I. Objectives and Overview of the NILS-LSA

1) Background and outline of the NILS-LSA

The life expectancy of the Japanese population is the longest in the world. Both the absolute number and relative percentage of older population in Japanese society is rapidly increasing. In 2020, the percentage of older population in Japan will be the largest in the world. Along with these changes, various medical and care-giving problems for older adults have arisen. Longevity science, with the goal that all of older adults can live a long life with physical and mental health should be promoted in Japan.

Human aging is associated with many factors, including not only physical and physiological factors but also social and psychological factors. Thus, research into human aging requires many kinds of examinations and specialists in various areas. In addition, human aging research requires long-term study in which the same subjects are measured repeatedly to observe age-related changes. However, the number of researchers and budget for studies on gerontological and geriatric epidemiology are limited. It has been very difficult in Japan to start and to continue a large-scale and comprehensive longitudinal study of aging, despite a rapid increase in older population.

In 1995, a new national research institute of aging in Japan, the National Institute for Longevity Sciences (NILS) was established and in 1997 the NILS-LSA (NILS - Longitudinal Study of Aging) started. The participants in the NILS-LSA of the first wave were 2,267 randomly selected men and women aged 40 to 79 years from the NILS area. They will be examined every two years. Six to seven participants are now examined every day at the NILS-LSA examination center. The aging process is assessed by detailed questionnaires and examinations including clinical evaluation, body composition and anthropometry, physical functions, nutritional analysis, and psychological assessments. The data from the study will be useful to investigate the causes of geriatric diseases and health problems in older adults such as depression, mental disturbance, restriction of ADL, low nutrition and physical activity.

The data will also be useful to prevent these diseases and health problems in older adults.

2) Progress of the NILS-LSA

In 1990, projects of "Comprehensive Research on Aging and Health" were started by the Ministry of Health and Welfare to promote longevity sciences in commemoration of the 60th year in the reign of Emperor Showa. A research group for a longitudinal study of aging was organized as one of these projects. Indices on aging were evaluated, the methodology for the longitudinal study was assessed, and many problems in actual longitudinal follow-ups using existing cohorts were analyzed by this research group in order to start a new comprehensive longitudinal study of aging in Japan. A pilot longitudinal study on aging started in 1992. A manual of the many procedures used in the study was published in 1996.

In July 1995, the National Institute for Longevity Sciences (NILS) was established as the leading national research center for aging and geriatrics in Obu city in the suburbs of Nagoya. In 1996, the Laboratory of Long-term Longitudinal Studies was established in the Department of Epidemiology to start a new longitudinal study of aging in Japan.

Various equipments necessary for geriatric research, such as magnetic resonance imaging (MRI) and peripheral quantitative computed tomography (pQCT) were set up in the NILS, and a special examination center for longitudinal study was established in the Chubu National Hospital. Physicians, psychologists, nutritionists, epidemiologists, and exercise physiologists were assigned to the Laboratory of Long-term Longitudinal Studies and the Department of Epidemiology.

In October 1997, a trial run of the examinations was conducted, and in November 1997, the NILS-LSA began as a large-scale and comprehensive longitudinal study of aging in Japan. Every day, six or seven participants were examined at the NILS-LSA Examination Center. In the first wave of the examination finished in April 2000, 2,267 men and women had completed the examinations. All participants will be examined every two years. The total number of examined variables was over 1,000, including various areas of gerontology and geriatrics such as medical examinations, anthropometry, body composition, physical functions, physical activities, psychological assessments, nutritional analysis and molecular epidemiology.

3) Objectives of the NILS-LSA

1. Main purpose

Systematic observation and description of the process of normal aging in humans.

    (1) To quantify normal and successful aging.
    (2) To determine the reference values in normal aging process by longitudinal observation.

2. Additional purpose

    (1) To find out early markers of age-related diseases.
    (2) To clarify molecular genetic factors of aging and geriatric diseases.
    (3) To find out factors associated with longevity.
    (4) To examine the effects of life-style, stress, life events and disease on aging process.
    (5) To separate normal aging and age-related disease.
    (6) To assess the influence of age on progressive changes of various diseases.
    (7) To determine predictors of age at death and risk factors for diseases as well as

institutionalization and loss of independence.
(8) To examine race difference by international comparative study.
(9) To assess social and economical changes with age in older adults.
(10) To develop indices of biological age.
(11) To prepare basic population for the research of clinical and social medicine.

4) Research area

The NILS-LSA is a facility-based study using various equipments including MRI, DXA and pQCT for the detailed and comprehensive assessments of aging and geriatric disease. The facility of examinations is located at the Chubu National Hospital adjoins the NILS. Thus, the research area was determined to be in the neighborhood of the NILS, that is Obu city (population 70,000) and Higashiura town (population 40,000) (Fig. 1). This area is located in the south of Nagoya, and is a bedroom town and also industrial area of the Toyota group, but still has many orchards and farms, having both urban and rural characteristics.

This research area is geographically located at the center of Japan, and the climate is almost Japanese average. We examined the representativeness of the area via national postal questionnaire of prefecture-stratified random samples of 3,000 households from all prefectures in Japan, and found that the life-style of this area was the most typical of all areas in Japan. It is expected that the results of examinations in this area will represent Japan.
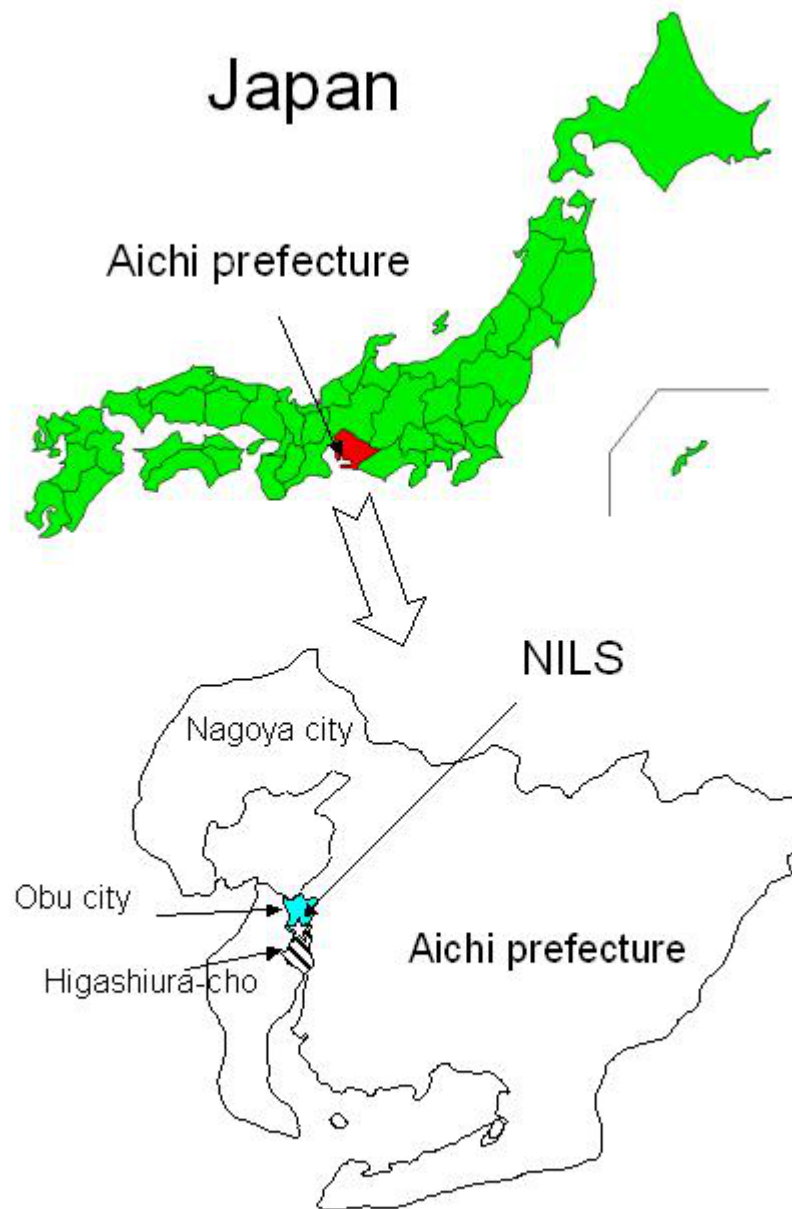
Fig.1 Research area of the NILS-LSA

5) Subjects

The subjects of the NILS-LSA were male and female residents of 40 to 79 years old. The population of Obu city and Higashiura town was stratified by both age and gender, and randomly selected from resident registrations in cooperation with the local governments. The number of males and females was to be the same to test gender difference. Age at the base line is to be 40 to 79 years and the number of participants in each decade (40s, 50s, 60s, 70s) is to be the same. The total number of participants was too be 2400, that is 300 males and 300 females for each decade. They will be followed up every two years. Age and gender-matched random samples of the same number of dropout participants will be recruited except the participants over 79 years old. The male and female participants aged 40 years will be also newly recruited every year.

Recruitment and follow up of convenient samples would be much easier than with random samples.

However, these samples generally tend to be interested in health, and observation of these samples would produce biased results. Examinations in random samples are necessary to observe the aging process of ordinary Japanese who live ordinary lives.
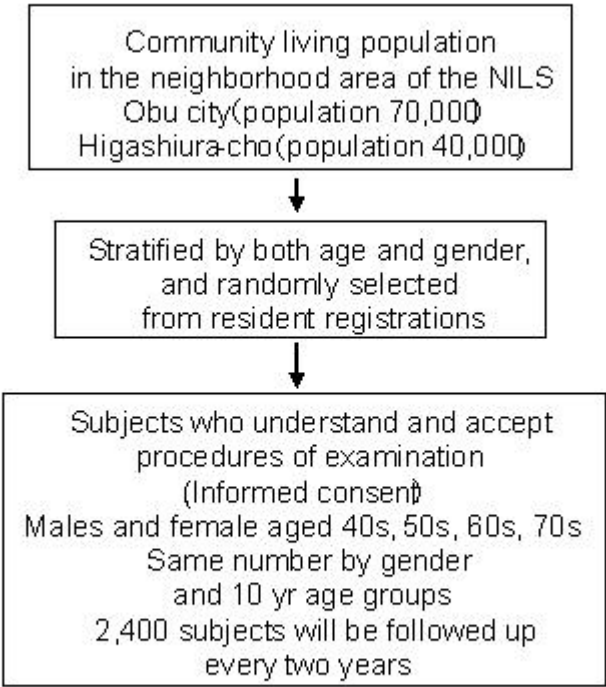
Community living population
in the neighborhood area of the NILS
Obu city(population 70,000)
Higashiura-cho(population 40,000)

↓

Stratified by both age and gender,
and randomly selected
from resident registrations

↓

Subjects who understand and accept
procedures of examination
(Informed consent)
Males and female aged 40s, 50s, 60s, 70s
Same number by gender
and 10 yr age groups
2,400 subjects will be followed up
every two years

Fig. 2 Selection of the subjects in the NILS-LSA.

Age	Male	Female	Total
40 – 49	291	282	573
50 – 59	282	279	561
60 – 69	283	285	568
70 – 79	283	282	565
Total	1,139	1,128	2,267

Age and gender distribution of the first wave participants

6) Implementation of the study

Selected males and females who were assigned to the examination were invited by mail to an explanatory meeting that was held (Fig. 2, 3). At the explanatory meeting, procedures for each examination and the importance of continuation to follow up were fully explained. Participants were limited to those who accept examination procedures and sign their names on a written form (informed

consent).

The Department of Epidemiology of the NILS was taking the initiative for all examinations and investigations. The participants are examined from 8:30 am to 5 pm at a special examination center within a facility at the Chubu National Hospital located next door to the NILS (Fig. 4). To examine 2,400 men and women in two years, that is, 1,200 males and females per year, six or seven participants are to be examined each day, four days a week from Tuesday to Friday, 200 days (50 weeks) a year. Taking advantage of the fact that all participants can be examined at a center, detailed examinations including not only medical evaluations, but also examinations of exercise physiology, body composition, nutrition, and psychology can be done. Each examination was to be extensive and most up-to-date, aiming at keeping the internationally highest level. The follow up period is to be up to 30 years, but we hope to get initial significant longitudinal results within 5 to 10 years. The first wave examination was finished by April 2000, and 2267 male and female participants had completed their examinations. The second wave examination was started.

Information from the examinations that would be helpful to manage the health was returned to individual participants as a report from the NILS-LSA.
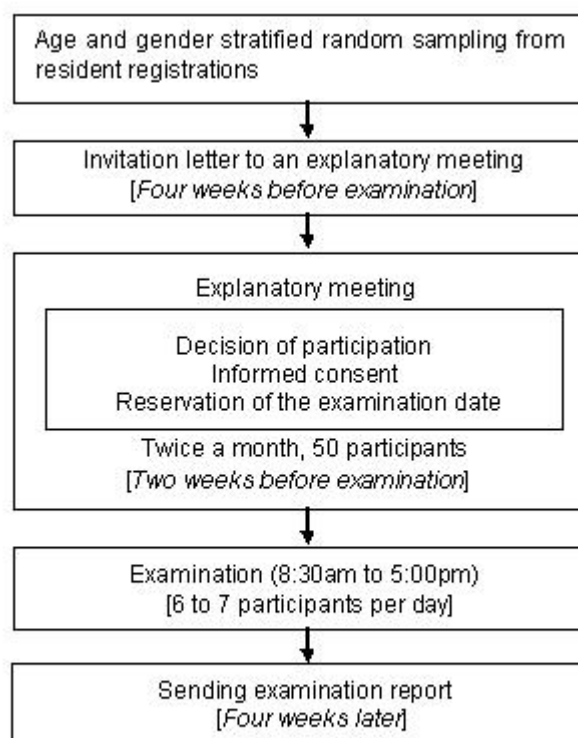

Fig. 3 Examination schedule in the NILS-LSA.

7) Informed consent

Participation in the examinations totally depended on free will, without any enforcement. All participants were fully informed of the following items. Only subjects who understood and accepted examination procedures, and signed their names to a written form to participate in the study (informed consent) were included. This informed consent included; (1) purpose of the study; (2) detailed procedures for each examination; (3) gene analysis; (4) preservation of blood, urine and DNA samples for future examinations; (5) to send examination report to the participants; (6) to keep personal data

secret. The Ethical Committee of the Chubu National Hospital had already approved all procedures of the NILS-LSA.

8) Examinations and tests

The normal aging process was assessed by detailed examinations including clinical evaluation, sensory functions, body composition and anthropometry, physical functions, nutritional analysis, and psychological tests (Table 1).

Table 4. The second wave examinations and tests in the NILS-LSA

- ***Health related questionnaire***

  Self-rated Health (SRH), Medical history, Clinical symptoms, Life style, Personal history (job, marriage, education, etc.), Family history, Environment, Alcohol, Smoking, Social and economical back ground

- ***Routine clinical evaluations***

  Physical examination
  Blood pressure
  Blood chemistry (fasting)

  > GOT, GPT, gamma-GTP, Total protein, Albumin, LDH, Alkaline phosphates, Chorine esterase, Uric acid, Urea nitrogen, Creatinine, Calcium, Total cholesterol, Trigrlyceride, HDL-cholesterol, Lipid peroxide, Fasting glucose, HbA1c, Insulin, Vitamin A, Serum sialic acid, Fe, Cu, Mg, Zn, free T3, free T4, TSH, DHEA-S, DHA, EPA, arachidonic acid, Dihome-gamma-linolenic acid

  CBC: Red cell count, White cell count, Hb, Hematocrit, Platelet count
  Urine analysis: Protein, Sugar, Urobilinogen, Ketone, pH, Occult blood, Hemoglobin, Nitrite

- ***Sensory examinations***

  Visual system

  > Visual acuity: near vision (33 cm), distant vision (5 m), Kinetic visual acuity, Refraction, Visual field, Retinal camera, Intraocular pressure, Color perception, Stereoscopic vision, Contrast sensitivity, Quantitative test of lens opacity

  Auditory system

  > Audiometry (air and bone), Middle ear functions (Impedance audiometry)

  Skin sensory system

  > Quantitative sensory test (Neurometer), Skin discrimination test

- ***Medical examinations***

ECG (Automatic ECG analyzer)
Cardiac ultrasonic tomography
Intima-media thickness of carotid artery
Head MRI (Magnetic resonance imaging system)
Pulse wave (digital plethysmography)
Pulmonary functions (spirometer)
Blood oxygen saturation (Pulse oxymeter)
Thoracic and lumbar radiography

Dual energy X-ray Absorptiometry (DXA)

> Lumbar spine, Right and left femur neck, Total bone density, Body fat (total and segmental fat)

High Quality Peripheral Quantitative CT (pQCT)

> Radial bone mineral density

Aging and geriatric disease related genotypes

> Alzheimer disease and dementia related genotypes
> Osteoporosis related genotypes
> Obesity and diabetes related genotypes
> Parkinson disease related genotypes
> Cardiovascular disease related genotypes

- ***Anthropometry and body composition***

  Anthropometric measurements
  Body fat measurement
  Air displacement plethysmography (BOD POD),
  Bioelectrical impedance body fat measurement,
  Dual energy x-ray absorptiometry (DXA)
  Bioelectrical impedance body fat measurement
  Body fluid measurement (Bioimpedance spectroscopy)
  Intra- and Extra-cellular fluid
  Thickness of fat and muscle tissue (Ultrasonic tomography)
  Intra-abdominal fat, Muscle thickness, Subcutaneous fat thickness
  Abdominal fat distribution (Computed tomography)
  Intra-abdominal and Subcutaneous fat area

- ***Physical function***

  Exercise test system

  > Grip strength, Sit-ups, Trunk flexion, Static balance, Leg extension power, Isometric leg strength, Reaction time, Maximum step length.

  10m Walking test (pitch, step length, velocity),
  Gait assessed by 3-D motion analysis system (four cameras and two force plates)
  Stabilometer (with eye-open and eye-closed conditions)

  Daily physical activity questionnaire

Electric pedometer (7 days average)

- *Psychological tests*

    Interview
    Cognition (MMSE, WAIS-R), Life events, Stress, Social relations, Basic ADL (Katz Index)

    Questionnaire
    Depression (CES-D, GDS), Personality (Self-esteem, EPSI, Locus of control, Attitude toward death), Social environment (Social support, Social network), Family relations, Subjective well-being (LSI-K, SWLS), Stress coping, Instrumental ADL

- *Nutrition analysis*

    Food and nutrition Intake - Three-day dietary record using scale and disposable camera
    Food frequency questionnaire
    Dietary habit questionnaire

---

1. Routine clinical evaluations

First of all, physical examinations including history taking, auscultation and blood pressure were taken by a physician, and during the medical examination the physician reconfirms every participant willingness to participate in examinations. Venous blood and urine samples were collected early in the morning after at least 12 hours' fasting.

Life-style, medical history and medication were examined by questionnaires. These questionnaires are checked by a physician at the medical examination. All drugs were to be documented by participants; the physician confirms them at interview and codes drugs used during the last two weeks.

Blood and urine analysis including renal and liver functions, serum protein and lipids, and complete blood count, lipid peroxide, fatty acid fractions, sex hormones and geriatric disease markers were also examined. Serum and DNA samples were stored in deep freezers for future examinations. As for DNA analysis, genotypes related geriatric diseases such as Alzheimer's disease, arteriosclerosis, osteoporosis, benign prostate hypertrophy and diabetes mellitus were examined with the agreement of the participants.

2. Physiological examinations

For physiological examinations, a head MRI was taken for the each participant and stored in an image database. Intracranial tumors and vascular lesions are checked and brain volume was estimated via a computerized trace of the MRI. Electrocardiograms are assessed by computerized automatic diagnosis and Minnesota codes of the diagnosis were stored in a database. Cardiac functions and intima-media thickness of the carotid artery were assessed by ultrasonic tomography. Peripheral vascular function was assessed using a digital plethysmogram. Pulmonary functions were examined with a spirometer. Blood oxygen saturation was also checked with an oxymeter. Blood pressure was measured by a physician as well as with an automatic blood pressure manometer.

Osteoporosis is one of the major geriatric diseases. Osteoporosis causes chronic lumbago and bone fracture that disturbs activity in daily life in older adults. Bone mineral density was measured by dual x-ray absorptiometry (DXA, Hologic QDR-4500). Four scans, including whole body, lumbar spine L2 to L4, right and left femoral bone neck, were taken. Moreover, bone density was also measured by high

quality peripheral quantitative computed tomography (pQCT, Dinsiscan 1000).

3. Sensory examinations

Sensory functions are profoundly associated with QOL in older adults. Visual and auditory disturbance causes various difficulties in the daily lives of older adults. Sensory functions, including visual and auditory functions were examined in detail. As for visual acuity, both distant vision (5 m) and near vision (33 cm) were assessed. Kinetic visual acuity, stereoscopic vision, color perception, contrast sensitivity, visual field, and intraocular pressure were also examined. An anterior eye segment analysis system was used for the assessment of cataracts. Fundus photographs were taken with a Topcon fundus camera (TRC-NW5S). Autorefraction was done with the NIDEK-ARK700A. Refractive errors, in the spherical equivalent, were assessed.

Hearing acuity was assessed by pure-tone audiometry air conduction at 500Hz to 8000Hz in all participants and bone conduction in participants with hearing disturbance by air conduction. Middle ear function was also assessed by impedance audiometry. Peripheral skin sensory function was assessed using current perception thresholds at three different frequencies: 5, 250 and 2000 Hz. This is a non-invasive procedure to examine the function of three different sensory nerve fibers, that is A-beta fiber, A-delta, and C fiber. Cognitive sensory function at the parietal lobe of the brain was assessed by a skin discrimination test.

4. Anthropometry and body composition

For anthropometry measurements, height, weight, abdominal sagittal diameter, circumferences of waist, hip, thigh and upper arm and other parameters were taken. Using ultrasonic tomography, intrabdominal and subcutaneous fat thickness and muscle thickness were evaluated. Intra- and extra-cellular fluid was measured via bioimpedance spectroscopy. Body fat was assessed by impedance measurement, air displacement plethysmography and DXA.

5. Exercise examinations

Grip strength, leg extension power, knee extension strength, sit-up, static balance, reaction time, and trunk flexion were measured with a computerized automatic diagnosis system. Pitch, stride and velocity of walking were assessed by the 10m walking test. Linear velocity of center of mass, range of joint motion and torque were assessed using four video cameras and two force plates. Daily physical activities were checked by detailed interview using job-specific questionnaire sheets. Seven-day average of physical activity was also measured with an electric pedometer.

6. Nutritional survey

Nutritional intakes were assessed by three-day dietary record using a scale. The scale was handed out to all participants to record the weight of all foods taken over three days. If it was impossible to weigh each food, approximate size and amount of food were noted. At lunchtime on the day of the examination, dieticians explained to each participant how to weigh foods and how to determine the size and approximate amount. For more accurate assessment, disposable cameras are also handed out to all participants. Before and after each meal, participants were asked to take pictures of all dishes to record what kind of foods and how much food were eaten, and how much food was not eaten. Using these

dietary records and photographs, dieticians estimate actual food intake.

However, there were significant seasonal differences in daily food intake in Japan. Food intake was also assessed by a food frequency and dietary habit questionnaire excluding seasonal differences. The average of amounts and frequencies of 166 representative foods eaten during the previous year were written. A dietician interviewed the subjects to confirm the amounts and frequencies.

7. Psychological test

All participants were interviewed by psychology specialists. Cognition and intelligence were assessed using the Wechsler Adult Intelligence Scale-Revised Short Form (WAIS-R-SF) in all participants and the Mini-Mental State Examination (MMSE) in participants aged 60 years and over. Life events and stress coping were also assessed by interview. Basic ADL is checked via the Katz index.

Depressive symptoms, personality, subjective well-being, social environment including social support and social networks, stress coping and ADL were assessed using a questionnaire.

Over 1,000 variables, including various areas of gerontology and geriatrics will be checked repeatedly every two years in almost 2,400 participants. The staffs of the NILS-LSA were consisted of full time researchers, researchers from hospitals and universities, research assistants such as administrators, clinical technicians, dieticians, psychologists, programmers and radiologists. The total number of staff was 73.

9) Future of the NILS-LSA

We will continue the NILS-LSA to investigate the natural course of aging and the changes that lead to disease. The first wave examination was completed in March 2000. The participants were examined every 2 years. The cohort of the NILS-LSA is a dynamic cohort, that is, new subjects participate in the study instead of those who do not attend their next examination. Participants who move out of the area are to be followed up by telephone interview or postal questionnaire. Medical records of the participants who die during follow-up will be checked to find out the cause of death.

We are collaborating with other research facilities in Japan and other countries as shown in Fig. 5. Extensive tests and examinations should be repeated in longitudinal studies on aging. However, it is actually impossible to repeat many tests and examinations in multiple research facilities with the same protocols and methods. There are no comprehensive longitudinal studies on aging which have been followed up for a long period by multi-center collaboration in the U.S. or other countries.

However, cohort studies with common end points such as dementia and disturbance of ADL are also important for aging studies. Relatively large number of subjects and cases during follow-up need to get significant analysis results.

Comparative studies of the aging process accounting for regional and cultural differences between northern and southern areas, or between urban and rural areas, are also important. In these comparative studies, the number of common examinations and tests should be limited and measuring errors of each test and examination should be small. The study design should be a cross-sectional or short-term

longitudinal study, considering the difficulties involved continuing and repeating the examinations in all facilities with same protocols. An international comparative study collaborating with the Baltimore Longitudinal Study of Aging (BLSA) at the

National Institute on Aging (NIA) in the U.S. is also planned.
We are going to make the data of this study public through the Internet. We hope that the results from this large longitudinal study of aging can serve the development of health science on aging.
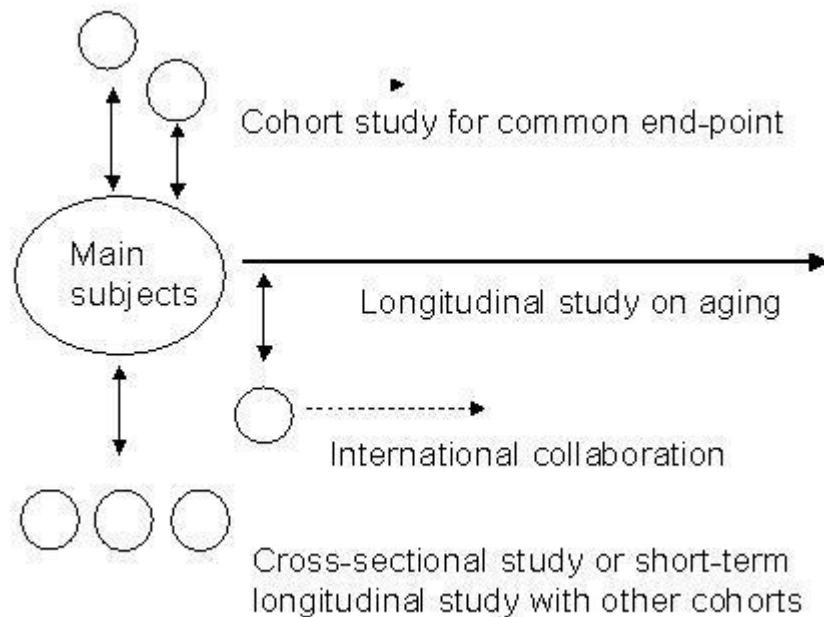

Fig. 5 Design of the longitudinal study by multi-center collaboration

10) Staff of the second wave examinations

Director
Hiroshi Shimokata, MD, PhD (Gerontology, Geriatrics and Epidemiology)

Chief, Laboratory of Long-term Longitudinal Study
Fujiko Ando, MD, PhD (Gerontology, Geriatrics and Epidemiology)

Chief, Laboratory of Epidemiology for the Aged
Naoakira Niino, MD, PhD (Gerontology, Epidemiology and Public Health)

Researchers
Michiko Koda, MS, Registered Dietician (Body composition and anthropometry)
Mituyoshi Hattori, BS (Radiology)
Yuko Hashimoto, BS (Radiology)
Chisato Ota, BS (Radiology)
Junichi Ando, BS (Radiology)
Michiko Fujisawa, MD (Internal Medicine)
Kiyoshi Takekuma, MD (Internal Medicine)

Research residents
Tomoko Imai, PhD, Registered Dietician (Nutrition)
Sakiyo Sakai, MS (Nutrition)
Satomi Tsuboi, MS, Clinical Psychologist (Psychology)
Yasuyuki Fukukawa, MS, Clinical Psychologist (Psychology)

Wataru Doyo, MS (Exercise Physiology)
Shigeki Tsuzuku, MD, PhD (Sports Medicine)

Visiting fellows
Keiko Mori, Registered Dietician (Nutrition)
Taeko Kajioka, MS (Body Composition, Metabolism)
Takako Kuno, MS, Registered Nurse (Nursing)
Shoko Nagaya, MD (Ophthalmology)
Naoki Tanabe, MD (Ophthalmology)
Ikue Uchida, MD (Otorhinolaryngology)
Naoko Tanahashi, MD (Ophthalmology)
Waner Zhu, MD (Geriatrics)
Rumi Kozakai, MS (Exercise Physiology)
Hitomi Ogasawara, MS (Exercise Physiology)
Chikako Tange, MS (Psychology)
Jiro Kanie, MD (Geriatrics)
Akihide Ito, MD (Otorhinolaryngology)

Studying abroad (National Institute on Aging (USA))
Satoshi Iwao, MD, PhD (Sports Medicine, Epidemiology)
Nobuko Iwao, PhD (Metabolism)

Hospital Researchers
Hidetoshi Endo, MD, PhD (Gerontology, Geriatrics, Care-giving)
Hisayuki Miura, MD,PhD
Marie Takemura, MD
Itoko Saito, Resisterd Nurse (Nursing)
Hisayuki Miura, MD, PhD
Hideki Nomura, MD, PhD (Ophthalmology)

Research Assistant
Kiyoharu Toyama (Radiology)
Takashi Nakamura (Radiology)
Kaori Sugiura (Blood Chemistry, DNA)
Emi Hattori (Nutrition)
Akiko Tone (Nutrition)
Noriko Kakizaki (Nutrition)
Chika Nagata (Nutrition)
Michiyo Tanaka (Nutrition)
Michiyo Kamae (Nutrition)
Hitomi Suzuki (Nutrition)
Masako Matsukawa (Nutrition)
Mieko Torii (Nutrition)
Junko Jinno (Nutrition)
Keiko Okamoto (Nutrition)
Masako Taneda (Nutrition)
Saeko Miyanuma (Clinical examinations)
Naomi Yamagishi (Clinical examinations)
Yumiko Hirose (Clinical examinations)
Yuki Iwata (Clinical examinations)
Chie Nakagawa (Clinical examinations)
Keiko Katogi (Clinical examinations)

Nobuhisa Maeno (Clinical examinations)
Etsuko Kishimoto (Clinical examinations)
Miyuki Yamada (Anthropometry)
Kazuko Hayashi (Anthropometry)
Rumi Kozakai, MS (Exercise examinations)
Yoko Suzuki (Exercise examinations)
Akemi Otani (Exercise examinations)
Noriko Yamaguchi (Exercise examinations)
Yumiko Hayashi (Exercise examinations)
Eriko Takeuchi (Exercise examinations)
Hiromi Yamamoto (Exercise examinations)
Tomonari Kamiya (Exercise examinations)
Kazushige Doyama (Exercise examinations)
Rumi Harada (Exercise examinations)
Junichi Inagaki (Exercise examinations)
Hiroshi Inagaki (Exercise examinations)
Chiaki Ono (Exercise examinations)
Ai Iriguchi (Exercise examinations)
Miki Hosoi (Exercise examinations)
Ayako Tajima (Exercise examinations)
Yumiko Tsukamoto (Exercise examinations)
Akemi Sugiyama (Clinical psychology)
Aya Kato (Clinical psychology)
Takako Ando (Clinical psychology)
Rieko Kimura (Clinical psychology)
Kayoko Ueno (Clinical psychology)
Toshie Nakagami (Clinical psychology)
Machiko Kawabe (Clinical psychology)
Noriko Edahiro (Clinical psychology)
Chikako Tange (Clinical psychology)
Eri Niimi (Clinical psychology)
Daisuke Hirata (Clinical psychology)
Yuka Iino (Clinical psychology)
Kazuyo Ogawa (Clinical psychology)
Akiko Koishi (Clinical psychology)
Eriko Ito (Clinical psychology)
Yukari Ishiuchi (Computer system)

Administration Staff
Kanae Yamabe (Accounting)
Tomoko Uno (Accounting)
Yoko Yagi (Accounting)
Hitomi Ogasawara (Management of Longitudinal Study)
Yukie Takenaka (Management of Longitudinal Study)
Mika Kobayashi (Management of Longitudinal Study)
Juri Harada (Management of Longitudinal Study)
Kunie Hasegawa (Office management)
Kishiko Ryu (Office management)