The Second Workshop on Aging and Aged Societies in East Asia.

Traditional Medicine meets Modern Science.

February 12, 2011
Tokyo Metropolitan Institute of Gerontology,
Tokyo, Japan

Organized by
Tokyo Metropolitan Institute of Gerontology
Scientific Program Overview

February 12 (Saturday)
Tokyo Metropolitan Institute of Gerontology

Meeting Room (4th floor)

13:15-13:20 Welcome address
Hideki Ito, Director
Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan

13:20-13:30 Opening remarks
Naoki Maruyama, Vice-director of TMIG

Session I : Chaired by Shogo Endo (TMIG)

13:30-14:05 Harumi Hotta (TMIG)
Modulation of autonomic nerve activity by acupuncture and cutaneous stimulation

14:05-14:40 Ssu-Yuan Chen (National Taiwan University, Taipei, Taiwan)
The Health Promotion Effect and of Tai Chi Chuan and the Application in Older Adults

14:40-14:50 Hunkyung Kim (TMIG)

14:50-15:25 Hiroyuki Arai (Tohoku University, Sendai, Japan)
Kampo Medicine towards fighting Alzheimer's disease

15:25-15:35 Coffee Break

Session II : Chaired by Tamao Endo (TMIG)

15:35-16:10 Renu Wadhwa (Advanced Industrial Science and Technology, Tsukuba, Japan)
Ashwagandha leaf extracts for quality of life: molecular insights into anti-cancer and anti-aging activities
16:10-16:25  Ahmad Pauzi bin Md. Yusof (Masterskill University, Selangor, Malaysia)  
Hypoglycaemic properties of Sambung Nyawa, a Malaysian traditional plant

16:25-17:00  Sang-Chul Park (Seoul National University, Seoul, Korea)  
Reassessment of the value of traditional foods from centenarian study: The case of vitamin B12 mystery

17:00-17:05  Closing Remarks  
Ryutaro Takahashi, Vice-director of TMIG

Taking photo

Chairpersons

Shogo Endo

PI, Lab for Molecular Neurobiology, Tokyo Metropolitan Inst Gerontology  
Ph.D. in Pharmaceutical Sciences (Hokkaido University, 1989)  
Post-doc in Univ Texas Med School (Houston, TX), Duke Univ Med Center (Durham, NC).  
Asst Prof in Univ Houston. Unit Leader in RIKEN Brain Sci Inst. PI in Okinawa Inst of Sci Tech.  
Current position since 2009.  
Area of research- Mechanisms underlying learning & memory, Signal transduction.

Tamao Endo

I graduated from the Faculty of Pharmaceutical Sciences, the University of Tokyo in 1977 and obtained my Ph.D. at the same institution in 1982. I was a postdoctoral fellow at the Baylor College of Medicine, and a research associate in the Institute of Medical Science, the University of Tokyo. Since 1994, I have been the head of Department of Molecular Glycobiology, Research Team for Mechanism of Aging, Tokyo Metropolitan Institute of Gerontology (TMIG).  
We are focusing on post-genomic research in aging and diseases, and my current research interests are glycobiology on aging and dementia.
HIDEKI ITO, M.D., Ph.D.

Director,
Local Independent Administrative Agency
Tokyo Metropolitan Geriatric Hospital and Institute of 
Gerontology

(Education)
Graduated Faculty of Medicine, Kyoto University: 1970
Ph.D, 1978, Tokyo University

(Research Interests)
Geriatric Medicine, Diabetes Mellitus in the Elderly, Dyslipidemia in the Elderly

(History of Profession)
Resident: Okatani Hospital: 1970-1972
Postdoctoral research fellow in Gerontology Research Center, NIA, NIH, USA: 1979-1981
Chief, Endocrinology Section, Tokyo Metropolitan Geriatric Hospital: 1981-1998
Vice Director, Tokyo Metropolitan Tama Geriatric Hospital: 1999-2002
Director, Tokyo Metropolitan Tama Geriatric Hospital: 2002-2006
Director, Tokyo Metropolitan Geriatric Hospital and Institute of Gerontology: 2006-

(Other Activities)
Visiting Professor:
Tokyo Women’s Medical University, School of Medicine
Tokyo Medical and Dental University, School of Medicine

(Committee Member)
Committee of Ministry of Health, Labor and Welfare for Drug and Food
Chairman of Management Committee of Tokyo Metropolitan Association for Medical
Insurance of old-old elderly people
Chairman of Management Committee of National Institute for Longevity Science
Committee of Science Council of Japan for Aging Society

Council Member
Japan Geriatrics Society
Japan Diabetes Society
Japan Atherosclerosis Society

Associate Editor
Geriatrics and Gerontology International: 2001-
Welcome message from Director

Dear Colleagues,

The Second TMIG Workshop on Aging and Aged Society in East Asia will be held on February 12, 2011 in Tokyo. We would like to express our sincere gratitude for all participants from East Asia and Japan.

The theme of this workshop is “Traditional Medicine meets Modern Science”. The presentations that would be made here, either out of research findings or of practical experiences, shall be an immense inspiration to all the participants who wish to further pursue innovative thinking on the possibilities of the use of traditional medicine for the elderly care.

The First TMIG Workshop on Aging and Aged Society in East Asia entitled “Toward Aging Asia: Distinctions and Commonalities among countries” was held in Tokyo on February 6, 2010. Here we made it clear that many countries in East Asia, including Japan, were now facing the same social problem: the coming of the aging society in ever greater speed. Exchanges of scientific research results, practical experiences and discussions are now in need than ever, for us to endure and challenge our future trials to solve a number of problems brought by growing elderly population.

I hope you will enjoy this Workshop to learn “Asian Wisdom”, and I also hope that it would be a good opportunity to build a good human relationship for our future.

Sincerely your

Hideki Ito, M.D., Ph.D
Director
Tokyo Metropolitan Geriatric Hospital and Institute of Gerontology (TMGH-TMIG)
CURRICULUM VITAE

Name: Naoki Maruyama
Date of Birth: June 10, 1948
Place of Birth: Yubari, Hokkaido, Japan

Education
1978: Ph. Degree from Hokkaido University
1973: Graduated from Hokkaido University School of Medicine
1967: Graduated from Yubari-Higashi High School, Yubari, Hokkaido

Professional Training and Employment
2004-present Vice-director, Tokyo Metropolitan Institute of Gerontology
1985-2004 Head, Department of Molecular Pathology, Tokyo Metropolitan Institute of Gerontology
1983-1985 Head of Department of Pathology, Chiba-Rosai Hospital, Ichihara, Chiba
1981-1983 Research Fellow in Scripps Clinic and Research Institute, California, USA
1978-1981 Assistant Professor, Department of Pathology, School of Medicine, Kyoto University

Visiting Professor, Tokyo Medical and Dental University, School of Medicine
Visiting Professor, Tokai University, School of Medicine
Visiting Professor, Hokkaido University, School of Medicine

Societies
Japan Society of for Biomedical Gerontology, Ex-President
Japan Geriatric Society
Japanese Society of Pathology
India Association of Gerontology, Honorary Member
Opening Remarks

It is great honor for me to announce the opening of “the Second Workshop on Aging and Aged Societies in East Asia” organized by Tokyo Metropolitan Institute of Gerontology. We designated the sub-title of this symposium as “Traditional Medicine meets Modern Science”. East-Asian countries have various medical traditions during each long history. Those experiences are beneficial because most of us are educated with modern science. In this workshop we would like to seek unique collaborations between Asian tradition and modern science in the field of gerontology. Such investigations will contribute to the health of elderly people in this century. We wish this workshop is fruitful for your research. Thank you for your participation.

Naoki Maruyama
Harumi Hotta, Ph.D.

Education
1984 Graduate from Biology, Hokkaido University, Japan
1993 Thesis “The age-related and the short term regulatory mechanisms of hormonal secretion”, Hokkaido University

Career
1986- Assistant, Dept. of Physiology, Tokyo Metropolitan Institute of Gerontology
1993- Researcher, Dept. of the Autonomic Nervous System, Tokyo Metropolitan Institute of Gerontology
1994 Visiting Scientist, National Institute on Aging, U.S.A.
1995 Visiting Scientist, Institute of Physiology, Würzburg University, Germany
1996 Senior Researcher, Dept. of the Autonomic Nervous System, Tokyo Metropolitan Institute of Gerontology
2008 Visiting Scientist, Dept. of Physiology & Pharmacology, Downstate Medical Center, State University of New York, U.S.A.
2010 Visiting Scientist, Dept. of Chiropractique, Université of Québec à Trois-Rivières, Canada
2010-now Chief, Dept. of Autonomic Neuroscience, Tokyo Metropolitan Institute of Gerontology, Japan

Major Research Interest
Effect of aging and somatic afferent stimulation on the autonomic nervous system.

Recent Publications
Modulation of Autonomic Nerve Activity by Acupuncture and Cutaneous Stimulation

Harumi Hotta, PhD

Department of Autonomic Neuroscience, Tokyo Metropolitan Institute of Gerontology

The autonomic nervous system is essential for adaptation or modulation of visceral functions during changes in external and internal environments. Dysfunctions of autonomic nerves, for example, innervating the heart can cause serious clinical consequences. It is important to find appropriate treatment for dysfunction of the autonomic nervous system.

Acupuncture has been used clinically to induce analgesia and also to improve visceral autonomic malfunctions. Concerning the neural mechanisms of acupuncture effects on autonomic functions, it has clearly been demonstrated that acupuncture-like stimulation modulates autonomic nerve activity innervating stomach, urinary bladder and adrenal medulla in rats in which emotional factors were eliminated by means of anesthesia (Sato et al., 1992; 1993; 1996). In addition, we have studied the neural mechanisms of acupuncture effect on cardiac functions in anesthetized rats and found that acupuncture-like stimulation applied to various segmental areas of the body decreases heart rate as a consequence of a decrease in tonic discharges of cardiac sympathetic nerve, and suggested that excitation of muscle afferent fibers during the stimulation activates GABAergic inhibitory neurons in the brainstem and inhibits the sympathetic outflow to the heart (Uchida et al., 2007; 2008; 2010).

These results indicate that acupuncture-like stimulation can be understood as one of various somatic afferent stimuli which produce the visceral reflex response. Combining this principle with modern techniques, an attempt to create additional tools to appropriately modulate autonomic nerve activities has started. Recently, a soft elastomer "brush" was developed as a device for pain relief. We examined the effect of gentle cutaneous touch with the apparatus on A- and C-reflexes in the cardiac sympathetic nerve that were induced by electrical stimulation of myelinated A- and unmyelinated C-fibers, respectively, of the tibial nerves in anesthetized rats. We showed that touch applied to hindlimb ipsilateral to the stimulated tibial nerve inhibits the C-reflex, and suggested that touch-induced excitation of low threshold cutaneous mechanoreceptive fibers inhibits nociceptive transmission conveyed by C-primary-afferents, via the release of both opioid and non-opioid inhibitory mediators (Hotta et al., 2010).

Such basic studies will be important to completely elucidate the mechanisms of acupuncture and other stimulation and beneficial to clarify suitable methods to improve autonomic function and prevent its malfunction in the elderly.
Brief Autobiography:

Dr. Ssu-Yuan Chen is currently an Assistant Professor at the Department of Physical Medicine & Rehabilitation, College of Medicine, National Taiwan University, Taipei, Taiwan. Meanwhile, he is also an attending physician at the Department of Physical Medicine & Rehabilitation, National Taiwan University Hospital, Taipei, Taiwan.

After obtaining M.D. degree from the National Taiwan University in 1991, Dr. Chen completed the Physical Medicine & Rehabilitation residency and became the attending physician at the Department of Physical Medicine & Rehabilitation, National Taiwan University Hospital, Taipei, Taiwan in 1995. He completed 6-month Exercise Physiology and Cardiac Rehabilitation research fellowship at Department of Kinesiology, Indiana University, USA, in 1996. He earned his Ph.D. degree from Graduate Institute of Epidemiology, College of Public Health, National Taiwan University in 2004. His major research interests include exercise physiology, cardiac rehabilitation and geriatric rehabilitation.

Present Appointment
1. Assistant Professor, Department of Physical Medicine and Rehabilitation, College of Medicine, National Taiwan University, Taipei, Taiwan
2. Attending Physician, Department of Physical Medicine and Rehabilitation, National Taiwan University Hospital, Taipei, Taiwan

Academic Background:
1. MD from School of Medicine, National Taiwan University, Taipei, Taiwan (1991).
2. PhD from Division of Preventive Medicine, Graduate Institute of Epidemiology, College of Public Health, National Taiwan University, Taipei, Taiwan (2004).

Career Highlight:
1. Aug 2009 – Present: Assistant Professor, Department of Physical Medicine and Rehabilitation, College of Medicine, National Taiwan University, Taipei, Taiwan.
2. Feb 2005 – Jul 2009: Clinical Assistant Professor, Department of Physical Medicine and Rehabilitation, College of Medicine, National Taiwan University, Taipei, Taiwan.
3. Aug 2003 – Jan 2005: Clinical Lecturer, Department of Physical Medicine and Rehabilitation, College of Medicine, National Taiwan University, Taipei, Taiwan.

Professional Affiliation / Membership:
1. Board-Certified Physiatrist, Taiwan Academy of Physical Medicine & Rehabilitation.
2. Geriatrician, the Gerontological Society of Taiwan.
3. Corresponding Member, American Academy of Physical Medicine & Rehabilitation.
4. Member, American College of Sports Medicine.
The Health Promotion Effect of Tai Chi Chuan and the Application in Older Adults

Ssu-Yuan Chen, Ching Lan, Jin-Shin Lai

Department of Physical Medicine and Rehabilitation, National Taiwan University Hospital and National Taiwan University College of Medicine, Taipei, Taiwan

Tai Chi Chuan (TCC) is a Chinese conditioning exercise, and is well-known for its harmonic and coordinated manner. During the practice, diaphragmatic breathing is coordinated with graceful motions to achieve mind tranquility. TCC is practiced in a semi-squat posture, and the exercise intensity can be easily adjusted by controlling the angle of knee.

TCC is beneficial to cardiorespiratory function, muscular strength and flexibility. Long-term practice of TCC can attenuate the age decline in physical function, and hence it is a suitable exercise for elderly individuals.

During the performance of TCC, weight shifting, body rotation, and single-leg standing are repeatedly practiced. Delicate joint control with muscle coordination is important to maintain balance during motions. Therefore, TCC training can improve balance function and reduce the risk of falls in elderly individuals.

TCC benefits microcirculatory function, this change may be partially mediated by enhancement of NO release. We also found that elderly TCC players had higher hyperemic arterial inflows, venous capacity, and venous outflow than their sedentary counterpart. The results indicate that TCC training may delay the age-related decline of vascular function.

Tai Chi training may improve lipid profiles and some cardiovascular risk factors. It may be applied to selected patients with cardiovascular disease (e.g., hypertension, acute myocardial infarction, coronary bypass surgery, or heart failure). Additionally, patients with neurological disease, such as stroke, traumatic brain injury and multiple sclerosis may get benefits from TCC training.

TCC is a low technology exercise and can be easily implemented in the community. TCC has potential benefits in health promotion and suited for healthy individuals as well as patients with chronic disease.

References:

Hunkyung Kim, Ph.D.

Nationality: Korea

Present Occupation: Sub-leader of Research Team for Promoting Independence of the Elderly, Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan.

Mailing Address: Research Team for Promoting Independence of the Elderly, Tokyo Metropolitan Institute of Gerontology.
Tel: +81-3-3964-3241 (Ext. 3060)
Fax: +81-3-3964-2316
E-mail: kimhk@tmig.or.jp

Education:
April 1990 – March 1994
Ph.D (Health and Sport Sciences) was conferred in March 1994. Doctoral Program of Health and Sport Sciences, University of Tsukuba.

Work Experience:
April 2009 - Present : Leader of Prevention of Musculoskeletal Aging, Tokyo Metropolitan Institute of Gerontology
April 2005 - March 2009 : Sub-leader of Research Team for Promoting Independence of the Elderly, Tokyo Metropolitan Institute of Gerontology
November 1998 - March 2005 : Senior Scientist of Department of Epidemiology, Tokyo Metropolitan Institute of Gerontology
June 1996 - October 1999 : Assistant Professor, Institute of Health and Sport Sciences, University of Tsukuba
The effects of heat and steam generating sheet on urinary incontinence in community-dwelling Japanese elderly women

Hunkyung Kim
(Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan)

Abstract

Aim: To determine the effects of heat and steam generating sheet (HSGS) on reducing urine loss in community-dwelling elderly women with urinary incontinence (UI).

Methods: Seventy-three community-dwelling women aged 70 and older with stress, urge, and mixed UI were randomly assigned to the HSGS (n=37) or education group (n=36). The HSGS was placed on the lower back, raising the temperature of the skin surface to 38-40°C and continued to generate heat and steam for over 5 hours. The HSGS group used one sheet per day continuously for 3-months. Urine loss and fitness data were collected at baseline, and after the intervention.

Results: The HSGS group showed significant improvements in muscle strength compared to the education group. The urine loss cure rate was 26.1% in the HSGS group, whereas the education group (2.9%) showed no significant improvement. The HSGS group showed a 25.0% cure rate for stress UI, 13.3% urge UI, and 30.0% mixed UI.

Conclusions: This data suggests that HSGS may be effective for treating urine loss regardless of UI type.
Hiroyuki Arai  
Professor  
Department of Geriatrics and Gerontology,  
Institute of Development,  
Aging and Cancer,  
Tohoku University

Prof. Hiroyuki Arai was born in Maebashi, Gunma, Japan, on June 15, 1955. He received the M.D. degree at Tohoku University, Japan in 1980 followed by receiving doctorate in neuroscience from Tohoku University, Japan, in 1986.

He was an Assistant Professor at Tohoku University, Japan, from April 1994 to January 1999. He was an Associate Professor in Department of Geriatrics and Gerontology, Faculty of Medicine, Tohoku University from February 1999 to September 2003. From October 2003 to December 2007, he was a un-tenured Professor in the Department of Complementary and Alternative Medicine, Faculty of Medicine, Tohoku University. Since January 2008, he becomes a tenured Professor in the Department of Geriatrics and Gerontology, Institute of Development, Aging and Cancer, Tohoku University. His current research interests are clinical research on dementia, biomarker development and molecular imaging of Alzheimer’s disease.

Dr. Arai received Gold Award in Tohoku University School of Medicine in 1995. Dr. Arai received Best Paper Award, Japanese Geriatrics Society, 1997.

Tohoku J. Exp. Med. 2010;221:87-95
At present time, Alzheimer’s disease (AD) drug development is costly and requires a considerable length of time. Currently marketed drugs have been developed for symptomatic treatment of AD and initial clinical trials can be completed in 6 months. Trials designed to slow the rate of decline necessary to demonstrate disease modification require at least one year of treatment or longer to see adequate clinical endpoints. The development of AD drugs for subjects with mild cognitive impairment (MCI) takes longer since these subjects progress more slowly. Current MCI trials require 3-4 years to establish either a sufficient rate of clinical decline or a sufficient number of conversions from MCI to AD to complete a clinical trial. Subjects with MCI are of particular interest since they represent a population at particularly high risk of converting to AD and a population in which secondary prevention trials can be carried out. In the case of normal subjects, conversion to AD would be much slower. These long timeframes are necessary because there is a great deal of variability in clinical endpoints based on cognitive analysis alone. Thus, the development of suitable biomarkers that track the progression of the disease and reflect change in underlying is mandatory. The use of such ideal biomarkers could markedly speed up drug development by providing an earlier signal of drug efficacy.

The clinical diagnosis of AD is occasionally imprecise using consensus criteria for probable AD, but definite AD requires autopsy confirmation. Diagnostic accuracy is far lower at early and pre-symptomatic stages of AD when confusion with other dementias is common. Since therapy is likely to be most effective at symptom onset, early diagnosis of AD is highly desirable before a massive neurodegeneration becomes obvious. Thus, there is a great need for simple biomarkers that substantially aid early diagnosis and track disease progression of AD and MCI. Of currently available biomarkers for AD, imaging and cerebrospinal fluid biomarkers are of great importance. In particular, in Vivo detection of brain amyloid burden using positron emission tomography either by PIB or BF-227 would be attractive. In Japan, Alzheimer’s disease Neuroimaging initiatives (ADNI) led by Prof. Iwatsubo at University of Tokyo has been launched in 2008 in accordance with US- and World-wide ADNI. Over 35 sites have participated in the J-ADNI. The paradigm of AD diagnosis and treatment would be shifted from cognitive-based to biomarker-based framework.
CURRICULUM VITAE

Name
Renu WADHWA,
M. Phil, Ph. D. (India), Ph. D. (Japan)

Date of Birth
6th November 1961

Country of Birth
India

Nationality
Japan

Designation 1
Group Leader
Cell Proliferation Research Group
Biomedical Research Institute
National Institute of Advanced Industrial Science
and Technology (AIST)
1-1-1 Higashi, Tsukuba, Ibaraki 305 8562
JAPAN
E-mail: renu-wadhwa@aist.go.jp
Tel: +81 29 861 9464
Fax: +81 29 861 2900

Designation 2
Adjunct professor
Department of Biochemistry and Molecular Biology
Yonsei University College of Medicine
134 Shinchon-Dong, Seodaemun-Gu
Seoul, Korea

Designation 3
Honorary Scientist,
Children’s Medical Research Institute (CMRI),
University of Sydney, 214 Hawkesbury Road,
Westmead, N. S. W. – 2145, Australia

Designation 4
Visiting fellow,
The Centre for DNA Fingerprinting and Diagnostics
Hyderabad 500 001, India

TERTIARY EDUCATION

M.Phil. 1983 Biology (Gerontology), G. N. D. U.*, India. First Division
Ph. D. 1986 Biology (Gerontology), G. N. D. U.*, India
Ph. D. 1995 Cellular Aging/Biochemistry, Tsukuba University, Japan
C.C.J.P® 1987 G. N. D. U.*, India
I.J.L.C.* 1990 AIST International Center, Tsukuba, Japan
*G.N.D.U. = Guru Nanak Dev University
®C.C.J.P. = Certificate Course in Japanese Language
* I.J.L.C. = Intermediate Japanese language Course
Ashwagandha leaf extracts for quality of life: molecular insights into anti-cancer and anti-aging activities

Renu Wadhwa and Sunil Kaul

National Institute of Advanced Industrial Science & Technology (AIST), Central 4, 1-1-1 Higashi, Tsukuba, Ibaraki 305-8562, Japan
E-mail: renu-wadhwa@aist.go.jp

Herbal extracts are increasingly being appreciated worldwide as safe health reagents. Ashwagandha (Withania somnifera) is a tropical herb that enjoys more than 5000 years of history of use in Indian home medicine ‘Ayurveda’. It is extensively used to promote physical and mental health. However, laboratory evidence of its health promoting activities is lacking. We first identified anti-cancer activity in the alcoholic extract of Ashwagandha leaf extract (i-Extract) and found that only cancer cells were killed with i-Extract, normal cells remained unaffected. In order to identify the anti-cancer components of i-Extract and its cellular targets in cancer cell killing, we used combined chemical and cell-based loss-of-function screenings using human siRNA and randomized ribozyme libraries. We found that the i-Extract and its component ‘withanone’ kills cancer cells by at least two mechanisms involving selective activation of (i) tumor suppressor protein p53 and (ii) ROS signaling in cancer cells. Biochemical and visual assays were conducted to validate the involvement of selected cellular targets. We further demonstrate that the i-Extract and withanone suppress tumor formation and metastasis in vivo by induction of proteins involved in cell adhesion and differentiation. Most importantly, i-Extract and withanone were not only safe for normal human cells, but also increased their health spectrum by protecting them from oxidative stress, a major contributor to age-related pathologies including Parkinson’s and Alzheimer’s disease. The data suggested that the Ashwagandha leaf extract and withanone may serve as effective, cheap and safe reagents for interventions for age-related disorders including cancers and neuro-degeneration that largely affect quality of life in old age.

References
Professor Ahmad Pauzi Bin Md Yusof is currently the Deputy Vice-Chancellor (Academic and Globalization) at Masterskill University College of Health Sciences (MUCH), Cheras, Selangor, Malaysia.

Professor Pauzi obtained his B. Sc Special Honours (Physiology) degree from Sheffield University, UK in 1976, MPhil degree (Physiology & Pharmacology) from Nottingham University, UK in 1980 and Ph D degree (Physiology) from Birmingham University, UK in 1986.

His career began as a lecturer at School of Pharmaceutical Sciences, Universiti Sains Malaysia, Penang, Malaysia in 1980. He was promoted to Associate Professor in 1988 and to full Professor in 1997. In academic administration, he was elected as the Chairman of Physiology in year 1980, Assistant Dean in 1995 and Dean in 1996.

His main research interest is Cardiovascular Neuroscience. He has received a number of appointments and awards in the field. This includes his appointment as (i) Head of Blue Brain Malaysia Project by MOSTI in 2007-2008 to lead the Malaysian research group in collaboration with Blue Brain Project, Brain Mind Institute, Ecole Polytechnique Federale De Lausanne, Lausanne, Switzerland, (ii) “a visiting scholar” at Tokyo Metropolitan Institute of Gerontology, Tokyo in December 1990-May 1991 under the sponsorship of Matsumae Foundation, Japan; (iii) “a visiting Associate Professor” in Washington University, St Louis, USA in April-Nov, 1992 sponsored by Fulbright Foundation and (iv) ‘Research Fellowship’ in University of Leeds, United Kingdom from Jan-October, 2003 sponsored by Biotechnology and Biological Science Research Council, United Kingdom. He also received the John F Perkins Jr Memorial Fellowship award from the American Physiological Society in 1992.
Hypoglycaemic properties of Sambung Nyawa, a Malaysian traditional plant.

Ahmad Pauzi M. Yusof¹, Mun Fei Yam², Mariam Ahmad² and Zurina Hassan²

Masterskill University College of Health Sciences, Jalan Kemacahaya 11, Batu 9, 43200, Cheras, Selangor D.E., Malaysia,¹ and School of Pharmaceutical Sciences, Universiti Sains Malaysia, 11800, Penang, Malaysia². Email: apauzi@gmail.com

Gynura procumbens (Lour.) Merr (family Compositae), known as Sambung Nyawa in Malaysia, is cultivated in Southeast Asia, particularly Malaysia, Indonesia and Thailand, for medicinal purposes. In this study, the plant was studied for its hypoglycaemic properties in chemically induced diabetic rats. A water extract of the plant significantly reduced blood glucose in the diabetic rats following 14 days treatment. There was no effect on insulin level. Further experiments were conducted to investigate the mechanism by which the extract produced its hypoglycaemic action. The effects of the extract on glucose uptake by isolated rat abdominal muscle was studied in the absence and presence of insulin. In both situations, the water extract caused a significant increase in glucose uptake by the tissue (p<0.05 in both). In another group of experiments, the effects of the extract on intestinal glucose absorption was examined using rat everted sac segments. The results showed that whilst acarbose (3 mM) produced a significant reduction, the extract (0.5, 1.0 and 2 mg/ml) had no effect on intestinal glucose absorption. Further experiments were performed to examine if the extract has the capability of reversing the degeneration of insulin-producing β-cells of pancreas after streptozotocin treatment. The number of insulin-positive cells were counted after immunostaining of the cells. The results showed that the plant extract did not produce any improvement in the number of insulin-positive cells. In comparison, metformin increased the number of positive cells by about 20%. In summary, this study showed that the water extract of G. Procumbens (1g/Kg b.wt.) exerted a significant antihyperglycaemic effect in streptozotocin-induced diabetic rats. The hypoglycaemic effect appears to be mediated by improved glucose uptake by peripheral tissues.
Dr. Sang Chul Park has received his M.D. and Ph.D degrees from Seoul National University Medical School and has finished his postdoctorate fellowship at Earl Stadtman's Laboratory, NIH, USA. He is now professor of Biochemistry and Molecular Biology of Seoul National University Medical School, and Director of The Aging and Apoptosis Research Center sponsored by the Ministry of Science and Technology, and Director of WHO collaborating center for Physical Culture and Aging Research for Health Promotion as well as Director of Seoul National University Institute on Aging.

He has contributed a great deal in establishing and promoting many Biomedical societies in Korea, serving as the presidents to Korean Society of Biomedical Gerontology, Federation of Korean Gerontological Societies, Korean Society of Biochemistry and Molecular Biology, Korean Society of Molecular and Cellular Biology, and International Association of Biomedical Gerontology.

He has led many researches for metabolic and genetic regulatory system in relation with cancer and aging. Through his works, the possibility of functional recovery of the senescent cells through restoration of receptor-mediated endocytosis as well as the inevitable relation of aging and cancer via apoptosis has been suggested. Moreover, he has recently proposed the new hypothesis, the gate theory of aging, suggesting the restore principle for the aging control in contrast to the replace principle based on the deterministic view on aging. In addition to his academic achievement, he has been the pioneer to evoke the social concerns for aging problem in Korea. And his institute has initiated the Korean longitudinal study for aging and Centenarian study with multidisciplinary collaborative teams. Throughout his endeavors, he focuses on developing the concept of Healthy, Dandy and Confident Aging for Functional Longevity. For his services, he has been awarded with many academic prizes and the Medal of Honor (Moran Jang) by President of Korea. He served as the editor for Mechanism of Ageing and Development and also the regional editor for Journal of Cancer Research and Clinical Oncology.
Reassessment of the value of traditional foods from centenarian study: A case of vitamin B12 mystery

Sang Chul Park

Department of Biochemistry and Molecular Biology, Aging and Apoptosis Research Center, Institute on Aging, Seoul National University, Seoul 110-799, Korea

In order to explain human longevity, many variables that affect healthy aging should be assessed in comparative context. Among the multitude of variables that affect healthy aging, the unique features of the traditional vegetable oriented dietary pattern of Korean centenarians have attracted our attention. Of particular interest is how centenarians overcame the effect of nutritional imbalances due to limited variability in the traditional semi-vegetarian diet. We paid special attention to dietary intake, food sources, and blood levels of vitamin B\textsubscript{12}, since its major sources are the animal foods lacking in the traditional diet and it has a variety of physiological roles for hematopoietic functions and in a broad spectrum of neurological functions. However, surprisingly we found that the prevalence of centenarians with low serum vitamin B\textsubscript{12} was not particularly higher, compared with that of centenarians from western nations who consume more animal foods. Moreover, the average serum vitamin B\textsubscript{12} level of centenarians was within normal limits. Therefore, we assumed that there may be undiscovered valuable sources for vitamin B\textsubscript{12} in the traditional foods commonly consumed by centenarians in Korea. As we hypothesized, recent screening of vitamin B\textsubscript{12} content in Korean foods has revealed that some traditional soybean-fermented foods, such as Doenjang and Chunggukjang, and seaweeds, such as laver and sea lettuce, contained considerable amounts of vitamin B\textsubscript{12}. It was suggested that these traditional foods as well as their methods of preparation such as the fermentation process, may be compensating for an expected nutritional imbalance in the predominantly vegetable-oriented dietary pattern and therefore, may be a contributing factor for healthy aging. Taken together, it can be concluded that the mystery of human longevity in the traditional semi-vegetarian dietary pattern could be partly explained in terms of compensation by the fermentation process of the food materials, which would contribute to the human longevity especially in the oriental zone, including Korea, China and Japan.
Ryutaro Takahashi, MD, PhD
Vice Director
Tokyo Metropolitan Institute of Gerontology

**Education**
1984 Ph.D. (Doctorate of Medical Science), Graduate School of Medicine, Tokyo University
1976 M.D. Kyoto University School of Medicine

**Experience**
2009-Present Vice Director, Tokyo Metropolitan Institute of Gerontology
2000-2009 Research Chief, Human Care Research Team, Tokyo Metropolitan Institute of Gerontology
1996-2000 Research Chief, Nursing Research Section, Tokyo Metropolitan Institute of Gerontology
1994-1996 Chief, Rehabilitation Unit, Tokyo Metropolitan Geriatric Hospital, Tokyo
1992-1994 Director, Uguisuzawa Town Clinic, Miyagi
1991-1992 Chief, Internal Medicine, Sawauchi Village Hospital, Iwate
1989-1991 Chief, Internal Medicine, Tokyo Metropolitan Geriatric Hospital, Tokyo
1987-1989 Staff, Endocrinological Section, Tokyo Metropolitan Geriatric Hospital, Tokyo
1985-1987 Visiting Scientist, Efamol Research Institute, Nova Scotia, Canada
1977-1985 Staff, Internal Medicine, Tokyo Metropolitan Geriatric Hospital, Tokyo
1976-1977 Resident, Geriatric Medicine, Kyoto University Hospital, Kyoto

**Affiliations, Memberships and Committees**
Japan Geriatrics Society
Gerontological Society of America
Japan Socio-gerontological Society
Japanese Society of Internal Medicine
Japan Academy of Nursing Science
Japanese Society for the Study of Social Welfare
Japanese Society for Dementia Care
History of TMIG

April 1972    Tokyo Metropolitan Institute of Gerontology (TMIG) was formally opened.

October 1981   TMIG was reorganized and became a private foundation to promote active and creative research.

April 2002    TMIG and a foundation for regional welfare for senior citizens and the disabled were merged in the Tokyo Metropolitan Foundation for Research on Aging and Promotion of Human Welfare. The research group system was induced.

April 2009    Tokyo Metropolitan Institute of Gerontology (TMIG) and Tokyo Metropolitan Geriatric Hospital (TMGH) were merged and established new organization as Tokyo Metropolitan Geriatric Hospital and Institute of Gerontology (TMGHIG).

Prehistory of TMIG

The origin of our institute goes up to Edo era (AD 1603 – 1868). In 1722 the eighth shogun Tokugawa Yoshimune established the clinic for poor citizen of Edo (previous name of Tokyo). His grandson, Matsudaira Sadanobu encouraged this hospital and proposed the foundation to support the citizen in case of emergency. Huge funds were donated by wealthy citizen.

After the Meiji revolution (1868) Tokyo Metropolitan Government reorganized the above facilities as Yoikuin with the fund. Shibusawa Eiichi (called as father of Japanese capitalism) established and administrated Yoikuin until his death. This new facilities aimed to rescue and support poor people and disabled persons. After the World War II this facility restarted as hospital etc. In 1972 the new organization started above mentioned with long lasting history in the background. By medicine and research we have been always contributing to the weak people including elderly. We are so proud of our history and missions.
New Facility 2013 Spring