What will happen in the “Super-aged Society”

1) Rapid increase of the number and proportion of old-old people with age 75 and over;
   23% in 2010 to 32% in 2030
2) Rapid increase of care-needed elderly person;
   4.0 million in 2010 to 7.5 million in 2030
3) Rapid increase of demented elderly person;
   3.6 million in 2010 to 6.5 million in 2030
4) Rapid increase of number of death in a year;
   1.1 million in 2010 to 1.7 million in 2030
5) Rapid increase of single and married couple household with member age 65 years old and over;
   54% in 2010 to 70% in 2030
Japanese Elderly People Today

Young-old (65-74 yrs.)

Very healthy
Very active
Good social tie and network
Hoping to work as possible

The new generation of young-old is capable of actively contributing to the society and many desire to do so.
About 30% on the elderly are willing to work over life-time. More than half of older people expect themselves to retire at age 65 and over.
In fact, almost 30% of men aged 65 and over are in the labor force, much higher than in European countries and even USA. Japanese women also lead the world in labor force participation.

Old-old (75 + yrs.)

Geriatric Syndrome
Long-term care state
Frail & Sarcopenia
Dementia (Cognitive funct...
LONG-TERM CARE INSURANCE SYSTEM

- LTCI started in April, 2000.

- LTCI is for sharing nursing care costs for the elderly among the general public, and allows users to select the prevention and nursing care services which they hope to use.

- LTCI was reformed in April, 2006 to be more prevention-oriented system for the elderly whose daily life become less active.
Geriatric Syndrome

- Physical frailty
- Sarcopenia
- Fall
- Incontinence
- Undernutrition
- Oral Dysfunction
- Cognitive Decline

Characteristics of Geriatric Syndrome
- slowly progressive and non-fatal
- not necessarily caused by diseases
- leave untreated, QOL becomes worse
- preventable with proper intervention

2012/10/16
**Current Concepts of Sarcopenia**

Sarcopenia, from the Greek for “poverty of flesh,” is a term coined by Rosenberg in 1989 to denote the decline in muscle mass and strength that occurs with aging.

1. Muscle weakness
2. Slow walking speed
3. Self-reported exhaustion
4. Low physical activity
5. Unintentional weight loss

**Loss of Muscle Mass**

<table>
<thead>
<tr>
<th>Disability</th>
<th>Mobility ↓</th>
<th>Falls</th>
<th>Hospitalization</th>
<th>Fractures</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.15</td>
<td>1.49</td>
<td>1.32</td>
<td>1.97</td>
<td>1.97</td>
<td>1.71</td>
</tr>
</tbody>
</table>

**Flow chart of participants in the RCT**

1. Non-participants = 149
2. Sarcopenia = 304 (21.7%)
3. Randomization = 155 (51.0%)
4. RCT and Cross over
   - Exercise + Amino acid 39
   - Exercise 39
   - Amino acid 39
   - Control 38

   Post test in July (n=34)
   Post test in July (n=36)
   Post test in July (n=37)
   Post test in July (n=37)
**Intervention Program (1)**

**Exercise**

1) Exercise period: 3-month  
2) Frequency: 2 days per week  
3) Time: 60 minutes  
4) Exercise Program  
   (1) Muscle strengthen training (thigh, abdominal)  
      – Chair, band, ankle weight, and ball exercise  
   (2) Balance and walking training

**Intervention Program (2)**

**Amino acid**

1) Supplement period: 3-month  
2) Frequency: 3g supplement × 2 times per day (total 6g)  
3) Compliance: To accurately monitor the amino acid ingestion during the trial, a recording sheets were distributed to the subjects, who were instructed to record the time and amount of amino acid ingestion at home everyday.
RCT for Improvement of Sarcopenic Condition in the elderly women (Kim H, Suzuki T. et al. JAGS, 2011)

RCT for Prevention of Decline of Cognitive Function among the MCI Community Elderly

Three Factors in Daily Life (Life style)

運動習慣と認知症発症との関係

3か月間の運動による脳活発効果
Exercise Intervention (80 sessions in 6 months)

Task 1
Health Check
Warming-up

Task 2
Aerobic exercise

Task 3
Game, Fun
Exercise, Activation of Brain Function

Task 4
Communication and relax

A: Mini mental state exam., B: Wechsler memory scale-logical memory total score, C: word fluency test-category, D: word fluency test-letter. Blue-exercise, Red-control
In order to establish “Integrated Community Care System”, comprehensive and continuous provision of five types of care is needed within the local community.
Thank you for your kind attention.