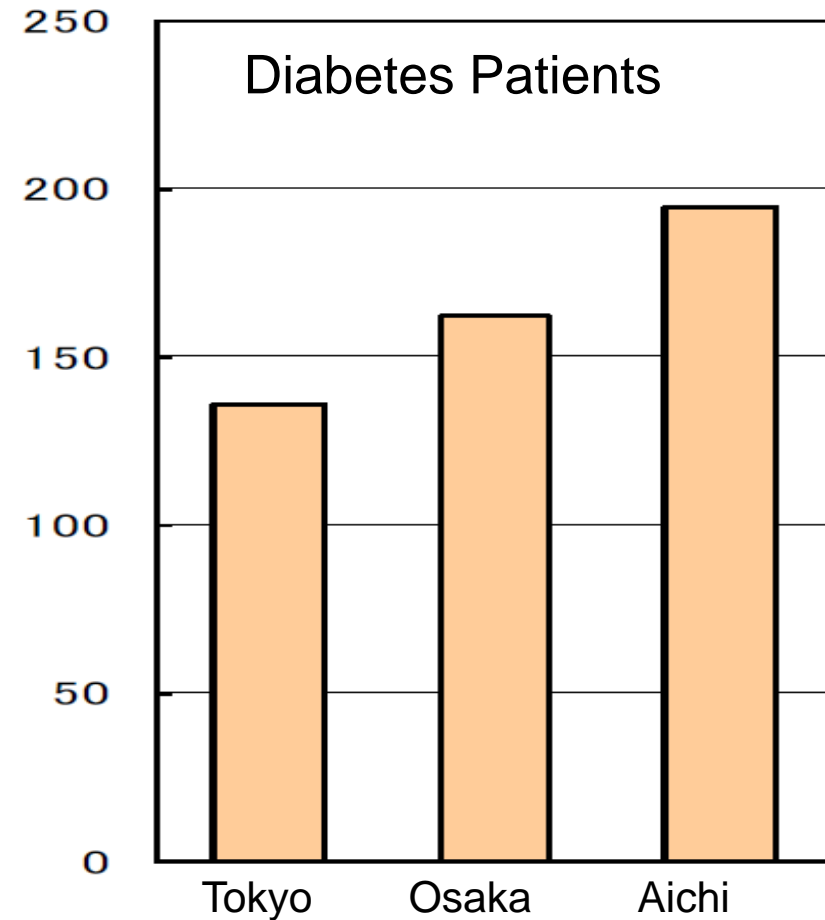
Source: <http://www.nippon.com/en/features/h00079/>

# Private Automobile vs. Diabetes

Mode of Travel (%)

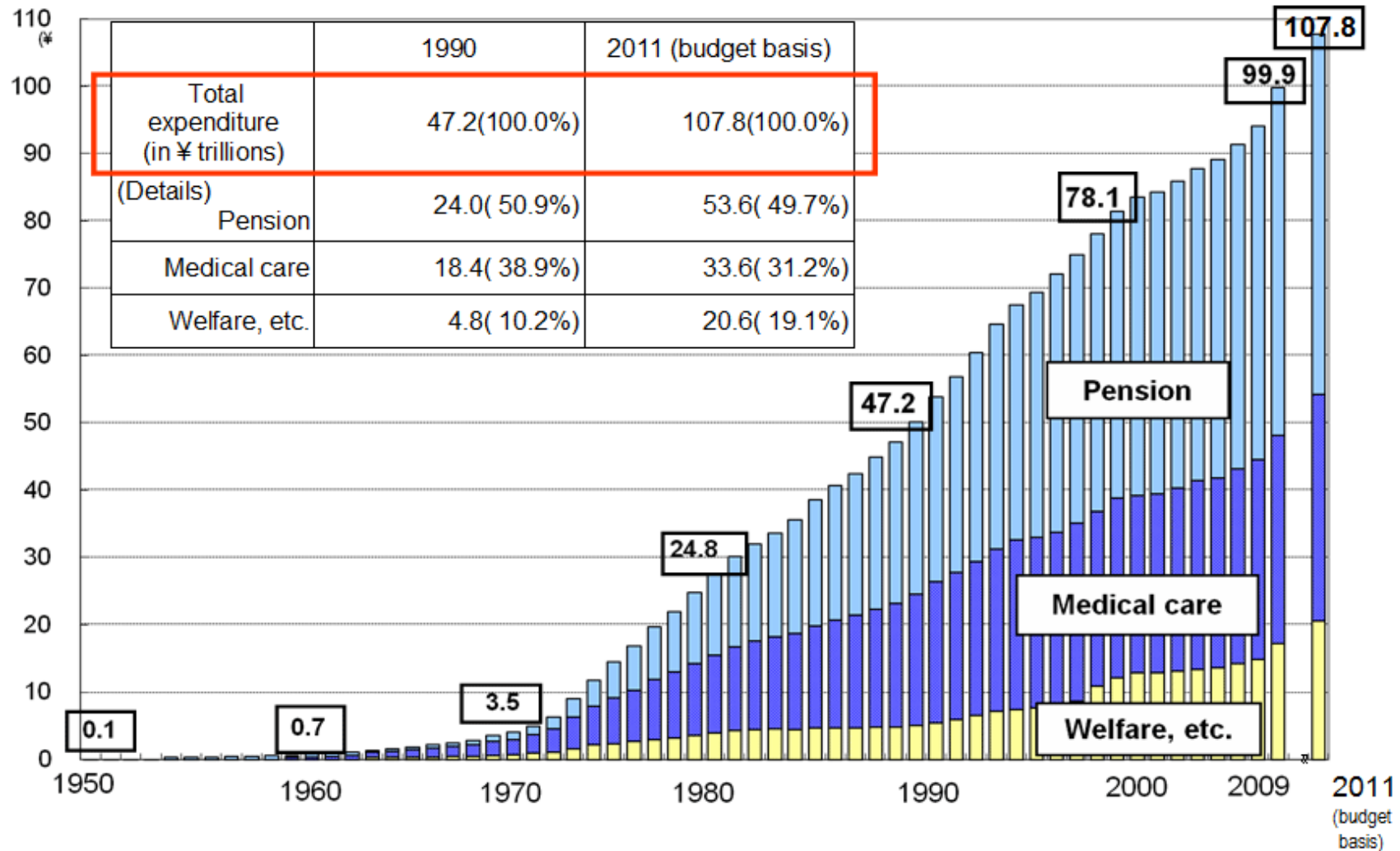


Persons/100,000



Source: H. Tamemoto, Obesity and Diabetes, Vol. 8 No.923, 2009

# Soaring Social Security Expenditure



# Smart Wellness City

- To delay the frailty of elderly, the best approach is to maintain/improve health.
- It involves not only health care, but also the improvement of living environments.
- The basic objective of SWC is to promote active transport such as walking and cycling to form healthier communities.
- Now there are more than 80 SWCs in Japan and the number is increasing.

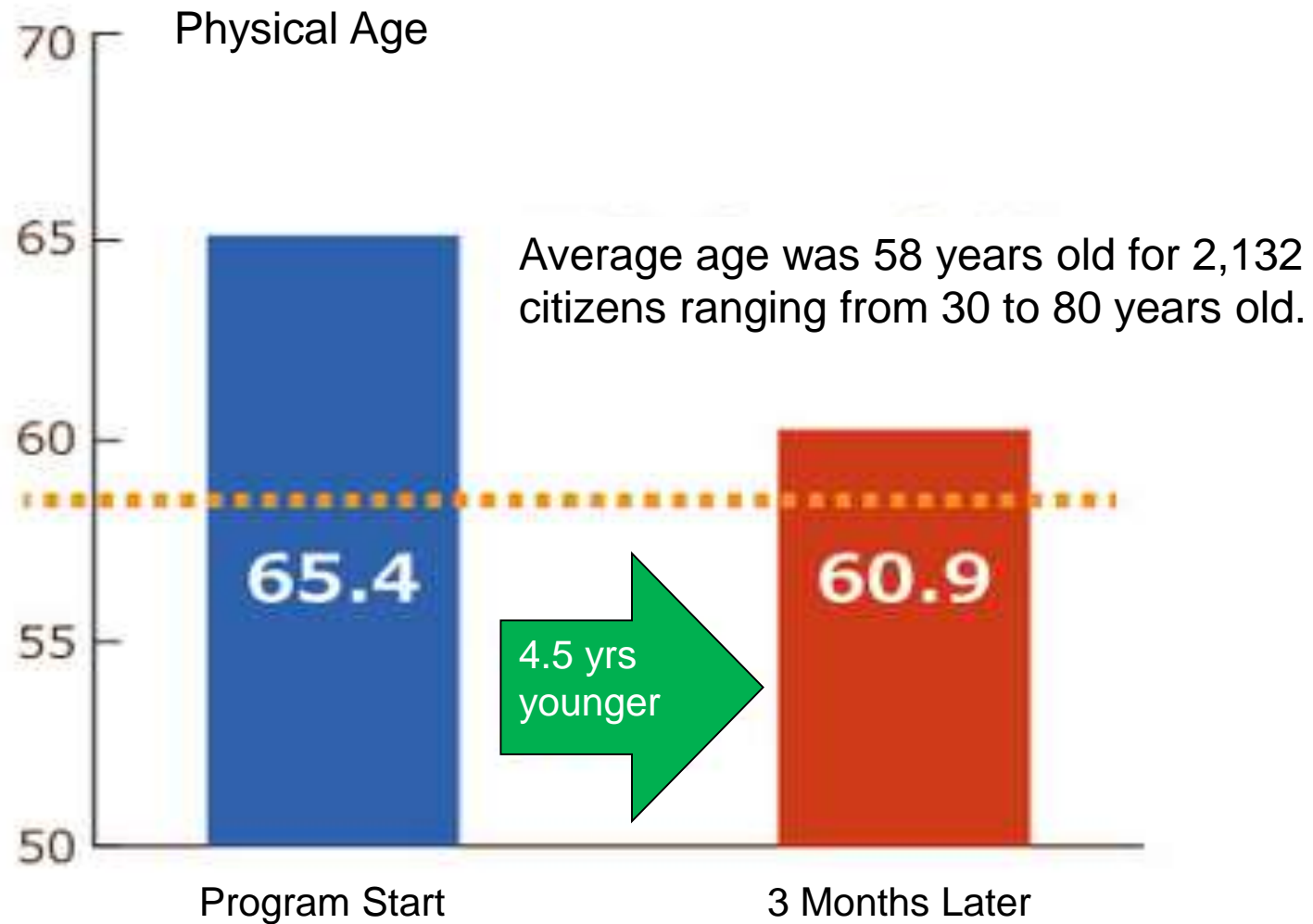
# Four Elements of SWC

1. Infrastructure for public transport, bicycles and walking
2. Objective evaluation based on health and medical data analysis (Evidence-based Analysis)
3. Health promotion incentives to change citizen's lifestyle
4. Enhancement of health literacy and social capital formation



# Effect of Exercise Program

Physical age change of 4.5 years due to exercise program in Mitsuke City

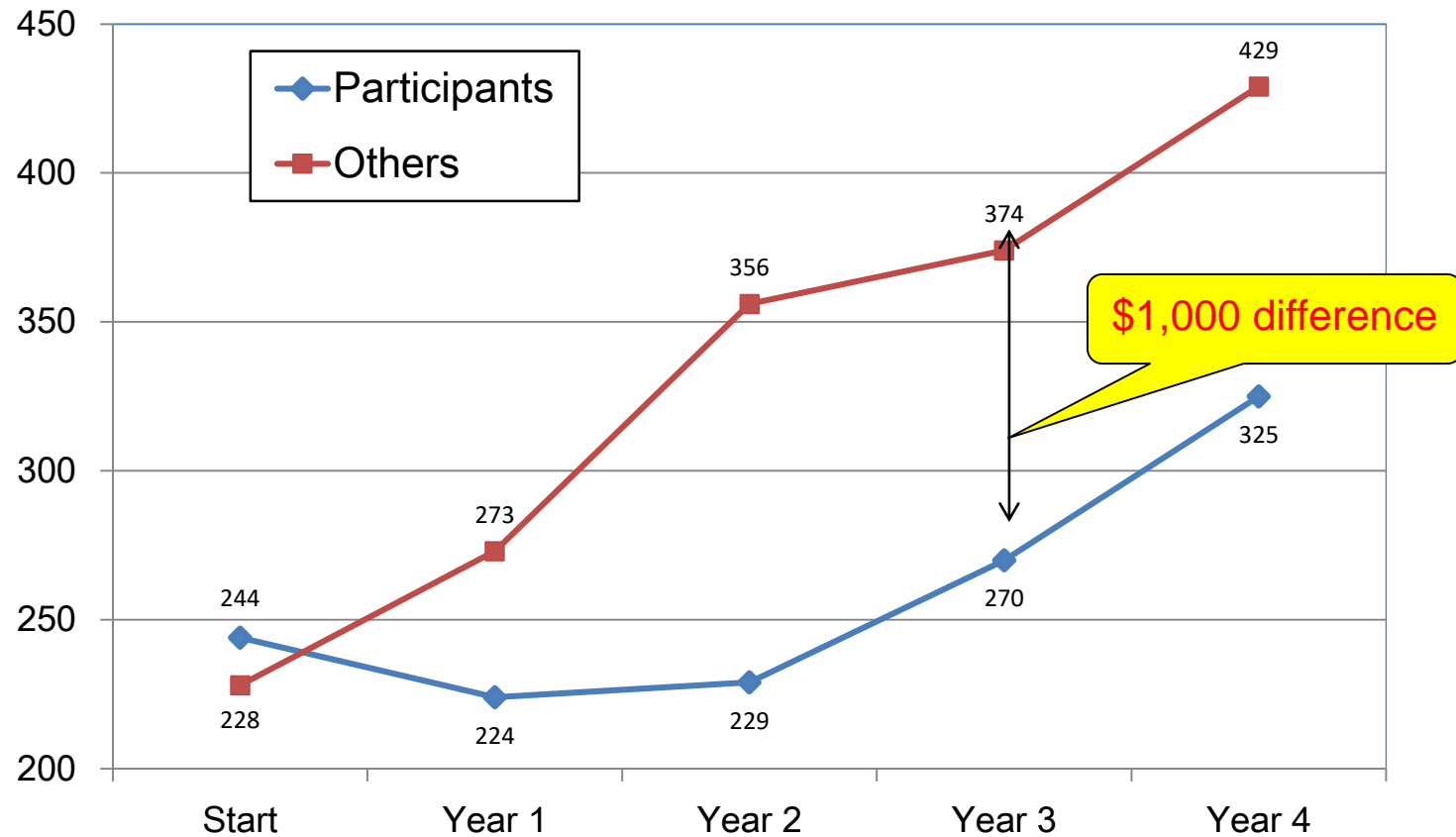


Source: Kuno Laboratory 2011

# Effect of Health Program

Average medical expenditure for 70 years old citizens in Mitsuke City

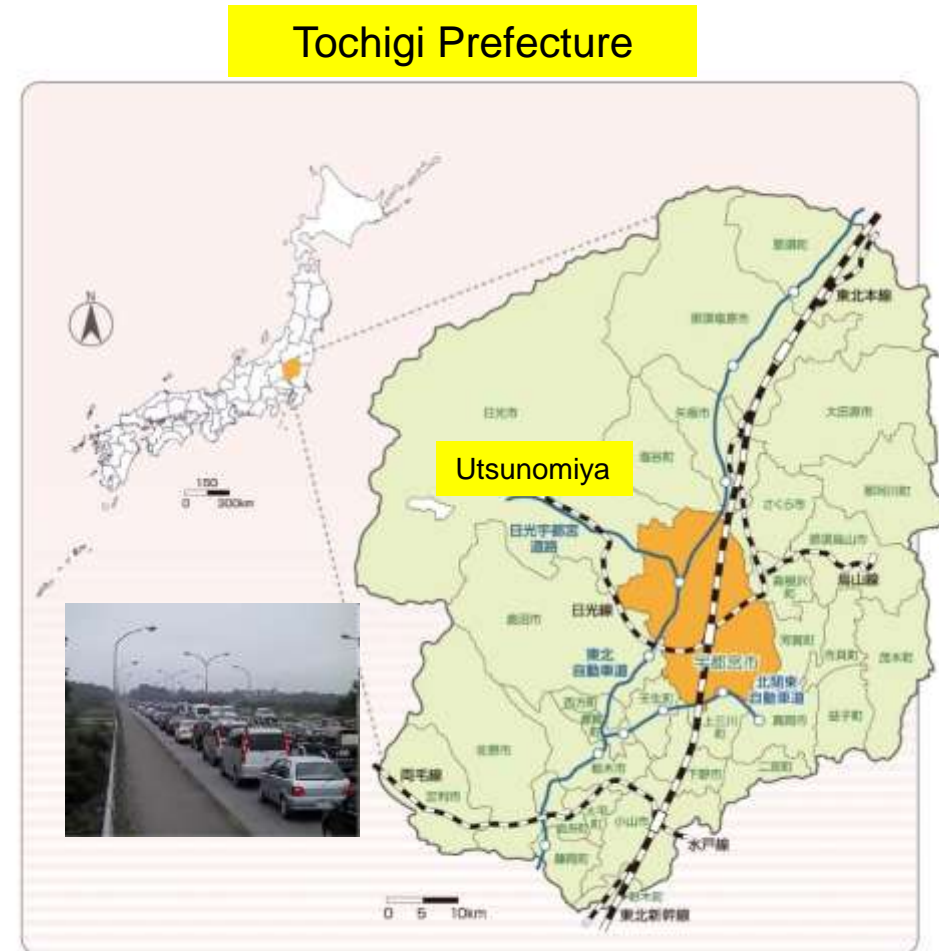
1000 yen per person per year



Source: [http://www.soumu.go.jp/main\\_content/000199079.pdf](http://www.soumu.go.jp/main_content/000199079.pdf)

# Utsunomiya City – a Case Study

- A regional capital with half a million population.
- Located 100km north of Tokyo.
- Highest auto-dependency in Japan.
- From Sprawl to Compact City
- New LRT, the first in Japan.
- Cycle City Utsunomiya Plan.
- Revive CBD with pedestrian.
- New campaign to improve city image.



# Cycle City Utsunomiya

## Japan Cup Cycle Road Race

since 1990. Upgraded to UIC Class 1.HC. in 2008. The highest race in Asia.

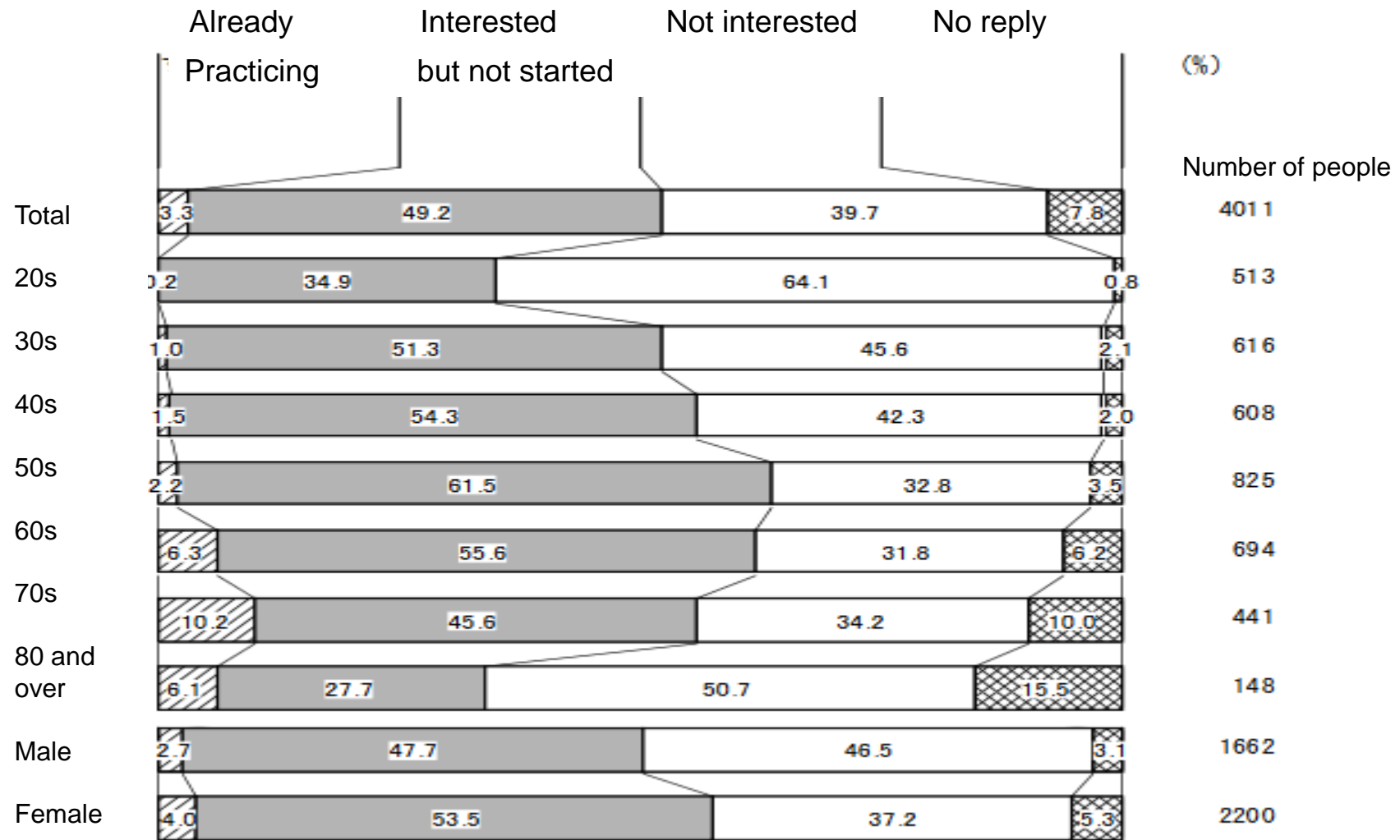
criterium in the city center since 2010





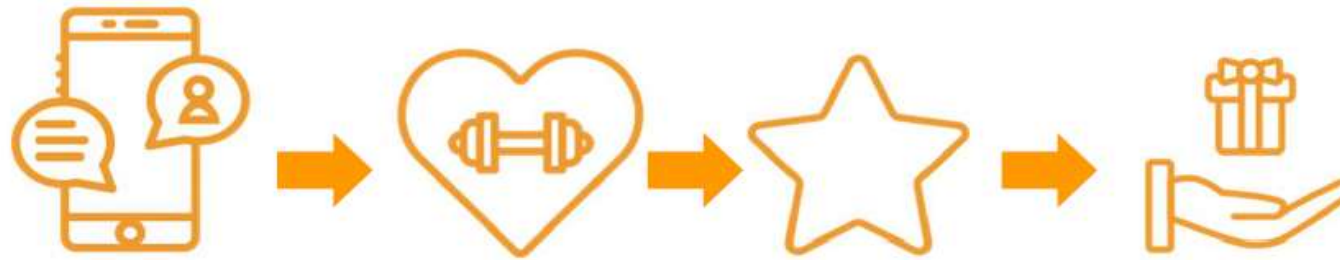


# Citizen Willingness to Participate Exercise



Source: Utsunomiya Health Department Survey

# Utsunomiya Health Point System



1. Registration

2. Health activities

3. Point acquisition

4. Exchange to gifts

## Point Conversion table and additional points



- Additional points will be given by achieving daily or weekly walking steps or cycling distance targets
- Also by weight measurements, medical checkup, BMI improvement
- Participation to walking rally and sport events

# Utsunomiya Health Point System App



## 1. Main Page

Automatically measures walking and cycling amount and converts to points acquired. Bottom shows daily activity amount converted to equivalent steps.



## 2. My Page

Height, weight, BMI at the top  
History of activity records.



## 3. Activity Record

Amount of activities by mode,  
Route moved on map

After registration, health points are automatically added by just carrying a smartphone.



# Encouragement for continuous commitments

## ■ Walkathon with automatic check-in function



## ■ Automatic goal setting and encouragement of exercise



# Profile of participants (2019.5.31)

Sex	Male	Female	Total
Number	4,688	6, 830	11,518
Ratio	40.7%	59. 3%	

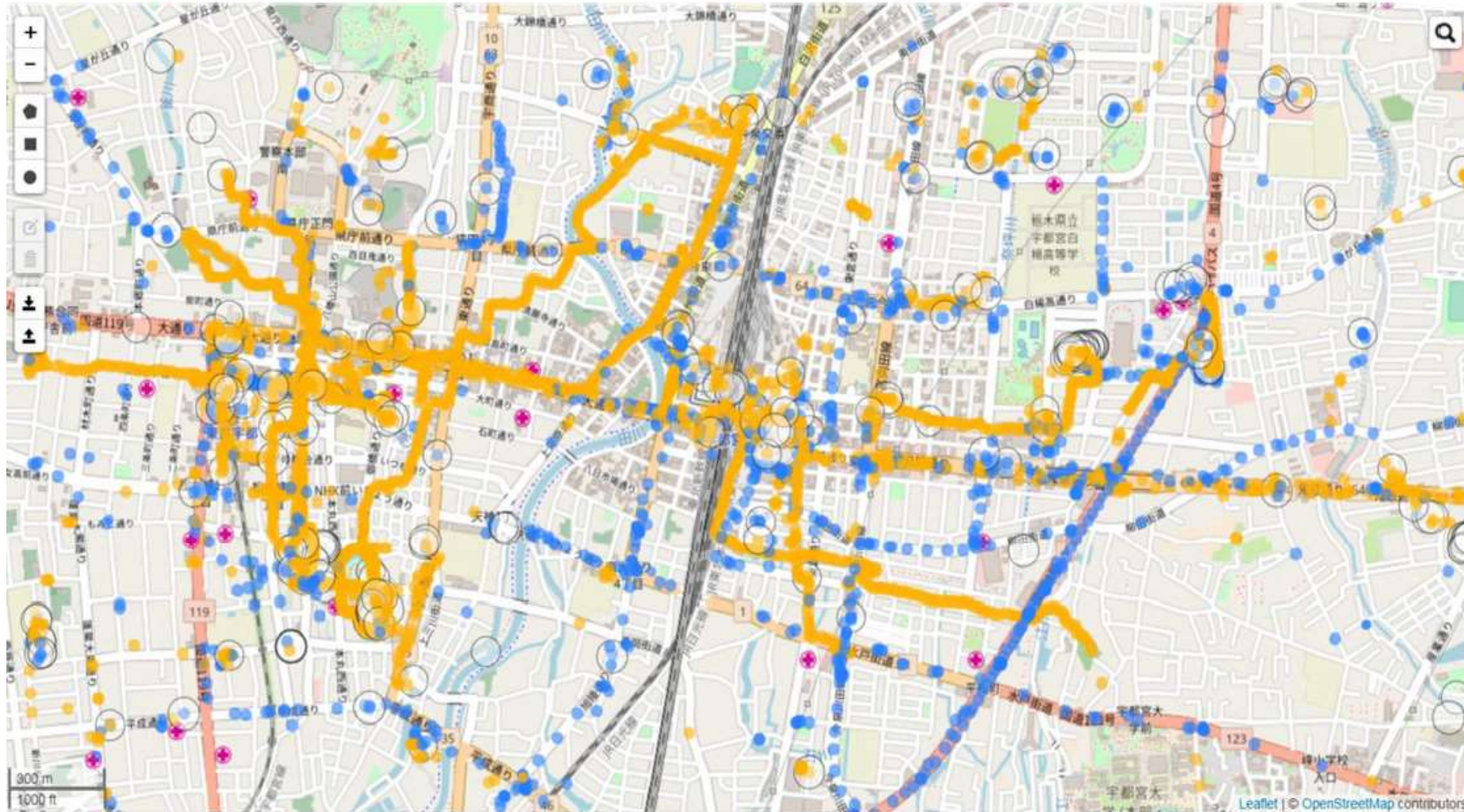
Age Group	Under 20	30s	40s	50s	60s	70 and over
Number	1, 199	1,997	2,682	2,067	1,668	1,905
Ratio	10.4%	17.3%	23.3%	17. 9%	14. 5%	16.5%

# Results after one year

- More than **11 thousand** people participated
- High participation of middle aged group
- Average increase of **2,000 steps** after one year
  - (4249 steps in April 2018 => 6,277 steps after 1 year)
- **72.2%** of participants improved their BMIs
- 55 sponsors donated gifts
- 2,830 participants exchanged their points to gifts
- Total points exchanged is 4.6 million points as of May 22, 2019 (= about 38,000 Euro)



# Accumulated user traces for GIS analysis



<2018年4月15日12:00~14:00 アプリユーザー行動分布 オレンジ色:徒歩、青色:乗り物>



(It is fun to run in Utsunomiya)

Thank You for Your Attention