Harriet T. Benninghouse
Andria G. Rosset
Editors

Women and Aging

New Research

Nova Biomedical

NOVA

WOMEN AND AGING: NEW RESEARCH

HARRIET T. BENNINGHOUSE
AND
ANDRIA G. ROSSET
EDITORS

Nova Biomedical Books
New York

Copyright © 2009 by Nova Science Publishers, Inc.

All rights reserved. No part of this book may be reproduced, stored in a retrieval system or transmitted in any form or by any means: electronic, electrostatic, magnetic, tape, mechanical photocopying, recording or otherwise without the written permission of the Publisher.

For permission to use material from this book please contact us:
Telephone 631-231-7269; Fax 631-231-8175
Web Site: http://www.novapublishers.com

NOTICE TO THE READER

The Publisher has taken reasonable care in the preparation of this book, but makes no expressed or implied warranty of any kind and assumes no responsibility for any errors or omissions. No liability is assumed for incidental or consequential damages in connection with or arising out of information contained in this book. The Publisher shall not be liable for any special, consequential, or exemplary damages resulting, in whole or in part, from the readers' use of, or reliance upon, this material. Any parts of this book based on government reports are so indicated and copyright is claimed for those parts to the extent applicable to compilations of such works.

Independent verification should be sought for any data, advice or recommendations contained in this book. In addition, no responsibility is assumed by the publisher for any injury and/or damage to persons or property arising from any methods, products, instructions, ideas or otherwise contained in this publication.

This publication is designed to provide accurate and authoritative information with regard to the subject matter covered herein. It is sold with the clear understanding that the Publisher is not engaged in rendering legal or any other professional services. If legal or any other expert assistance is required, the services of a competent person should be sought. FROM A DECLARATION OF PARTICIPANTS JOINTLY ADOPTED BY A COMMITTEE OF THE AMERICAN BAR ASSOCIATION AND A COMMITTEE OF PUBLISHERS.

Library of Congress Cataloging-in-Publication Data

Women and aging : new research / Harriet T. Benninghouse and Andria G. Rosset (editors).
p. ; cm.
Includes bibliographical references and index.
ISBN 978-1-60456-575-1 (hardcover)
1. Older women--Health and hygiene. 2. Older women--Medical care. I. Benninghouse, Harriet T. II. Rosset, Andria G.
[DNLM: 1. Aging--physiology. 2. Women's Health. 3. Aged--psychology. WT 104 W872 2008]
RA564.85.W625 2008
618.97--dc22 2008012136

Published by Nova Science Publishers, Inc. † New York

Preface

In the past 20 years, the number of women over 65 has grown enormously. A woman alive at the end of the 20th century can expect to live 27 years longer than her 19th century ancestor. And among the "oldest old" - those aged 85 and over - women outnumber men 2-to-1. This dramatic decrease in mortality rates and increase in life expectancy has created a need for quality care and services for older women. As women live longer, they become significant consumers of health care and human services as they face chronic health problems, losses encountered in later years, and impoverishment. This new book presents recent medical research on important topics dealing with women and aging.

Chapter 1 - Alcohol use disorders among women are rising. Over the past two decades, heavy drinking among women has more than tripled (Brettingham, 2005) and gender differences in the prevalence of alcohol related-problems diminished significantly (Keyes et al., in press). This worrisome trend is expected to exacerbate drinking problems women experience with aging in a major way (Beresford, 1995). As the baby-boom cohort grows into retirement age, alcohol use disorders among elderly women may become a serious public health problem that is currently considered by few political, social and medical agents (Gfroerer et al., 2003).

Although the scope of the problem is not entirely clear at this point, there is reason to believe that it will probably exceed the mere expected increase in the volume of patients. Mounting evidence suggests that untreated alcohol use disorders carry a considerably more devastating impact on women than men. Specifically, women with alcohol use disorders tend to exhibit what is described in the medical literature as the "telescoping of symptoms" (Gomberg, 1995). Women progress faster than men from social to problem-drinking despite significantly lower alcohol consumption (Piazza et al., 1989). Gender differences in alcohol-related medical complications appear to follow the same pattern: women tend to develop physical problems over a considerably shorter drinking period (Blow, 2000). For example, hypertension, anemia, malnutrition, liver disease, obesity, vascular problems, cancer and gastrointestinal hemorrhage develop in women with shorter drinking histories than men (Ashley et al., 1977; Gavaler, 1982; Schukit et al., 1995). Collectively, these findings suggest that heavy drinking may be much more harmful for women's health than previously believed.

Chapter 2 - Malnutrition is still a widespread, unrecognised and underestimated, health problem in hospital as well as in many other settings. Consistently affecting patient's

outcome (e.g. infection, pressure ulcers, poor wound healing and impaired muscle and respiratory function, increased length of stay and rehabilitation time), it is frequently a life threatening condition in the old patient. In this view, routine nutritional assessment would allow to provide adequate treatment and to obtain outcome improvement. Unfortunately, reliable evaluation of nutritional status frequently requires a multidisciplinary approach. In order to partly overcome these limitations, a number of simplified screening tools is now available. Among those, the Geriatric Nutritional Risk Index has been recently proposed and the use appears promising. Preliminary evaluations have demonstrated its feasibility in and suitability to different settings. Some studies have also underscored the prognostic value of this index that requires a minimal participation of the patient. Accordingly, the authors want to provide an overview of existing literature, highlighting its points of strength and suggesting future potential application. In this regard, a brief summary of well-validated nutritional screening tools currently in use will be also provided, aiming to give the clinicians useful weapons to fight ("recognize to treat") the war against what has been pointed out as one of the major "health system scandals".

Chapter 3 - Gender work segregation may be evidenced also in the different exposure of the two sexes to those working constraints which are considered more difficult with age, as the possibility to move from adverse work conditions to less demanding work plays un important role in the health related selection. Several studies carried out at European or national level, found a declining trend of physically demanding work in men, suggesting that men had more possibility to moving to less physically demanding jobs and that favourable differences between older and younger workers were more remarkable for older men than for older women as regards poor work postures and repetitive work. As to working under time pressure, this constraint had increased for both sexes, but the increase had been greatest among women. The high working rhythms are commonly associated with musculoskeletal pain, stress and poor perceived health.

This study was mainly aimed at analysing gender differences in work-related health problems, focusing on relationships between the difficult in coping with work under time pressure with advancing age and some health complaints, such as musculoskeletal symptoms and self-reported health.

A population of 1195 Italian workers employed in different productive sectors and divided into 5 age cohorts were interviewed regarding the difficulty, with age, of coping with high working rhythms. The relationships between working under time pressure and the presence of musculoskeletal complaints (back pain and multiple complaints) and poor health self-assessment were then explored.

Female workers were more exposed to repetitive work with tight deadlines and to time pressure. Analyzing the occupational exposure by cohorts, a decreasing exposure frequency may be observed for men in the oldest cohorts, while the opposite was observed for women, who complained about these constraints as particularly difficult with ageing.

Working under time pressure appeared to be the least tolerated constraint for women, who had a significantly higher Odds Ratio than men in all cohorts of age, with a greatest risk in the 52 years cohort. The high working rhythms were associated with poor health, both for musculoskeletal pain and perceived health, especially when the exposure resulted particularly difficult to bear with ageing, but in different ways for the two sexes.

此为试读,需要完整PDF请访问: www.ertongbook.com

In women the interaction between repetitive work with high deadlines and musculoskeletal complaints, showed a statistically significantly association both for upper limbs and for multiple musculoskeletal symptoms. The multivariate analysis showed an increasing risk with age for women, while in men repetitive work with tight deadlines was associated with a poorly perceived health. When analyzing interactions between repetitive work with tight deadlines and poor health-assessment, a progressive increased risk was observed from the 42 to 52 year cohorts for men, and in the 47 year-cohort for women.

The possibility for men in avoiding the more demanding or difficult work can be hypothesized, such as more autonomy and control over their work situation, while for women it seems that the possibility of avoiding those working constraints which are especially poorly tolerated with ageing is less probable.

Chapter 4 - Objectives: To examine variations in physician-patient communication patterns as a function of patient age and the gender of both patient and physician. Design: Cross-sectional 2 x 2 x 2 factorial ANOVAs of communication content, skill, and style in audiotaped medical visits. Participants: Eighteen family practice and internal medicine physicians (9 male) and 79 of their patients (47 male). Measurements: The Multi-Dimensional Interaction Analysis System (MDIAS) was used by trained judges; demographic data were also collected from patients and their physicians. Results: Physicians' interactions with older patients were more biomedically-oriented than were those with younger patients ($F(1,64)=5.57$, $p=.02$) and female physicians raised more biomedical topics than did male physicians ($F(1,64)=6.70$, $p=.01$). Female physicians did not raise more psychosocial topics with patients ($F(1,62)=0.01$, $p=.95$) nor did patients discuss more psychosocial topics with female doctors ($F(1,62)=1.94$, $p=.17$). Female physicians were not rated as having better interview skills, and with regard to psychosocial topics, there was a trend for male physicians to be rated marginally higher ($F(1,64)=3.32$, $p=.07$). Compared to their interactions with younger patients, male physicians' interviewing skills with their older patients were also judged to be better than females' whereas female physicians' interviewing skills were better with younger patients ($F(1,64)=3.78$, $P=.06$). This finding represents a notable effect size of almost a half standard deviation ($r=.23$, $d=.47$). Conclusion: The common finding of gender differences in interviewing skills was moderated by age of the patient such that the female physician advantage occurred with younger patients, and the male physician advantage occurred with older patients.

Chapter 5 - Cardiovascular disease is the main cause of death in Western world. At present mortality from cardiovascular disease (heart disease plus stroke) in the US is higher in both sexes than mortality from all kinds of cancer together. Until recently women have been under-represented in clinical trials and conclusions drawn from men have been applied to women. It is important, therefore, to know the differences between both sexes. In general the heart is more resistant to disease in women, who suffer from cardiovascular disease later in life than men. However, stroke is more frequent in women than in men, principally beyond 85 years. Prevention of cardiovascular disease can avoid the main cause of death and disability in elderly women. There are differences between women's and men's hearts that could explain the later onset of ischemic heart disease in women, as well as the greater survival of women vs. men in case of heart failure. Although cardiovascular risk factors are basically the same in men and women, some of them are more frequent in men and others

have different impact in each sex. For example, diabetes mellitus, low levels of HDL-cholestererol and hypertriglyceridemia are more harmful for women than for men. Menopause is a specific risk factor for women. Estrogens protect women from coronary heart disease before the menopause, and this is probably one of the reasons why women's heart is stronger than men's heart. However, the role of hormone replacement therapy after the menopause for cardiovascular prevention is still controversial. The majority of prospective studies have included women that started this therapy long after the menopause, when their arteries were already affected by atherosclerosis. In this case estrogens may be harmful because they can make the plaques more vulnerable. New trials on hormone replacement therapy in perimenopausal women are still ongoing to solve the debate.

Chapter 6 - Aging, a natural process in human life, begins at conception, continues with growth and development and finishes with dysfunction of various organs towards the end of life. Coronary heart disease (CHD) is one of the most common cardiovascular diseases, leading to death in women and is responsible for more deaths each year than all other diseases together. The incidence of myocardial infarction (MI) in women, although lower than in men, increases dramatically after the menopause. This increase is at least partly due to aging, although men also have a progressive increase in MI with age. The role of the menopause itself is not very clear. The evaluation of chest pain, the main symptom of CHD, is less straightforward in women than in men, because the language used to describe symptoms differs between the sexes. In fact, symptoms in women are slightly different from those in men. Uptill now, medical data published in literature was based on research done on male patients. However, there are numerous differences in the epidemiology and primary manifestation of CHD in women and men. In addition, the diagnosis of angina pectoris in women is more difficult than in men for several reasons, which are mentioned later in this chapter. The clinical usefulness of some non-invasive tests is lower in women than in men. A number of studies have shown gender-based differences in frequency rates of coronary angiography and revascularization, even among those with acute MI. It should be stressed that women with angina are much more likely than men to have normal coronary arteries on angiography. On the other hand, the risk of complications after coronary angiography in women is higher than in men. This may explain why physicians fail to refer women for subsequent invasive tests. Several case reports included in this paper show the difficulties in diagnosis and treatment of women with CHD.

In conclusion, it could be said that difficulties in diagnosis and limited data on the treatment of CHD in women, have led to a situation in which women with CHD often remain under-investigated and under-treated.

Chapter 7 - Background. Participation of women in studies of acute coronary syndromes, including acute ST-elevation myocardial infarction (MI) as well as unstable angina and/or non-ST-elevation MI is about 30-40% and is remaing constant during last 20 years. It is well known that in ST-elevation MI women, who are older than men and are mostly less agressively treated, experience worse outcome than men. The results of studies of unstable angina and/or non-ST-elevation MI also demonstrated that women are significantly older and with significantly more comorbidities. However, the results of the studies are controvesial, regarding the short- and long term prognosis. Some studies demonstarted significantly increased risk of 30-day and six-month adverse outcomes in women, when compared to men

in spite of their similar treatments, but others similar outcomes with similar treatments in spite of older age.

Conclusions. In this review article the results of studies, regarding the outcomes of women compared to men in acute coronary syndromes are discussed, especially the use of treatments, including coronary interventions, misuse or errors in medical treatments, as well as future perspectives in women with coronary artery disease in the new millenium.

Chapter 8 - Introduction: The presence of electrophysiological abnormalities of the atrial myocardium with increasing age could explain the differences in the genesis of atrial fibrillation in women with paroxysmal atrial fibrillation (PAF). Aging could influence not only the atrial response to premature atrial depolarizations but also the morphology of atrial electrograms.

Material and Methods: Programmed atrial stimulation with single extrastimulus was performed in 102 female patients, 48 of them had normal sinus node function and did not have PAF (Group I), and 54 of them had PAF, idiopathic or associated to other arrhythmias (Group II). Programmed atrial stimulation was performed from the right atrial appendage at double diastolic threshold with stimulus duration of 2 ms with a computarized cardiac stimulator.

Results: The incidence of induction of repetitive atrial firing (68% vs 36%; $p<0.02$), fragmented atrial activity (85% vs 47%; $p<0.005$), and sustained PAF (43% vs 5%; $p<0.001$) was significantly higher in Group II than in Group I. The zone of induction of repetitive atrial firing (34±33 vs 10±19 ms; $p<0.005$), fragmented atrial activity (49±40 vs 12±15 ms; $p<0.001$), and interatrial conduction delay (51±32 vs 26±28 ms; $p<0.02$) was significantly wider in Group II than in Group I. The induction rate and the respective zones of these electrophysiologic parameters had a significantly positive correlation with age in Group II.

Conclusions: Our results shed light on the mechanisms responsible for developing atrial fibrillation in aging women. The electrophysiological indicators of augmented atrial vulnerability are significantly altered with increasing age in women with paroxysmal atrial fibrillation. There is a significantly greater predisposition to atrial fibrillation in aging women because they develop a significantly greater augmented atrial vulnerability with increasing age.

Chapter 9 - Background: As physiologic changes in human sympathetic nervous system may be associated with age- and gender-differences in cardiovascular diseases, it is very important to assess physiological changes in the cardiac-specific sympathetic nervous system in human. Although there have been no appropriate means to measure it, ^{123}I-metaiodobenzylguanidine (MIBG) imaging can provide information on cardiac sympathetic nerve endings. The aim of this study was to assess the age- and gender- differences in global cardiac sympathetic nervous system in normal subjects.

Methods and Results: One hundred and sixty-three subjects (74 men, 79 women, and 10 women with surgical menopause), age range 40-89 yr, who had normal cardiac catheterization and did not have any other diseases affecting the autonomic nervous system were included in the study. All study subjects performed MIBG imaging. The delayed H/M ratio had a significant gender-difference ($p<0.03$). Both genders had a progressive decrease in the delayed H/M ratio with advancing age ($p<0.0001$ for both). In contrast, females (50-59 yr) was significantly higher delayed H/M ratio than males with the same ages ($p<0.001$).

After the age of 60, the delayed H/M ratio in females similar to males progressively decreased with ageing. As for the washout rate, both genders had a significantly progressive increase with advancing age ($p < 0.0001$ for both). In gender, washout rates in females accelerate more quickly than those in males after age of 50 years, although there was no significant gender-difference. In addition, there was a significant decrease in the delayed H/M ratio in 10 females with surgical menopause than in 15 age-matched females with surgical menopause. Conclusion; Cardiac sympathetic innervation (norepinephrine content) had gender- and age-related changes in contrast that cardiac sympathetic activity might have an age-related change alone. In addition, menstruation can influence in cardiac sympathetic function. Such information might help them to unravel the contribution of cardiac sympathetic nervous system to age- and gender-disease interactions and furthermore, its modification may be useful to prevent cardiovascular diseases.

Chapter 10 - Background: Angina pectoris is the result of myocardial ischemia caused by an imbalance between myocardial blood supply and oxygen demand. In women, often than men, coronary heart disease may manifest with atypical presentations. Beside conventional, psychosocial factors are especially expressed in our country as risk factors which come to disease of coronary arteries, separately in women. Diagnosis this conditions in emergency department (ED) at such circumstances where electrocardiogram (ECG) is only one exact method that may show myocardial ischemia is very difficult. Methods and Results: In undeveloped community of municipal Zivinice living about 70.000 people. About 20% of them are refuges from East Bosnia, mainly women and younger people. The authors analyzed data in 2007th from Emergency Department (ED) of Health center Zivinice. ED in this year accepted 32.570 or about 46,5% population of this community, respectively 89 patients per day. The authors investigate number of patients who had diagnosis of angina pectoris, symptoms, risk factors and co morbidity, and entirely part of female. During time of investigation, number of patients with conditions and risk factors to originate of CHD, and symptoms who may be seen in angina pectoris, were 6.937 or 21,3%. Almost two-thirds of these patients was female with average age 61,5 (±11,2) years. During period of research in ED were registered 910 women with diagnosis of stable angina pectoris. Even in 275 of these women electrocardiogram was performed first time in their life on the occasion of an examination. In eleven of all them, without significant ECG changes, biomarkers of cardiac damage (troponin and creatin kynaze) were elevated and they were hospitalized under diagnoses of acute coronary syndrome. At an average, refuge women become angina pectoris for 5,4 years before domicile women. The most frequent three risk factors were menopause, hypertension and psychosocial factors; smoking was relatively rare risk factor. Leadings symptoms in these women were weakness and breathless, frequently than palpitation, and in only one woman angina pectoris was presented with chest pain. At more of two-third of female patients with established diagnosis of angina pectoris leadings symptoms were atypical, in difference than men where atypical symptoms had been less at one-third of them. Conclusions: Beside of presence of conventional risk factors, big role for origin to angina pectoris have psychosocial factors whose especially are expressed in women that refuge from Eastern Bosnian. Possibility of establishing of missed diagnoses of angina pectoris and inappropriate medical decision impartially is high, and their percentage in such circumstances is approximately about 15%. The authors need adequately approach to reorganization of

emergency medical services in sense to quality and quantify, together with strongly support of local community and state.

Chapter 11 - Sarcopenia, defined as the involuntary loss of skeletal muscle that occurs with advancing age, is an important correlate of physical impairment and disability in older persons. The development of sarcopenia is not an isolated process, but rather a vicious cycle whereas loss in muscle mass is accompanied by a parallel gain in fat mass, potentially leading to the extreme condition of "sarcopenic obesity". Sarcopenia has been indicated as one of the potential contributors to the pathophysiological modifications responsible for the development of frailty. Frailty is defined as "a syndrome of decreased resiliency and reserves, in which a mutually exacerbating cycle of declines across multiple systems results in negative energy balance, sarcopenia, and diminished strength and tolerance for exertion". This wasting syndrome is characterized by a high vulnerability for adverse health outcomes (including falls, hospitalization, physical disability, and mortality). The age-related muscle mass loss is (at least partly) responsible for several features commonly considered as components of the frailty syndrome, such as weakness, fatigue, low physical performance, and sedentariness. It has been reported that women present a higher risk of developing the frailty syndrome compared to men. At the basis of this higher risk, gender differences have been identified in several biological mechanisms synergistically acting and potentially promoting the onset of frailty. The greater muscle mass and strength of men compared to women may provide protection against reaching the clinically relevant thresholds of weakness and sarcopenia. Neuroendocrine and hormonal factors (such as the hyperactivation of the hypothalamo-pituitary-adrenocortical axis in response to stressors, or the deeper age-related decline in insulin growth factor-1 concentrations) may provide additional potential explanations to the higher risk of sarcopenia (and frailty) experienced by women. Moreover, estrogen and testosterone differently influence the immune system and the inflammatory status, representing a further biological mechanism responsible for the gender differences reported in the process leading to frailty.

Current evidence suggests that physical exercise represents the best intervention to prevent the onset of several health-related negative events (including frailty). Significant improvements in muscle mass and strength have been reported from physical exercise intervention studies, independently of age. In particular women, who tend to present lower levels of physical activity compared to men, should strongly be encouraged in engaging in regular physical exercise.

Aims of the present chapter are: 1) To review and discuss current scientific evidence on the biological pathways associated with the age-related body composition changes (in particular, sarcopenia); 2) To describe the biological mechanisms associated with the frailty syndrome, taking in particular account the gender factor; and 3) To present evidence on possible interventions aimed at the prevention of the onset of sarcopenia and frailty in the aging women.

Chapter 12 - Ageing is characterised by a deterioration in musculoskeletal structure and function; specifically a decrease in muscle strength, a reduction in skeletal muscle mass, and a loss of bone density. These changes greatly affect the lives of elderly individuals through reducing functional performance necessary for independent living and contribute to frailty, falls, fragility fractures, and physical disability. Although men are affected by such changes,

women are at much greater risk of experiencing poor musculoskeletal health and physical disability with advancing age due to the large, rapid change in the level of serum sex hormones that occurs during menopause. Resistance training has been demonstrated to be a safe and highly effective exercise intervention to improve or maintain musculoskeletal integrity and prevent or delay physical disability in the elderly. This chapter reviews the age-associated changes in muscle strength, skeletal muscle mass, and bone density and the effect of resistance training in attenuating or reversing such detrimental changes in postmenopausal women. In addition, the hormonal mechanisms contributing to the decline musculoskeletal health and the hormonal response to resistance training in postmenopausal women will also be discussed. A common finding among studies is that skeletal muscle in late postmenopausal women retains a high level of residual plasticity and demonstrates significant increases in both size and strength when exposed to a chronic resistance training stimulus. In contrast, evidence to support a large effect of resistance training on bone density in late postmenopausal women is lacking. However, resistance training does appear to substantially attenuate bone loss postmenopause, which may assist to preserve skeletal integrity in ageing women. Although available research supports the use of resistance training to enhance and/or maintain musculoskeletal health and prevent disability in late postmenopausal women, data pertaining to the effect of resistance training muscle strength, skeletal muscle mass, and bone density in early postmenopausal women is limited. This is surprising given the rapid rate decline in musculoskeletal integrity during the early postmenopausal period. Future research should attempt to assess the extent to which resistance training is capability of attenuating the hormonal cascade that occurs during the menopausal transition and effect of such changes on indices of musculoskeletal health in middle-aged women.

Chapter 13 - Menopause is accompanied by the onset of endothelial dysfunction, and this is considered to be a major mechanism of cardiovascular events. The changing hormonologic environment seems to be the key mechanism leading to endothelial dysfunction in menopause. Epidemiological studies showed a higher incidence of cardiovascular events in age-matched postmenopausal women compared with premenopausal women. The therapeutic approach to postmenopausal women includes lifestyle modifications as well as pharmacological interventions primarily targeting hypertension and insulin resistance or metabolic syndrome. Angiotensin-coverting enzyme inhibitors (ACEi), angiotensin II receptor blockers and statins have been proven effective in improving endothelial function in this group of patients. To time, estrogen therapy seems to exert some beneficial action towards the restoration of vascular homeostasis when administered early after menopause. However, it is still premature to state which is the most efficient therapeutic strategy targeting vascular endothelium in postmenopausal women.

Chapter 14 - Hip or proximal femoral fracture is a leading cause of morbidity and mortality in the elderly. The burden of this disease is particularly a problem in elderly women as the incidence of hip fracture is higher in women than in men. This is not unexpected given women are at an increased risk for postmenopausal osteoporosis. Fall, another important determinant of hip fracture, doesn't seem to discriminate sexes in advanced ages, although there is some suggestion of an increased incidence in women in less advanced ages. In addition to osteoporosis and falls, many other clinical risk factors for hip fracture have been identified. Many are potentially modifiable and may be effective in primary and secondary

此为试读,需要完整PDF请访问: www.ertongbook.com

prevention of hip fractures along with specific drug therapy for osteoporosis. Validated pharmacological agents for the treatment of osteoporosis include anti-resorptive, anabolic and immunological agents. This article reviews the current evidence on hip fracture risk, management and prevention in elderly women.

Chapter 15 - Aging-related bone fractures are a major concern for the health care of women. In addition to the continuous loss of bone mass, age-related changes in bone quality are another major cause of such fractures. Bone quality is largely determined by the micro- and ultrastructural properties of the tissue. Thus, understanding age-related changes in micro- and ultrastructural properties of bone is necessary to elucidate the underlying mechanisms of increased fragility in aging bone. The objective of this review is to address recent progress in the research on the age-related changes in the micro- and ultrastructure of women's bone, and their relationships with age-related bone fractures in women. Briefly, the current understanding of micro- and ultrastructure of bone and their relationship with the quality of bone is discussed first. Then, a review of recent work on the age-related changes in the micro- and ultrastructure of women's bone is provided. Finally, the possible aging mechanisms leading to micro- and ultrastructural changes in bone are summarized.

Chapter 16 - Purpose: To obtain an important foresight on the way to future preventive care measures corresponding to gender and age.

Methods: This study is composed of lateral and longitudinal studies to comprehend gender differences 1) in the rate, 2) in body and mind function, and 3) with time-course changes, of the elderly in need of Long-Term Care (LTC) based on the population of the categorized age groups.

Results: The population ratio of the elderly in need of LTC based on gender showed as follows: 5% both males and females between 65-74 years of age, 16% males and 22% females between 75-84 years of age and 45% males and 60% females aged 85 years and over. Additionally, the population ratio of females aged 75 years and over who require LTC was significantly higher.

According to 7,118 elderly dependents in need of care in categorized age groups concerning the 33 items of the following categories, "Movement and balance", "Complex movement", "Conditions requiring special assistance", "Conditions requiring assistance with Activities of Daily Living (ADL) / Instrumental ADL (IADL)" and "Communication and cognition", males between 65-74 years of age rated higher. Significant differences in all 33 items except for "Sitting up in bed", "Maintaining a sitting position", "Remembering date of birth", "Remembering own name" and "Stating the current location" in males were found. On the other hand, in the case of those aged 85 and over, the female dependent rate showed higher in all 33 items except for "Putting on and taking off a jacket" and "Using the telephone", which indicated the same rate as for males. In all 33 items except for "Sitting up in bed", "Swallowing", "Drinking water", "Putting on and taking off a jacket/pants", "Taking medication", "Using the telephone" and "Responding to instructions", significant differences in females were found.

The rate of female dependents aged 85 and over comes in order as follows: "Standing up from a sitting position" is 90%, which is the highest; "Standing on one foot" (90%); "Sitting up in bed", "Walking", "Using the telephone" (78%); "Nail cutting" (76%); "Washing the body" (75%); "Financial management" (74%); "Taking medication" and "Decision making"

(72%). Basic ADL except the mentioned items above were: "Urination" (59%), "Putting on and taking off a jacket/pants" (55-56%), "Transferring to another location" (49%) and "Feeding" (34%).

The two year longitudinal study showed little gender difference. However, the following decline in function in males was observed: "Maintaining a sitting position", "Transferring to another location", "Urination", "Defecation" and "Stating the current location" aged 65-74; "Oral hygiene" aged 75-84; "Walking" aged 85 and over.

Conclusions: No gender differences in the percentage of the elderly in need of LTC aged 65-74 was indicated, whereas body and mind function of the male elderly in need of LTC decreased significantly in many items. In addition, some items displayed an easy decline in time-course changes. With respect to those aged 85 and over, the rate of body and mind function of the elderly in need of LTC decreases significantly. No gender differences in time-course changes, except for "Walking", were confirmed.

Chapter 17 - In this chapter the authors explored age and gender effects in several spatial abilities. Spatial cognition is not a unitary function but may be better thought of as a multi-component system that includes a wide range of abilities. For this reason research dealing with the broad topic of individual differences in this domain should adopt tasks tapping distinct aspects. In particular, the metric vs. non metric nature of spatial information and the level of activity and strategic control that the spatial processes require may determine selective patterns of age and gender differences. A continuum can be outlined from perceptually-driven spatial tasks to memory-based passive tasks to memory-based active tasks. In our research, elderly and young people, half males and half females, were compared on spatial tasks consistent with this assumption. The authors devised tasks measuring perceptual metric discrimination, passive metric memory, memory for spatio-temporal sequences (Corsi Block Tapping Test) and mental rotation. The results showed age decrements in tasks requiring active manipulation and strategic control (mental rotation and Corsi test), in line with the limited-resources view of aged cognition. Further, a male advantage emerged in more active and metric tasks, i.e. mental rotation and memory for distance. The results are discussed in relation to the passive/active distinction in Working Memory processes and to differences in spatial strategies.

Chapter 18 - Stereotype threat is the decrease in the performance of a group when the negative stereotypes about the group's performance are activated. On cognitive tasks, women perform worse when gender stereotypes are activated and older adults perform worse when age stereotypes are activated. One particular group that may experience higher levels of threat is older women, due to the operation of both age and gender stereotypes. This chapter provides examples from the literature on how stereotypes about age and gender can affect cognitive performance. Conditions under which stereotype threat is experienced and conditions under which there is release from stereotype threat are analyzed. Directions for future research as well as suggestions to combat stereotype threat are discussed.

Chapter 19 - Alzheimer's disease (AD) is the most common cause for dementia amongst the elderly, while vascular dementia (VD) represents the second major one. There is some evidence that women are at higher risk of developing AD than men. Unfortunately, the ethiopathogentic implication of this biological factor is still unclear. It is possible that the differences in the sex effect between dementia and AD are most likely explained by the fact

that men are at a higher risk than women for VD. On the other hand, it has been recognized that the presence of a vascular burden (atherosclerosis and inflammation) could be considered a possible cofactor for all dementia syndromes.

In this respect, attention has been focused on the presence of a longitudinal link with middle-age adiposity and preliminary investigations have suggested a predominant role for body fat distribution, particularly for intra-abdominal fat accumulation.

An increase in total and central obesity usually occurs in older women, especially after the menopause transition and related estrogens deprivation. This has been linked with a number of vascular factors, such as metabolic complications (insulin resistance, dyslipidemia, hypertension) and increased inflammatory background. Along with this, it has also been suggested that lack of estrogen or other hormonal changes in postmenopausal women, either by themselves or in association with other factors, account for the increased risk.

In this background of considerations, changes in body composition and fat distribution occurring with estrogen deprivation could reasonably contribute the development of cognitive decline and their role probably deserve further investigations.

Chapter 20 - Although physicians and historians have catalogued the symptoms consistent with posttraumatic stress disorder (PTSD) for hundreds of years, PTSD is a relatively new addition to the diagnostic nomenclature. Since its inclusion in the Diagnostic and Statistical Manual of Mental Disorders-III (DSM-III) in 1980, PTSD has become a topic of wide popular and scientific interest. PTSD among older women is greatly understudied, however. In some of the few studies that have been conducted on older women, it has been found that older women are more likely than older men to develop PTSD in the wake of trauma. Older women are less likely to seek treatment and receive adequate care compared to younger women because of the stigma that older females are more likely to attach to mental health services, physicians reluctance to ask older women about a history of trauma, and the financial barriers and accessibility issues that women are more likely to face in old age. Further, older women with PTSD report significantly greater numbers of chronic physical health conditions compared to women with depression or neither illness; and, among adults with PTSD, women are more likely than men to suffer from a number of chronic illnesses, including hypertension, and diabetes. These findings suggest that the etiology, prognosis and best treatment of PTSD may differ between older women and older men. Thus, it is important that researchers focus on identifying and managing PTSD in this population. In this chapter, the authors highlight the existing research in PTSD as it concerns older women, identify shortcomings in the literature, and suggest areas for further study, such as the degree to which subthreshold PTSD is a problem for older women and the factors that would aid diagnosis and recovery among older women.

Chapter 21 - Normal aging is typically associated with a complex pattern of deficits and spared performance in memory when compared with younger adults across a wide variety of tasks and for different types of information. The authors briefly review some of the major theories put forth to account for these differences and similarities in memory performance between younger and older adults. The specific pattern of spared and impaired functioning is discussed, focusing on the manner in which memory is assessed as well as the specific deficits older adults demonstrate in recalling source and contextual information. The authors explain the theories implicating associative/binding deficits that have been proposed to

account for these data, focusing on the associative deficit hypothesis proposed by Naveh-Benjamin (2000) that suggests that the major difficulty older adults have is associating units of information in memory. Finally, the authors review the research on the effects of distinctiveness on memory, which rely partially upon memory for the contextual elements. The authors discuss the limited data on age-related differences in the benefit of distinctive information and how well the associative deficit view can account for the smaller benefits afforded to older adults.

Chapter 22 – the authors have studied the aging changes of intramitochondrial macromolecular synthesis such as nucleic acid synthesis, both DNA and RNA, and proteins in hepatocytes of many groups of litter mate mice in both sexes at various ages, from postnatal newborn to juvenile, young adults and senescent year 1, by means of electron microscopic radioautography after the injections with ^{3}H-thymidine, ^{3}H-uridine and ^{3}H-leucine, respectively. From the results, it was found that some of the mitochondria in the hepatocytes were labeled with silver grains showing DNA, RNA and protein syntheses. Quantitative analysis revealed that the number of mitochondria increased from perinatal stage to senesence. However, the number of mitochondria per cell labeled with silver grains and the labeling index increased from prenatal day to postnatal newborn, adult month 1, reaching the maxima, then decreased to senile year 1, indicating the aging changes. Based upon our findings, the authors could not find any sexual difference between the male and female mice at various ages, so far as it concerned to the intramitochondrial macromolecular synthesis in mouse hepatocytes. However, there might be any sexual difference between the macromolecular synthesis in such endocrine cells as adrenal glands or pituitary. Since the studies on the sexual difference in the macromolecular synthesis of mitochondria in various cells among the available literatures are missing, the authors indicate that this area dealing with the macromolecular synthesis in the mitochondria of endocrine cells need to be explored in the future.

Chapter 23 - According to Antonovsky's (1987) salutogenic theory, generalized resistance resources build up the sense of coherence which determines an individual's health level. The general aim of this study was to apply the salutogenic model to women's healthy aging. Specifically, the authors examine the status of the sense of coherence as a mediator of the relationship between resistance resources and subjective health. 284 East-German women at the mean age of 74 years (SD = 7.9; range: 57 to 96 years), who spent their working life in a socialist culture of female role variety, filled out a comprehensive questionnaire assessing 18 bio-psycho-social resistance resources, the sense of coherence and four subjective health measures. The authors found that 16 resources significantly correlated with the sense of coherence (except for marital status and education). A regression analysis revealed that dispositional optimism, self-esteem, activities of daily living, and (marginally) self-efficacy– were significant predictors (54% of variance accounted for). The authors found subjective health to be coherence-dependent. In four stepwise regression analyses, the sense of coherence entered at Step 1 accounted for 28%, 35%, 22%, and 7% of the variance in psychological health, depression, physical symptom reporting, and physical health, respectively. Resources were entered at Step 2 and accounted for 12%, 26%, 25%, and 54% of additional variance, respectively. Mediation analyses via multiple Sobel tests corroborate the idea that 15 eligible resistance resources influence psychological health, depression, and

physical symptom reporting indirectly via the sense of coherence. However, no mediation effects of the sense of coherence were found for physical health. The findings are congruent with salutogenic theory and support the position that the sense of coherence is a key variable for health maintenance and health promotion in women's senior age. Women's experiences of role variety over the life-span possibly will allow for acquiring a broad spectrum of salutogenic forces that may be perpetuated in senior age.

Chapter 24 - Background. There are many differences between the two genders, biological, sociological and also in their ageing process. Family physicians can observe their patients, should screen them for most important chronic diseases and, most importantly treat them. Primary care is the best field for long-term (sometimes life-long) follow up of patients.

Aims. To observe the nutritional habits of elderly women and compare to those of men.

Methods. Two-hundred and sixty six people (109 men and 157 women, age>60 years) were consecutively selected among primary care patients in Budapest, Hungary. They were asked to fill in a questionnaire on their life style and eating habits including a food frequency questionnaire that contained 41 items of typical meals and beverages. Data on self-recorded body weight in each life decade were also questioned. Medical check-up, registration of anthropological parameters, and laboratory tests were also performed. Fifty-three people were involved in a 3-day dietary recall.

Results. The meal frequency was increased during aging in both genders. Lunch was preferred by 79% of women and 26% of men as a principal meal, respectively. Alcoholic beverages were consumed less frequently by women (2% had a drink more than once a week, compared to 26% of men). The fluid intake of women was low in general- They reported only 1 liter/day. Milk, diary products, fresh fruit, bread, biscuits, chocolate, coffee and vitamin supplements were consumed more frequently by women. The daily energy intake was 8.78 MJ by women and 9.75 MJ by men. Fat was present in 39% of all energy intake, higher than recommended. Over the decades of life body weight gain was higher in women than in men (mean: 13.6 kg ± SD, and male mean: 12 ± SD kg, $p<0.01$). Women were influenced by the price of purchased food more than men.

Conclusion. High energy intake during decades leads to overweight in both genders (BMI >27kg/m^2). Compared to men, women's the eating habits and food choice are closer to healthy.

Suggestion: Large-scale studies are needed to evaluate gender-related differences of nutrition in the elderly in order to establish public health suggestions.

Chapter 25 - Aging is associated with progressive calcium deficiency with secondary hyperparathyroidism, skeletal calcium loss and paradoxical calcium overload of soft tissue and intracellular compartment. This phenomenon may be important in the pathogenesis of many diseases associated with aging such as osteoporosis, cartilage degeneration with osteoarthritis, vascular calcification with arteriosclerosis, hypertension, neurodegenerative diseases, diabetes mellitus and immune disorders.

Although an early recognition and search for prevention of calcium deficiency and calcium paradox thus becomes imperative, clinical estimation of calcium shift into intracellular compartment has stayed a hard task on account of the difficulty for non－invasive sampling and accurate measurement of extremely low intracellular calcium concentration. Attempts were therefore made to measure red cell calcium content to study the

effect of aging and calcium supplementation. Ca and Mg in washed red cells were measured by using Hitachi Z-2300 Type Polarization Zeeman atomic absorptiometer. In 42 subjects, red cell calcium content (RBCCa) significantly increased with age (r = 0.328, p= 0.0341), whereas Mg showed no significant regression (r = 0.0235, p = 0.1344). Supplementation with 900 mg / day calcium as AAACa, heated oyster shell mainly consisting of calcium hydroxide with added seaweed component, caused a significant decrease of RBCCa with age, giving a significant negative regression on age of the ratio of RBCCa after Ca loading (Ca 2) / RBCCa before loading (Ca 1) (r = 0.625, P < 0.0001), but no significant regression on age of the ratio RBCMg after Ca loading(Mg 2) / RBCMg before Ca loading (Mg 1) (r = 0.191, p = 0.2259). To evaluate the effect of active absorbable algal calcium, 3 groups of test subjects homogeneous in age, serum Ca, serum P and urinary Ca /Cr ratio were supplemented with 900 mg Ca /day as AAACa) (Group A), 900 mg / day Ca as calcium carbonate (Group B) and placebo containing no calcium (Group C), respectively for 3 months. Ca 2 / Ca1 ratio in Group A was 85.9 ± 3.9 (SEM) %, significantly lower than the corresponding value of 117.0 ± 5.9 in Group C at p < 0.0001, and also than 101.2 ± 6.1 (SEM)% in Group B at p = 0.0396, indicating a higher bioavailability of AAA Ca and more efficient suppression of RBCCa by AAACa than placebo and calcium carbonate. Ca 2—Ca1 and Mg 2—Mg 1 also showed the same trend. Measurement of red blood cell calcium content appears to be a useful approach to detect and quantify calcium deficiency. It would also be valuable for the evaluation of bioavailability and usefulness of calcium supplement to solve this problem.

Chapter 26 - The relationship between the living arrangements of older people and the demand for and type of housing, the quantity and types of social services, informal support and care, life satisfaction, subjective well-being, and place of death is well-documented. There is a great gender difference. Some studies have examined factors that are associated with living arrangements and overall transitions in terms of resources (e.g., residence, marital status, caregiving resources, socioeconomic status) and needs (e.g., care due to declined physical, cognitive, and emotional functioning). Yet, there is no study that has examined transitions into and out of each type of living arrangement and investigated how long the Chinese elderly are expected to stay in each type of living arrangement for the rest of their lives. Determining the expected years that will be spent in different living arrangements takes on a unique urgency as China prepares for unprecedented numbers of senior citizens, with ever fewer numbers of adult children to care for them. Expected years spent in various living arrangements will help policy makers prepare for the housing and care needs of China's burgeoning elderly population. By utilizing the multi-state life table method and examining the first three waves of the Chinese Longitudinal Healthy Longevity Survey (CLHLS) from 1998 to 2002, this study aims to investigate gender differences in dynamic transitions in living arrangements and expected years spent in each type of living arrangement for the Chinese oldest-old. Seven categories of living arrangements are distinguished and analyzed: Living alone; living with a spouse only; living with children (two generational families); living with grandchildren (skipped-generation households); living with children, grandchildren, and/or great grandchildren; living with others; and living in institutions. Our results show that men of age 80 have an average life expectancy of 5.94 years, and can expect to spend 0.83 of a year living alone, 1.15 years living with a spouse only, 0.90 of a year

此为试读,需要完整PDF请访问: www.ertongbook.com