

## Asian Perspectives on America's "National Blueprint: Increasing Physical Activity Among Adults Age 50 and Older"

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### 1. Background

The International Year of Older Persons - 1999 focused world attention on the many challenges society faces as a result of the remarkable aging of the population. In Japan, as well as in the United States, the realization that the nation is aging rapidly has led some to voice concerns about the implications for society as a whole. As a practical matter, the percentage of Japanese adults aged 65 years or over in the total population has been increasing. This percentage was only 5.3% in 1955, 6.3% in 1965, 7.9% in 1975, 10.3% in 1985, and 14.5% in 1995. It is projected to increase to 19.6%, 25.2%, 27.5%, 29.0%, and 32.0% in the years 2005, 2015, 2025, 2035, and 2045, respectively (Institute of Population Problems, 1997; Ohno et al., 2000). These demographic changes will inevitably result in increases in older adults with various types of chronic diseases or disabling conditions as well as those with a high level of fitness.

In addition, automation and other technologies have contributed to a dramatic decline in physical activity at work and home. Fortunately, however, many older people are able to lead active, healthy, productive, and independent lives well into their 80s and 90s. Physical activity and exercise have been proposed as a key factor for preserving and enhancing both the quantity and quality of life in old age (Tanaka, 2000). In other words, physical inactivity has increasingly been recognized as an important risk factor associated with morbidity and mortality in adults (CDCP, 1994; Healthy Japan 21, Ohta et al., 2000; U.S. Department of Health and Human Services,

1996). Despite abundant evidence on the life benefits associated with physical activity, many people still choose not to exercise. It has been estimated that only 12 to 22% of U.S. adults engage in leisure time physical activity at recommended levels, and 24 to 60% have been reported to be very sedentary and unfit (Caspersen et al., 1994). These figures are quite similar to those reported by the Ibaraki Health Science Center (2000). According to a Report by the U.S. Surgeon General (1996), approximately 38% of the U.S. population aged 55 and older is sedentary. In Japan, the percentage seems to be similar for people in their 50s and somewhat lower for those in their 60s and 70s (Ibaraki Health Science Center, 2000; Harada et al., 1994). Another research survey (Ohta et al., 2000) indicates that at least 50% of senior adults do not exercise regularly and that more than 40% walk only infrequently.

### 2. The Objective of This Article

With the lack of physical activity among the U.S. population in mind, the Robert Wood Johnson Foundation (RWJF) hosted the "Technical Experts Working Group Meeting on Physical Activity and Mid-life and Older Adults" on April 4 and 5, 2000. Representatives of the American Association of Retired Persons (AARP), the American College of Sports Medicine, the American Geriatrics Society, the Centers for Disease Control and Prevention, the National Institute on Aging, and the RWJF formed a steering committee and developed an agenda for a "Blueprint Conference." The conference was held on October

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30-31, 2000. A document encouraging American adults aged 50 and older to increase physical activity was developed.

However, little is known about individual motivation and determination to adhere to programs of physical activity. This article focuses on the mission, goals, and structure of "America's National Blueprint" for increasing the physical activity of adults aged 50 and older and on the discussion of future perspectives on the importance of physical activity. Specifically, this article presents possibilities for reducing sedentary behavior as a beginning for increasing physical activity. An objective of this article is that it will help facilitate the development of better health policies for the societies of both the East and the West.

### 3. Summary of America's "National Blueprint"

Regular physical activity and exercise unquestionably promote dramatic benefits for health and life for people of almost all ages and abilities. Typically, physical activity can provide opportunities for adding years of active independent life. Furthermore, activity can reduce disability and contribute to the quality of life for middle-aged and older individuals. However, equally clear is the fact that most people are free to be sedentary. With this in mind, on May 1, 2001, America's National Blueprint, entitled "Increasing Physical Activity Among Adults Aged 50 and Older," was developed as a guide for organizations, associations, and agencies interested in increasing the physical activity of America's aging population. This major national planning document was actually released by a coalition of national organizations (Chodzko-Zajko, 2001). The entire plan synthesizes input from more than 65 experts, representing 48 organizations with expertise in health, medicine, social and behavioral sciences, epidemiology, gerontology/geriatrics, clinical science, public policy, marketing, medical systems, community organizations, and environmental issues (JAPA, S3, 2001).

The vision of the National Blueprint developers was for a society in which all people aged 50 and older enjoy health and a quality of life that is enhanced by regular physical activity. The developers of the

Blueprint wanted to encourage physical activity for the entire aging population. This document outlines three steps for achieving this vision. They are as follows: (1) to provide a background on the issues related to the physical activity and health of Americans aged 50 and older, (2) to overcome barriers to increasing physical activity among the aging population, with respect to research, home, community, workplace, medical systems, public policy, and advocacy, and (3) to look toward and beyond 2010 for actions that can and should be carried out by organizations, associations, and agencies.

The Blueprint outlines the roles of organizations as follows:

Organizations need to explore new models and avenues for the development, integration, and implementation of physical activity initiatives. They might include working with transportation organizations and community planners to assure that communities look for solutions that will enable citizens to remain or become more physically active. People should be able to safely walk to stores, banks, post offices, parks, pedestrian malls, fitness centers, and other community facilities.

The National Blueprint can be obtained from the Robert Wood Johnson Foundation, Princeton, NJ, or other organizations, associations, and agencies that participated in the development of the document. *The Journal of Aging and Physical Activity* also published the entire document in a supplement to the Journal (JAPA, May 2001). Selected responses by experts are also published in the *Journal* (Eakin 2001, Atienza 2001, Linnan and Marcus 2001, Stewart 2001).

### 4. Contributing Organizations and Individuals for the Development of the National Blueprint

The following individuals and organizations contributed to the development of the National Blueprint.

#### 4-1 Acknowledgments

The following organizations have provided input into the development of this document: the American Association of Retired Persons (AARP), the American College of Sports Medicine, the American Geriatrics

Society, the Centers for Disease Control and Prevention, the National Institute on Aging, the Robert Wood Johnson Foundation.

Other organizations that participated in the Blueprint Conference and/or provided review and input into the document were as follows: the Alliance of Community Health Plans, America Walks, the American Academy of Family Physicians, and the American Academy of Nurse Practitioners, American Cancer Society, American Heart Association, American Occupational Therapy Association, American Red Cross, American Society on Aging, Arthritis Foundation, Assisted Living Foundation of America, Association for Work Site Health Promotion, Barrington & Chappell, Bayer Institute for Health Care Communications, Center for Livable Communities/American Institute of Architects, Fifty Plus Fitness Association, Gerontological Society of America, Health Canada, Fitness Active Living Unit, National Association for Health and Fitness, National Association of Area Agencies on Aging, National Center for Bicycling and Walking, National Center on Physical Activity and Disability, National Council on the Aging, National Highway Traffic Safety Administration, National Hispanic Council on Aging, National Recreation and Parks Association, National Senior Games Association, Palo Alto Medical Foundation, Partnership for Prevention, President's Council on Physical Fitness and Sports, Research America, Sporting Goods Manufacturers Association, Stanford University School of Medicine, University of California at San Francisco, University of North Carolina School of Public Health, US Department of Health and Human Services Office on Women's Health and the National Aeronautics and Space Administration, US Department of Veterans Affairs, Visiting Nurse Association of America, Walking Magazine, YWCA, plus International Health, Racquet and Sportsclub Association, and finally American Alliance for Health, Physical Education, Recreation and Dance and the American Association for Active Lifestyles and Fitness.

In addition, special thanks were expressed to many scientists who contributed to the Blueprint by preparing and/or presenting background papers that contributed

to the development of this plan. Furthermore, the many individuals who made presentations at the Blueprint Conference: Increasing Physical Activity Among Adults Aged 50 and Older were acknowledged.

#### 4-2 Moving toward and beyond 2010: Turning strategies into action

The following steps will help place this document into action:

1. Organizations should identify the strategies that they are already addressing or will address and collaborate with other groups that share an interest in the same strategies. Organizations should make efforts to work with existing coalitions and coordinate with other groups and organizations. Participating organizations should also identify and involve organizations that are not working on this issue but could play a major supportive role.
2. Organizations, associations, and agencies working collaboratively should focus on activities that they can reasonably expect to accomplish.
3. Organizations need to undertake detailed tactical planning to delineate the specific actions that are needed to achieve the strategies.
4. Organizations need to allocate money and people to help support coalition and collaborative efforts.
5. Health organizations and government agencies must encourage the exchange and dissemination of the best practices. These groups must establish systems to accomplish this.
6. Evaluation should be a key tool in all implementation steps. In some cases, evaluation can be objective and based on measurable objectives. In other cases, evaluation will be subjective.

This Blueprint is designed to support an increase of physical activity among people aged 50 and above and ultimately to improve the health and well being of all Americans. The key to success lies in developing and channeling resources and working collaboratively to distribute the evidence of the benefits of physical activity as widely as possible and promote this type of activity nationwide.

## 5. Perspectives on the National Blueprint

First of all, it should be acknowledged that the National Blueprint summarizes well the essential points that U.S. society currently has to focus and act on. This is really what middle-aged and older adults who are living (and will live) in the first quarter of the 21st century need. Success in increasing physical activity at any age stage for successful active aging is quite difficult, but we must continue facing the challenge enthusiastically. Implementation of some Eastern ideas may help facilitate further expansion of the Blueprint throughout the U.S. and eventually all over the world. Following are our specific comments on the "National Blueprint."

## 6. Specific Perspectives on the National Blueprint

### 6-1 Practical Use of Lay Leaders

It is our strong belief that health plans in each local community should be promoted among the people living there. "For the people by the people" is a slogan that usually works well. It is not essential for people who are committed to health promotion in a given community to have higher academic degrees or qualifications such as M.D. or Ph.D. or be a qualified nurse, dietitian, or health fitness instructor. In Japan and perhaps in some other countries as well, there are many lay leaders who do as well or better than qualified instructors in their communities.

In Aizu Hongo, Fukushima prefecture, Japan, we have been advocating the increase of the number of lay leaders (i.e., health-promotion instructors who do not have any professional credentials) who work mainly for older populations. The chronological age of the 14 lay leaders ranges from 53 to 75 (average age: 66.2 years), while their functional age averages 62 years. All of them were recruited from the community where they live. The total population of the community under examination (i.e., Aizu Hongo-machi) is about 6,700, and more than one-fifth is in the 65+ age range.

According to our recent empirical investigation, a high percentage of the 65+ population in each community seems to feel very positively about working in the field of community health promotion as a fitness

or diet instruction leader. We have observed that they lead older people as appropriately as young but inexperienced fitness leaders with numerous credentials. These leaders have been instructing the 60+ population in the community for one and half years. Only one out of the original 14 leaders has dropped out, due mainly to poor physical condition. They work well with older adults by teaching and reinforcing specific skills that we have trained them with in advance. The skills consist of calisthenics, leg flexion in a standing position, walking on a balancing bar, rotation of shoulder joints, and general stretching. At present, the lay leaders have the ability to increase awareness about the importance of physical activity to improve the health of Japanese people aged 60 and older with the appropriate aid of a mass-market communication campaign by the community government.

### 6-2 An Effective Advocacy Strategy

An effective advocacy strategy that helps promote health policies within each community is greatly needed. University professors, research assistants, and graduate students can act as ambassadors, particularly during the challenging months of the initial training period. They serve as resources for information and assistance on health and fitness. In order to lead people to sound behavioral modifications, we avoid phrases such as "enhance your health and quality of life" and focus on objectives such as "recover your health and maintain your quality of life." This is simply because enhancement or improvement seems to be a non-achievable assignment for the majority of older citizens. If health and wellness programs rely on well-trained allied health professionals, then many average citizens may tend to lose their own willpower (strong desire or mental vitality) to achieve an independent, self-motivated way of living. An advocacy strategy that cooperates with or recruits non-qualified but capable health-fitness leaders should be implemented in the new initiatives. Whether one has an exercise leader's license is not so important for actual leading. Whether one is competent to help people modify inadequate health behaviors is much more essential than having the license. Orientals tend to accept this

sort of idea more than Westerners do.

There are large inter-individual differences in the motivation to engage in physical activity. Some health professionals (physicians, nurses, and other allied health professionals) do not exercise at all, even though they advocate the necessity of exercise or physical activity. We encourage health care trainers as well as city officers and company employers who are in charge of advocating health promotion to be more physically active in order to serve as role models for patients and the general public. This sort of advocacy/policy strategy may also be very effective.

### 6-3 Workplace Strategy

Generally speaking, employers are well motivated to address employee health issues. This is simply because they pay a large proportion of the health care costs when employees or their dependents become ill (Pelletier, 1996). On the belief that physically active employees accrue many health and social benefits by reducing their risk to a wide range of physical and mental health conditions, increasing the amount of physical activity has been encouraged by employers. However, the workplace is a complicated setting where employee health is influenced in multidimensional ways (Linnan and Marcus, 2001). Kapio and Sarna (1994) investigated occupational disability in former Finnish athletes and found remarkably decreased coronary artery disease and cerebrovascular and respiratory morbidity in the athletes when compared with control persons. Furthermore, it was found that sustained and vigorous physical activity during early adulthood may defer the onset of disability and prevent premature death, resulting in extending the occupationally active life span. It is a general understanding that worksite health promotion consists of any planned combination of educational, political, regulatory, and organizational efforts to develop and have a positive influence on the health of employed individuals (U.S. Dept. Health and Human Services, 2000; "Healthy People 2010").

A strategy that provides employers with tax incentives for providing opportunities for physical activities to their employees would not work well in some countries, and especially, in Japan. It may not

even work well in the U.S. An advantage can be seen in that such a strategy may allow the employer to pay less tax. However, the most important aspect of the program is to bring the public to an awareness of the value of regular physical activity and how it contributes in terms of pleasure, fun, and satisfaction to general health and quality of life. It is of overriding importance today that people find life worth living. Older Japanese adults place a high value on pleasure, happiness, and self-efficiency, and they recognize the contribution that physical fitness makes toward these ends. The value of money should be separated from the idea of successful active aging, particularly among Asians, who have values that are different from those held by Western people. Many Asians do not value money as highly as Westerners because of their traditional and cultural values or the teachings of Confucius. Consequently, an evidence-based approach is theoretically or conceptually fine, but it may not work well. This is simply because many things that scientists believe as evidence have a shortage as true evidence. We think this idea of a humanistic approach rather than scientific one needs to be more expanded in near future.

### 6-4 Promotion of Physical Activity Through Mass Media

Little is known about the complex factors that help motivate adults to begin and sustain physical activities. Similarly, little is known about the physical, psychological, and socio-environmental barriers that discourage older adults from adopting and maintaining physically active lifestyles. Above all, we feel that psychological barriers have a relatively high impact in almost all industrialized countries, and particularly in Asian countries because of the Confucian idea. More controlled and systematic research is needed to examine the factors that influence people to participate in physical activities in well-controlled and systematic manner (Chodzko-Zajko, 2000). Currently, the mass media are doing an effective job of promoting the values of physical activity, and they emphasize the benefits of an active rather than a sedentary lifestyle.

When individuals with chronic illnesses and those who have experienced acute myocardial infarction,

hemiparetic stroke, or severe injury participate in regular exercise programs, they are in a position to inspire others. When the mass media focus on such scenes as the chronically ill walking with their grandchildren, other people might be inspired to change their habits and become more active. Older adults participating in strenuous activities, such as marathons, are also inspirational. Public relation efforts touting the value of physical activities have been undertaken by members of the Tsukuba Health Fitness Research Group and the physicians at the Higashi Toride Hospital, Toride, Ibaraki, Japan. Many newspapers (national and local) and radio stations have regularly reported on physical fitness activities over the past decade. Several television stations, such as NHK Educational, TBS, and TV Tokyo, have interviewed members of our organization and shown scenes of older adults with ischemic heart disease dancing in a fitness room at a hospital for promotional purposes. Currently, there are a number of commercial exercise videos available to the public. They have become popular in Japan and the United States. Some of the exercise videos or computerized programs, particularly those providing dance instruction, illustrate steps which become progressively complex. These programs are available for various kinds of music. Such activities are expected to enhance mobility, balance, and muscular endurance, which ultimately helps people maintain their independence. Research currently underway at the University of Tsukuba is examining the adaptation of this kind of exercise for the home with the objective to help motivate adults in mid-life or older to become more physically active.

More emphasis should be placed on the combined values of exercise and diet. It is unrealistic for most individuals with chronic illnesses to expect significantly large benefits from physical activities. Most researchers investigating physical activities want their findings from experiments and epidemiological studies to be incorporated into health policies. However, it is more important to help people gain a real sense of satisfaction from their participation in physical activities. The public may not need any more laboratory data to convince them of the value of

exercise. Scientists involved in exercise physiology should be making an all-out effort to inform the public about the potential harm of unhealthy lifestyles. The mass media can be extremely influential in these efforts.

## 6-5 Target Population

The National Blueprint reads as follows: "The population aged 50 and older is extremely diverse. When organizations develop, implement, and evaluate physical activity programs and initiatives for people in mid-life and older, they will need to consider age, gender, income, race, ethnic background, geography, education, and marital status. For example, this age group encompasses everyone, from people who run two or three marathons a year to very frail elderly who are confined to wheelchairs" (p. 19). Because of this, there are limitations to the kinds of programs that can be introduced for the promotion of health.

Fifty and older may be a range of age that is too wide. Most people retire around age 60, and some retire after age 65. People in the range of 50-59 years of age or 50 to mid-60s have different interests, lifestyles, leisure pursuits, and needs for continuing education and medical services from people in the 75+ range. The number of healthy people can be increased remarkably by encouraging those with sedentary habits to become physically active. As mentioned in the Blueprint, however, there is a great variance in the general population's rate of decrease in physical function and fitness (p.19). In the near future, the number of older adults who continue working beyond the age of 70 will probably increase, depending on their ability to work, functional fitness, and mental vitality. Therefore, it may be better to address motivational strategies in a tier-life system, i.e., by each age segment and by each functional fitness level.

In Japan, many people in mid-life consider 70 to be quite old. Messages that target people in mid-life should vary in content from those that target older adults. It might be better to categorize people according to functional fitness (Shigematsu and Tanaka, 2000; Tanaka et al., 2000) or body weight than by chronological age (e.g., 65+, 75+, and 85+ segments).

In addition, the recognition that a few people will not benefit from exercise and physical activity should be generally accepted. People in risky categories might cause themselves more harm than good with exercise, particularly those with knee disorders, low-back pain, or uncontrolled angina. This means such people are quite likely to experience a negative effect before they achieve life or health benefits from physical activity. It may be necessary to include a specific statement indicating the importance of individual supervision of such people by allied health professionals. Inclusion of a statement regarding clear recognition of self-responsibility in case of sudden death associated with stroke or cardiac episode is greatly encouraged. This important social policy will be discussed later.

#### 6-6 Need for Consideration of Special Populations

In almost all countries, attention is being given to health benefits associated with regular physical activity. ACSM (1997) published a textbook titled *Exercise Management for Persons with Chronic Diseases and Disabilities*. The authors indicate that the following patients may exercise: those with metabolic diseases, such as hyperlipidemia, diabetes, and obesity, as well as those with cardiovascular diseases, including those who have experienced myocardial infarction, coronary artery bypass grafting, angioplasty, angina, silent ischemia, hypertension, and cardiac transplant, and those with pulmonary disease. Patients with orthopedic diseases and disabilities, such as arthritis, low-back pain, and osteoporosis, are also encouraged to exercise. The reason that physical activity is encouraged even in special populations is very clear. Physical activity is associated with many health benefits (Blair et al., 1992) including longevity (Paffenbarger et al., 1986; Pekkanen et al., 1987), decreased risk of coronary heart disease (Powell et al., 1987), stroke (Wannamethee and Shaper, 1992), type-2 diabetes (Helmrich et al., 1991; Manson et al., 1992), and increased physical fitness.

However, even though the majority of people benefit from exercise, there are some people who do not. Some of those who have severe health problems, such as arthritis, diabetes mellitus, myocardial

infarction, unstable angina pectoris, and abnormal ECG, might experience the negative effects of exercise and physical activity with even moderate intensity. Appropriate and specific instructions need to be developed for people in high-risk categories. Those with severe health problems and some older adults are not likely to walk in neighborhoods without sidewalks because of the danger entailed. Therefore, the National Blueprint says that, in order to implement sound health policies, organizations have to reach beyond their comfort zone. During the first decade of the 21st Century, a variety of approaches to health promotion should be tested, taking into account characteristics that are specific to each home, work site, community, county, or city. Then, probably at some point between 2010 and 2015, the best or better strategies, policies, and guidelines should be selected as acceptable standards.

#### 6-7 The Role of Self-responsibility

The National Blueprint addresses the necessity for establishing a strategic direction. To increase physical activity among the aging population, strategies should be established for the following: 1) research, 2) home/community, 3) workplace, 4) medical systems, and 5) public policy. Items 1) and 4) may not be important in Japan, at least during the initiation period, which may last 5-6 years. It is very difficult to specify which interventions are most beneficial for some segments of the 50+ population (active older adults, frail elderly, homebound, or disabled) because of the extremely large diversity even within one segment. If the government participation is too large, then the individual resolve of the communities might be diminished. People in industrialized countries should take more responsibility for their own health and fitness. Each country and community should place a greater emphasis on health management and disease prevention. Also, a specific statement on individual supervision of special populations by allied health professionals needs to be included.

Each community would be expected to develop programs that would encourage individuals to alter behavior. Furthermore, each community would need to make changes that would support individual

behaviors (Stewart, 2001). Communities would need to adopt and disseminate programs that have been successful for aging adults. The expense of developing, implementing, and sustaining such programs needs to be paid by communities and their residents. The concept of an individual being responsible for his own health and fitness should be stressed by national governments down to the local level. The ACSM guidelines for exercise training for the elderly state: "*Because of their low functional status and high incidence of chronic disease, there is no segment of the population that can benefit more from exercise than the elderly.*" (p. 14).

#### 6-8 Decentralization of a New Health Policy

In general, most people are less likely to adopt a habit of regular physical activity. The fact is that most people prefer to be sedentary. However, individuals find many reasons specific to them that reinforce the value of physical activity (Epstein and Roemmich, 2001). Therefore, each community should focus on finding the best way to increase physical activity among its population from the viewpoint of the particular social, cultural, and natural characteristics of the geographic area in question. Older adults in Japan are likely to enjoy activities that are less organized and less strenuous, such as calisthenics (15.2%), walking (13.0%), dancing (10.8%), gateball (10.8%), golf (9.4%), hiking (8.1%), swimming (6.3%), ground golf (4.5%), mountaineering (2.7%), and jogging (2.2%) (Harada et al., 1994).

In order to accelerate community health promotion strategies, the development of decentralized local policies is indispensable. The education of local officers is also important. Bottom-up planning is much more palatable to the general public than a top-down approach for the implementation of strategies that promote good health. The possibilities of implementing holistic philosophies into the strategy should be investigated. For example, some people might gain some satisfaction from early morning physical activities such as cleaning Shinto shrines, Buddhist temples, or Christian churches. A better psychological well-being can be brought about to community residents through such volunteer activities.

If medical professionals, such as physicians, nurses, nurse practitioners, and other allied health professionals, are recruited, the budget increases, and a controlled health promotion system develops, which is not necessarily accepted by the majority of Japanese people (as well as most Americans). Implementation of an administrative reform is a prerequisite for health promotion in each community.

#### 7. Concluding Remarks

A growing body of research documents the benefits of physical activity. Physical activity extends active independent life by years and reduces the occurrence of disabilities. America's National Blueprint says that, although the scientific evidence is clear, there is no national action program. We are in nearly total agreement with the goals stated in America's National Blueprint. Communities should provide adults aged 50 and above with multiple opportunities for active aging. A major prerequisite for active aging is the life-long maintenance of programs of physical activity. To assist in the maintenance of physically active lifestyles, it is essential that policies and exercise programs accommodate the preferences and interests of older adults and that a variety of options be made available. Ideally, such exercise programs should be prepared for each age segment and for each fitness level. Furthermore, the exercise programs should be widely incorporated into the existing community structures. Worksite health promotion involves any planned combination of educational, political, regulatory, and organization efforts that positively influence the health of employed individuals. Employers should provide environments that are conducive to exercise. We assume that community support exists for physical activity initiatives in the workplace. Local administration must be conducted in a manner that encourages general citizens to pursue voluntary (self-imposed) health management. The concept of individual self-responsibility for fitness and health and accompanying health policies should be developed throughout the nation, particularly when a Japanese version similar to America's National Blueprint is developed.

A strategy that leads to more people exercising regularly needs to be developed. In order to increase long-term adherence to programs of physical activity, the pleasures (fun) of exercise should be publicized along with its importance for the maintenance of health. Expressing the benefits of exercise and fitness in non-medical terms encourages behavioral change. In Japan, the impact of the mass media is very strong. Many Japanese begin to understand the importance of physical activity as a result of what they see, hear, and read on TV, radio, and magazines. Some interventions such as exercise habituation, food restriction, and medications are very effective for publication of research papers, but we must consider how to best maximize the individual life benefits. In the U.S., logic based on scientific evidence plays a very important role in promoting change. We believe that logic is a less-important element in promoting exercise among the general public in Japan. Our findings indicated that pleasure and fun are the most important factors for encouraging Japanese people to increase their physical activities.

#### 8. Research Suggestions for Future Challenges

- Demonstrate that lay leaders are sometimes better advocates for fitness and health than health professionals. It seems to be quite easy.
- The evidence for this opinion is not clear cut; however, it appears to be the case.
- The importance of physical activity has to be clarified not only from a scientific standpoint but also from a perceptual or spiritual point of view. It needs to be perceived by one's body perceptually or spiritually. We give exercising older adults a bit of advice with regard to hearing the voices (messages) from the muscles, joints, and heart.

#### Acknowledgments

This manuscript was written on the advice of Wojtek J. Chodzko-Zajko, the University of Illinois at Urbana-Champaign, who is the editor-in-chief for the *Journal of Aging and Physical Activity*. Parts of this manuscript were partially presented at the 2001 Eagle Creek Colloquium in Illinois on June 26-27, 2001. Special thanks is given to George J. Holland, professor

emeritus in the Kinesiology Department, California State University, Northridge, U.S.A. He is visiting professor at University of Tsukuba and is associated with the Center for Tsukuba Advanced Research Alliance (TARA). Note that the senior author of this article Kiyoji Tanaka is project leader for the Human Beings in the Ecosystem. The TARA project is named "Development of overall QOL (quality of life) index for older adults." This research was supported by Tanaka Project of TARA, University of Tsukuba.

#### References

- Chodzko-Zajko WJ, DiPietro L, McAuley E, Ory M, Kroes G, Kumar V, and Tanaka K (2001): Reaction to a National Blueprint on Physical Activity and Aging. Think Tank Colloquium at Eagle Creek State Park, Illinois
- Atienza AA: Home-based physical activity programs for middle-aged and older adults: summary of empirical research. *JAPA* 9, S38-S58, 2001
- Blair SN, Kohl HW, Gordon NF, and Paffenbarger RS: How much physical activity is good for health? *Ann Rev Public Health* 13, 99-126, 1992.
- Caspersen, C.J., Merritt, R.K., and Stephens, T. International physical activity patterns: a methodological perspective. In: *Advances in Exercise Adherence*, Dishman, R.K. (Ed.). Champaign, IL: Human Kinetics Publishers, 1994, pp. 73-110.
- Centers for disease Control and Prevention. BRFSS summary prevalence report. Atlanta: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 1994, pp. 1-15.
- Chodzko-Zajko WJ: Introduction. *JAPA* 9, S1, 2001.
- Chodzko-Zajko WJ: A future role for technology in promoting physically active lifestyles in older adults. *JAPA* 9, 87-90, 2001.
- Epstein and Roemmich 2001
- Eakin E: Promoting physical activity among middle-aged and older adults in health care settings. *JAPA* 9, S29-S37, 2001.
- Helmrich SP, Ragland DR, Leung RW, and Paffenbarger RS: Physical activity and reduced occurrence of non-

- insulin-dependent diabetes mellitus. *New Eng J Med* 325, 147-152, 1991.
- 茨城県 & Ibaraki Health Science Center. ライフサイクルモニタリング調査 . 中間報告書 , 第7集 . 平成12年3月
  - Institute of Population Problems, Japanese Ministry of Health and Welfare. *Population projection for Japan 1995-2035*. Tokyo: Kousaido, 1997.
  - Kapiro J and Sarna S: Decreased risk of occupational disability among former elite male athletes. *JAPA* 2, 115-126, 1994.
  - Linnan LA and Marcus B: Worksite-based physical activity programs and older adults: current status and priorities for the future. *JAPA* 9, S59-S70, 2001.
  - Manson JE, Nathan DM, Krolewski AS, Stampfer MJ, Willett WC, and Hennekens CH: A prospective study of exercise and incidence of diabetes among US male physicians. *JAMA* 268, 63-67, 1992.
  - Ohno Y, Aoki R, Tamakoshi A, Kawamura T, Wakai K, Hashimoto S, Kawakami N, and Nagai M: Successful aging and social activity in older Japanese adults. *JAPA* 8, 129-139, 2000.
  - Pelletier KR: A review and analysis of the health and cost-effective outcome studies of comprehensive health promotion and disease prevention programs at the worksite: 1993-1995 update. *Am J Health Prom* 10, 380-388, 1996.
  - Ohta T, Tabata I, and Mochizuki Y: Japanese National Physical Activity and Health Promotion Guidelines. *JAPA* 8, 178-193, 2000.
  - Paffenbarger RS, Hyde RT, Wing AL, and Hsieh CC: Physical activity, all-cause mortality, and longevity of college alumni. *New Eng J Med* 314, 605-163, 1986.
  - Pekkanen J, Marti B, Nissinen A, Tuomilehto J, Punsar S, and Karvonen MJ: Reduction of premature mortality by high physical activity: A 20-year follow-up of middle-aged Finnish men. *Lancet* I, 1473-1477, 1987.
  - Powell KE, Thompson PD, Caspersen CJ, and Kendrick JS: Physical activity and the incidence of coronary heart disease. *Ann Rev Public health* 8, 253-287, 1987.
  - Shigematsu, R., and Tanaka, K. Age scale for assessing functional fitness in older Japanese ambulatory women. *Aging* 12, 256-263, 2000.
  - Stewart AL: Community-based physical activity programs for adults age 50 and older. *JAPA* 9, S71-S91, 2001.
  - Tanaka, K.: Successful aging in Japan: An introduction to the Japan Special Edition. *Journal of Aging and Physical Activity* 7, 95-97, 2000.
  - Tanaka, K., Shigematsu, R., Nakagaichi, M., Kim, H., and Takeshima, N. The relationship between functional fitness and coronary heart disease risk factors in older Japanese adults. *Journal of Aging and Physical Activity* 7, 162-174, 2000.
  - The Robert Wood Johnson Foundation: Section 1 Background. *JAPA* 9, S5-S12, 2001.
  - The Robert Wood Johnson Foundation: Section 2 Developing solutions to increase physical activity. *JAPA* 9, S13-S24, 2001.
  - The Robert Wood Johnson Foundation: Section 3 Moving toward and beyond 2010: turning strategies into action. *JAPA* 9, S25-S28, 2001.
  - United States Dept. of Health and Human Services. *Physical Activity and Health: A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Center for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion, 1996, pp. 1-278.
  - United States Dept. of Health and Human Services, Office of Disease Prevention and Health Promotion. 1999 National Worksite Health Promotion Survey. Association of Worksite Health Promotion, William Mercer, Inc. (order reprints from AWHP@www.awhp.org)
  - United States Dept. of Health and Human Services, Office of Disease Prevention and Health Promotion. *Healthy People 2010* (2nd ed.). (Stock No. 017-001-00547-9). U.S. Gov. Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954.
  - Wannamethee G and Shaper AG: Physical activity and stroke in British middle aged men. *Br Med J* 304, 597-601, 1992.