

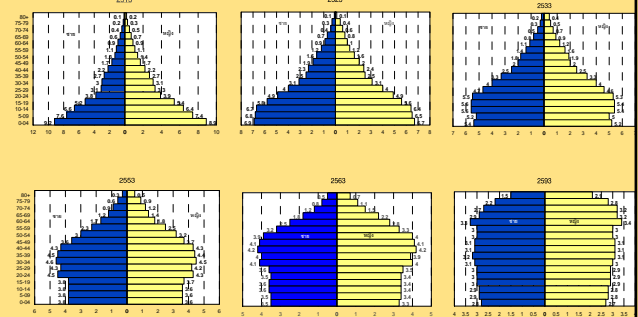
# Strategic Research on Community-based Health Promotion for Thai Elderly

ประเสริฐ อัสสันตชัย

สาขาวิชาเวชศาสตร์ผู้สูงอายุ ภาควิชาเวชศาสตร์ป้องกันและสังคม

คณะแพทยศาสตร์ศิริราชพยาบาล

## Demographic Trend of Thai Population 2513-2593



United Nations. Sex & Age Distribution of the World Populations:  
The 1998 Revision, p. 784 – 785.

## Indicators of “HEALTH” in Geriatrics

The state of well-being in

- ❖ Physical
- ❖ Mental
- ❖ Social
- ❖ Function

British Geriatric Society

## สาเหตุการเสียชีวิตที่สำคัญในผู้สูงอายุไทยปีพ.ศ. 2541

	60-74 ปี	75 ปีขึ้นไป
1. โรคระบบไหลเวียนเลือด	574.5	1936.4
2. มะเร็งทุกระบบ	564.4	897.1
3. เบาหวาน	213.6	348.6
4. ปอดอุดกั้นเรื้อรัง	209.7	420.7
5. โรคระบบทางเดินอาหาร	114.3	301.5
6. วัณโรค	82.5	199.7
7. อุบัติเหตุ	81.5	153.8

สำนักงานนโยบายและแผนสาธารณสุข 2543

ตารางที่ 4 สมนอคมแรกของกาสุขภาพเสปบสุขภาวะในผู้สูงอายุ

ลำดับ	ชาย				หญิง			
	โรค	DALY ('000)	%	%	DALY ('000)	%	%	โรค
1	หลอดเลือดสมอง	171	12.5	13.5	206	12.5	13.5	หลอดเลือดสมอง
2	ปอดอุดกั้นเรื้อรัง	124	9.1	10.4	160	9.1	10.4	เบาหวาน
3	มะเร็งตับ	114	8.3	6.3	97	8.3	6.3	หัวใจขาดเลือด
4	หัวใจขาดเลือด	95	6.9	5.1	78	6.9	5.1	สมองเสื่อม
5	เบาหวาน	75	5.5	4.4	67	5.5	4.4	มะเร็งตับ
6	มะเร็งปอด	62	4.5	4.1	63	4.5	4.1	ข้อกระดูก
7	พิการทางการได้ยิน	45	3.3	3.9	60	3.3	3.9	ปอดอุดกั้นเรื้อรัง
8	ข้อกระดูก	40	2.9	3.5	54	2.9	3.5	พิการทางการได้ยิน
9	สมองเสื่อม	39	2.8	3.2	49	2.8	3.2	ข้อเสื่อม
10	ตับแข็ง	36	2.6	2.9	44	2.6	2.9	ไตอักเสบเสื่อม
	ทุกสาเหตุ	1,367	100	100	1,532	100	100	ทุกสาเหตุ

กนิษฐา บุญธรรมเจริญ. ภาวะพึ่งพิงของประชากรสูงอายุไทย. มูลนิธิสถาบันวิจัยและพัฒนาผู้สูงอายุไทย (มส.ผส.) การประชุมวิชาการทิศทางการดูแลระยะยาวด้านสุขภาพสำหรับผู้สูงอายุในประเทศไทย พ.ศ. 2551

## Prevention in Geriatrics

- Primary prevention
- Secondary prevention
- Tertiary prevention

## Primary prevention

- Prevent or delay the occurrence and development of some risk factors and diseases (health promotion & education & counseling & specific protection)
- Smoking cessation
- Exercise\*
- Diet\*
- Alcohol
- Accident\*
- Medications\*
- Immunization
- Environment
- Sexual behavior

## Secondary prevention

- Early detection of diseases eg. annual screening (Preclinical diagnosis)
  - ◆ Annual check-up, atherosclerotic risk factors, cancer screening
  - ◆ Hearing, visual impairment, denture
  - ◆ Osteoporosis, fall-related fractures
  - ◆ Memory problem, depression
  - ◆ Thyroid dysfunction: F > 50-60 yrs q. 5 yrs ?

## Tertiary prevention

- Minimize discomfort, disability, and dependency, all treatments of any diseases
- Prevent recurrence
  - ◆ Examples:
    - Falls → fracture → immobility → deconditioning state
    - Postoperative delirium

## Screening in the elderly

- Atherosclerotic risk factors
- Common cancers
- Anemia
- Nutritional status
- Hearing and vision
- Dental problems
- Dementia
- Depression
- Thyroid function
- Abdominal aortic aneurysm (AAA)
- Bone mineral density (BMD)
- Fall risk assessment

Two types of strategic research on community-based health promotion

- Health promotion and specific disease prevention
- Holistic health promotion

## Health promotion and specific disease prevention

### 7 ด้านที่สำคัญ

- 1) หลีกเลี่ยงอบายมุขและพฤติกรรมเสี่ยง
- 2) ออกกำลังกายที่เหมาะสม
- 3) โภชนาการ
- 4) สุขภาพจิต
- 5) มีส่วนร่วมในสังคม
- 6) ป้องกันโรคเฉพาะที่พบบ่อยในวัยสูงอายุ
- 7) การฉีดวัคซีนป้องกันโรคที่ติดเชื้อที่สำคัญในวัยสูงอายุ

**The Bangkok Longitudinal Study by Siriraj Hospital for Older Men and Women  
BLOSSOM study**

- The independent factors determine the incidence of **HT** (2-yr.)
  - ◆  $BW \geq 60$  kg. adjusted RR = 1.70 (1.34-2.15)
- The independent factors determine the incidence of **DM** (2-yr.)
  - ◆ BMI adjusted RR = 1.09 (1.04-1.14)
- The independent factors determine the incidence of **dyslipidemia** (2-yr.)
  - ◆  $BMI \geq 25$  adjusted RR = 1.79 (1.31-2.45)

ประเสริฐ อัสสันตชัย รายงานการวิจัยมหาวิทยาลัยมหิดล ปีงบประมาณ พ.ศ.2550-2.

**Food and Longevity – calorie restriction**

- ❖ ชาวโอกินาวา ผู้ปุ่นมีชีวิตยืนยาวมากกว่าประชากรทั่วไป
- ❖ ผู้ที่มีอายุมากกว่า 100 ปีมีสูงมากเป็น 2 - 40 เท่าของชาวผู้ปุ่นอื่นๆ
- ❖ บริโภคอาหารด้วยจำนวนแคลอรีน้อยกว่าค่าเฉลี่ยของคนผู้ปุ่น ประมาณ 20 % เด็กนักเรียนจะได้ calorie เพียง 62 % ของมาตรฐานชาวผู้ปุ่น
- ❖ อัตราตายจาก CVD, CA, IHD คิดเป็นเพียง 59%, 69% และ 59% ของที่พบในชาวผู้ปุ่น
- ❖ อัตราตายของชาวเกาะโอกินาวาที่อายุ 60 - 64 ปีเท่ากับ 1,280 รายต่อ 100,000 คนต่อปี VS. 2,181 รายต่อ 100,000 คนต่อปี

**Epidemiological survey of vitamin deficiencies in older Thai adults**

Assantachai P, et al. : Pub Health Nutr 2007; 10 : 65-70.

1. Those who consumed their daily diet monotonous daily diet (had one kind of vitamin deficiency but had other better nutritional parameters.)
  - For the edentulous older people, easy access to denture.
  - For those who lived alone or were not aware of the importance of diet variety upon health, repeated health education.
2. Those who were unable to access to adequate nutrition. This group had multiple vitamin deficiencies.
  - For the poor (poor financial status, low education, and manual worker) : likely to have thiamin deficiency, folate deficiency and protein energy malnutrition, social input.
  - For the very elderly who were more likely to have vitamin C deficiency, repeated health education to caregivers.

**Epidemiological survey of vitamin deficiencies in older Thai adults**

Assantachai P, et al. : Pub Health Nutr 2007; 10 : 65-70.

3. Those who were at high risk of atherosclerosis (male gender, high blood pressure, ex-office worker, history of heart disease, low high-density lipoprotein, hemoconcentration) : Folic acid and vitamin E status should be routinely considered by the physicians.
4. The three most common vitamin deficiencies among older Thai people were vitamin E, folic acid and thiamin. Cyanocobalamin deficiency was not the primary health problem of the country.

**Holistic health promotion for the aged**

**7 ด้านที่สำคัญ**

- ทด
- โภ
- สุข
- มีส
- ป้องกัน โรคเฉพาะที่พบบ่อยในวัยสูงอายุ
- การ

**โรคเฉพาะที่พบบ่อยในผู้สูงอายุ**

- ภาวะหกล้ม
- โรคกระดูกพรุน
- โรคในระบบไหลเวียนโลหิต
- การหลีกเลี่ยงการใช้ยาที่ไม่จำเป็น
- โรคมะเร็งที่พบบ่อย

# Hepatocellular carcinoma

## ■ High risk patients:

- Cirrhosis due to HBV, HCV
- Cirrhosis due to genetic haemochromatosis
- Males with alcohol related cirrhosis who are abstinent from alcohol or likely to comply with treatment
- Males with cirrhosis due to primary biliary cirrhosis

# Two types of strategic research on community-based health promotion

- Health promotion and specific disease prevention
- Holistic health promotion

# Holistic health promotion

- Longevity
- Quality of life
- Functional decline
- Active ageing
- Successful ageing

# Longevity research

## A simple lifestyle score predicts survival in healthy elderly men

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Paul E. Norman, M.B., Ch.B., D.S., F.R.A.C.S.<sup>c</sup>,  
Michael Lawrence-Brown, M.B., B.S., F.R.A.C.S.<sup>d</sup>

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<sup>b</sup>School of Population Health, University of Queensland, Herston, Australia  
<sup>c</sup>School of Surgery and Pathology, The University of Western Australia, Fremantle Hospital, Fremantle, Australia  
<sup>d</sup>The Mount Hospital, Perth, Australia

### Abstract

**Background:** Studies have examined population-based lifestyle factors such as smoking, alcohol consumption, exercise, fish intake, meat consumption, salt intake, BMI, and skim milk consumption.

**Methods:** We examined the association between a lifestyle score (0-5) and mortality in a cohort of 702 men (95% confidence interval (CI): 1.1-1.5) compared with men with a score of 5 or more.

**Results:** Invitations to screening produced a corrected response of 70.5%. Out of a possible score of 8, 46% of men had a score of less than 5. Within 5 years, a total of 702 men (9%) had died from any cause. The hazard ratio in men with a low lifestyle score was 1.3 [95% confidence interval (CI): 1.1-1.5] compared with men with a score of 5 or more.

**Conclusions:** Lifestyle remains an important predictor of mortality even in old age. Survival in older men without a history of cardiovascular disease can potentially be enhanced by promoting a healthy lifestyle.

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**Keywords:** Mortality; Risk; Lifestyle; Survival analysis; Elderly

at lifestyle, low morbidity population, participating in a cohort study

# Longevity research

## Review and Special Articles

### Behavioral Determinants of Healthy Aging

Nancy M. Peel, MPH, BPhy, Roderick J. McClure, PhD, MBBS, BA, Helen P. Bartlett, PhD, MSc, BA

**Abstract:** With global trends in population aging, many nations are developing and implementing healthy aging policies to promote quality as well as years of healthy life. To broaden the evidence base for such policy development, a review of the literature was conducted to summarize the existing evidence regarding the behavioral determinants of healthy aging. Such research is needed so that the efficacy of modes of intervention can be better understood. The outcome of "healthy" or "successful" aging was selected for this review since this nomenclature dominates the literature describing a global measure of multidimensional functioning at the positive end of the health continuum in older age. Studies published between 1985 and 2003 that reported statistical associations between baseline determinants and healthy aging outcome were identified from a systematic search of medical, psychological, sociological, and gerontological databases. Eight studies satisfied the search criteria. Modifiable risk factors among the behavioral determinants included smoking status, physical activity level, body mass index, diet, alcohol use, and health practices. On the basis of these findings, effective healthy aging policies need to enhance opportunities across the life span for modification of lifestyle risk factors. Efforts to standardize concepts and terminology will facilitate further research activity in this area.

**Smoking, alcohol, physical activity, BMI, diet**

### Introduction

As the population ages, a major challenge is to consider how to increase the quality and years of healthy life.<sup>1</sup> Many nations are responding to

identified factors that lead to functional decline. However, interest in healthy aging requires that researchers shift their outcome measurement to focus on those persons who are aging well, since the distribution and determinants of positive health have not been studied

# Longevity research



## Biological Secrets of Exceptional Old Age Centenarian Study Seeks Insight Into Aging Well

M.J. Friedrich

**BOSTON**—A mania for staving off the signs of aging permeates culture in the United States. Time robs people of health, independence, and perspicacity—or so advertisements warn—so everyone should cling to youth as long as possible.

But is this research except that the inexorable march toward the end of life need not be a steady decline. In the last decade, investigators have been studying the growing num-

To better understand the health and functional status of centenarians, Perls began recruiting 100-year-olds from eight towns in the Boston area for the New England Centenarian Study (NECS). He and his colleagues discovered that this group is much healthier cognitively and physically than had been thought. Perls, who is now director of the NECS at Boston Medical Center and

health, said Margery Silver, EdD, assistant professor of neurology at BU School of Medicine and associate director of the NECS. This finding suggested that centenarians might escape or delay the onset of dementia.

Through neuropsychological evaluations Silver discovered that about a third of the group of Boston centenarians did not have dementia (*J Gerontol B Psychol* 4:P140. Stud- out in the past in older populations—but not in centenarians—suggested that Alzheimer disease (AD) prevalence increases exponentially as the population ages, leading

**Absence or delayed dementia, genetic**

## Longevity research

Does low meat consumption increase life expectancy in humans?<sup>1-3</sup>

Pramil N Singh, Joan Sabaté, and Gary E Fraser

**Abstract**  
Background: Since meat products represent a major source of protein in the Western diet, findings on whether meat intake significantly contributes to the burden of fatal disease have important clinical and public health implications.  
Objective: The objective was to examine whether a very low meat intake (less than weekly) contributes to greater longevity.  
Design: We reviewed data from 6 prospective cohort studies and report new findings on the life expectancy of long-term vegetarians from the Adventist Health Study.  
Results: Our review of the 6 studies found the following trends: 1) a very low meat intake was associated with a significant decrease in risk of death in 4 studies, a nonsignificant decrease in risk of death in the fifth study, and virtually no association in the sixth study; 2) 2 of the studies in which a low meat intake significantly decreased mortality risk also indicated that a longer duration (≥2 decades) of adherence to this diet contributed to a significant decrease in mortality risk and a significant 3.6-y (95% CI, 1.4-5.7) increase in life expectancy.

### Low meat, vegetarian

peers in Western nations in which the per capita meat intake has, over the past few decades, been substantially higher.  
Does lower meat intake improve survival among humans? It is noteworthy that the apparently supportive historical accounts do not constitute a formal study of the association. Of particular concern are the problems of accurate determination of attained age in rural areas and of interpreting a causal effect of meat from ecologic data. Presently, the strongest methodology available for testing whether low meat intake (as a long-term diet pattern) affects survival is the prospective cohort study in which meat intake is related to the subsequent risk of mortality. Therefore, in this report, we addressed this question by closely examining the current epidemiologic findings from prospective studies that related meat intake to all-cause mortality.  
It is noteworthy that prospective studies relating diet to mortality tend to be conducted in affluent nations in which there is a low prevalence of meatless diets [ $\approx 6\%$  follow meatless diets in the United States (14)]—a design feature that can substantially bias the results. In this regard, the present review of meatless diets was addressed by 1) oversampling the vegetarians (15, 16), 2) studying populations with a high prevalence of low meat consumers (1, 20-23), or 3) studying a vegetarian population and focusing on the duration of adherence to a very low meat intake diet as the exposure of interest (1, 18, 19).  
In this report, our conclusions about whether very low meat intake contributes to greater longevity will be based on the published findings from prospective cohort studies and on new findings on the life expectancy of long-term vegetarians in the California Seventh-day Adventist cohorts (24).

**KEY WORDS** Vegetarians, aging, epidemiology

## Longevity research

ORIGINAL INVESTIGATION

### Exceptional Longevity in Men

Modifiable Factors Associated With Survival and Function to Age 90 Years

Laurel B. Yates, MD, MPH, Luc Djousse, MD, MPH, DSc, Tobias Kurth, MD, ScD, Julie F. Huring, ScD, J. Michael Gaziano, MD, MPH

### Smoking, weight, blood pressure, regular exercise

**Background:** Prospective data on nongenetic determinants of exceptional longevity are limited, and information on long-lived men and their functional status is particularly sparse. We examined modifiable factors associated with a life span of 90 or more years and late-life function in men.

**Methods:** In this prospective cohort study of 2387 healthy men (mean age, 72 years) within the Physicians Health Study (1981-2000), biological and lifestyle factors and comorbid conditions were assessed by self-report with baseline and annual questionnaires. Mortality and incidence of major diseases were confirmed by medical record review. Late-life function was assessed 10 years after baseline by the Medical Outcomes Study 36-Item Short-Form Health Survey.

**Results:** A total of 970 men (41%) survived to at least age 90 years. Smoking was associated with an increased risk of mortality before age 90 years (hazard ratio [HR], 2.10; 95% confidence interval [CI], 1.75-2.53), and similar associations were observed with diabetes (HR, 1.86; 95% CI, 1.32-2.20),

CI, 0.62-0.83). The probability of a 90-year life span at age 70 years was 36% in the absence of smoking, diabetes, obesity, hypertension, or sedentary lifestyle. It ranged from 36% to 22% with 2 adverse factors and was negligible (4%) with 3. Compared with nonsurvivors, men with exceptional longevity had a healthier lifestyle (6% vs 33% had  $\leq 1$  adverse factor), had a lower incidence of chronic diseases, and were 3 to 5 years older at disease onset. They had better late-life physical function (mean z-score [maximum 100], 73 ± 23 vs 62 ± 30,  $P < .001$ ) and mental well-being (mean score, 94 ± 14 vs 81 ± 17,  $P = .01$ ). More than 80% (vs 47%) rated their late-life health as excellent or very good, and less than 8% (vs 22%) reported fair or poor health ( $P < .001$  for trends). Regular exercise was associated with significantly better— and smoking and overweight with significantly worse—late-life physical function. Smoking also was associated with a significant decrement in mental function.

**Conclusion:** Modifiable lifestyle behaviors during early elderly years, including smoking abstinence, weight management, blood pressure control, and regular exercise, were associated not only with enhanced life span in men

## Longevity research

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Mechanisms of Ageing and Development 156 (2005) 231–234

mechanisms of ageing and development

www.elsevier.com/locate/mea-dev

### Exceptional survival in human populations: National Institute on Aging perspectives and programs

Evan C. Hadley\*, Winifred K. Rossi

Geriatrics and Clinical Gerontology Program, National Institute on Aging, NIH, Gateway Building, Suite 3C807, 7201 Wisconsin Avenue, Bethesda, MD 20892-9205, USA

Available online 22 October 2004

**Longitudinal study for exceptional survival is better than retrospective or cross-sectional study due to genetic factor.**

#### Abstract

Identifying major aging-related exceptional survival phenotypes and their onset of life span and other health outcomes. This article describes NIA's activities regarding one important aspect of research on longevity and related phenotypes: exceptional survival phenotypes in humans, including exceptional longevity, health span, and active life expectancy. Published by Elsevier Ireland Ltd.

**Keywords:** National Institute on Aging (NIA); Longevity assurance genes; Health span; Active life expectancy

## Longevity research

ORIGINAL INVESTIGATION

### Factors Associated With Survival to 75 Years of Age in Middle-aged Men and Women

The Framingham Study

Robert J. Goldberg, PhD; Martin Larson, ScD; Daniel Levy, MD

**Background:** Whereas a variety of epidemiological studies have examined factors associated with overall and cause-specific morbidity and mortality, limited data exist about factors associated with longevity, particularly in middle-aged men and women. The present study examined factors associated with survival to 75 years of age in middle-aged men and women from the community-based Framingham Study.

**Methods:** Smoking was associated with increased risk of mortality before age 90 years (hazard ratio [HR], 2.10; 95% confidence interval [CI], 1.75-2.53), and similar associations were observed with diabetes (HR, 1.86; 95% CI, 1.32-2.20),

**Results:** Fewer cigarettes smoked per day, lower systolic blood pressure, and higher forced vital capacity were associated with longevity in both sexes. Lower heart rate in men and parental survival to 75 years of age in women were additionally associated with survival to 75 years of age.

**Conclusions:** The results of this long-term, prospective study suggest a number of lifestyle characteristics and one genetic factor associated with survival to 75 years of age. Positive impact on efforts directed at tension in middle-aged men and women.

**Men: lower HR, Women: parental survival >75**

**Smoking, lower SP, higher forced vital capacity.**

(Arch Intern Med. 1996;156:505-509)

## Longevity research

BMJ 2012;345:e5568 doi:10.1136/bmj.e5568 (Published 30 August 2012)

Page 1 of 10

### RESEARCH

**Smoking, leisure activity (physical activity), social network**

### Lifestyle, social factors, and survival after age 75: population based study

OPEN ACCESS

Debora Rizzuto PhD student<sup>1</sup>, Nicola Orsini associate professor<sup>2</sup>, Chengxuan Qiu associate professor<sup>3</sup>, Hui-Xin Wang senior researcher<sup>1</sup>, Laura Fratiglioni professor<sup>1,3</sup>

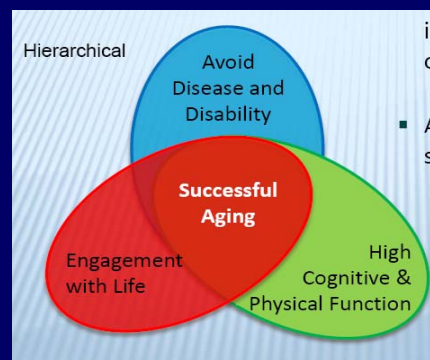
<sup>1</sup>Aging Research Center, Department of Neurobiology, Health Care Sciences and Society, Karolinska Institutet and Stockholm University, 113 30 Stockholm, Sweden; <sup>2</sup>Unit of Nutritional Epidemiology and Unit of Biostatistics, National Institute of Environmental Medicine, Karolinska Institutet; <sup>3</sup>Stockholm Gerontology Research Center, Stockholm

#### Abstract

**Objective:** To identify modifiable factors associated with longevity among adults aged 75 and older.  
**Design:** Population based cohort study.  
**Setting:** Kingsholmen, Stockholm, Sweden.

general consensus is that longevity is a multifactorial quantitative trait that is influenced by biological, environmental, and psychosocial factors.<sup>2</sup> Among all these elements, modifiable risk factors are especially relevant as they are amenable to intervention. Lifestyle, social networks, and leisure activities have been studied individually in relation to longevity in several

## Successful Ageing





## Successful Ageing

Early release, published at [www.cmaj.ca](http://www.cmaj.ca) on October 22, 2012. Subject to revision.

CMAJ RESEARCH

### Influence of individual and combined healthy behaviours on successful aging

**Smoking, moderate alcohol, physically active, fruits & vegetables**

Séverine Sabia PhD, Archana Singh-Manoux PhD, Gareth Hagger-Johnson PhD, Emmanuelle Cambois PhD, Eric J. Brunner PhD, Mika Kivimäki PhD

**ABSTRACT**

**Background:** Increases in life expectancy make it important to remain healthy for as long as possible. Our objective was to examine the extent to which healthy behaviours in midlife, separately and in combination, predict successful aging.

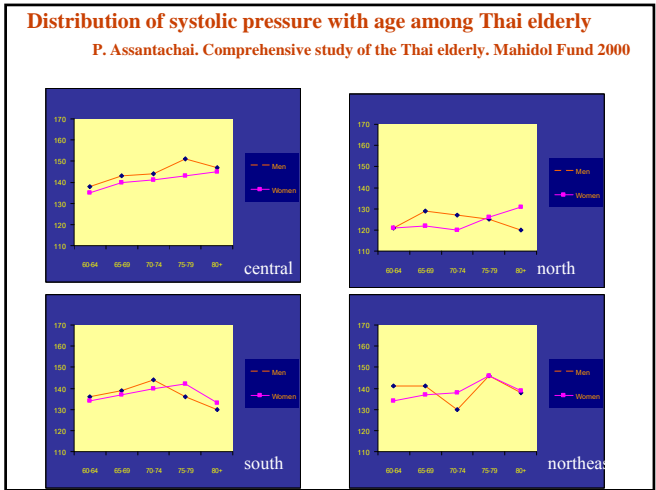
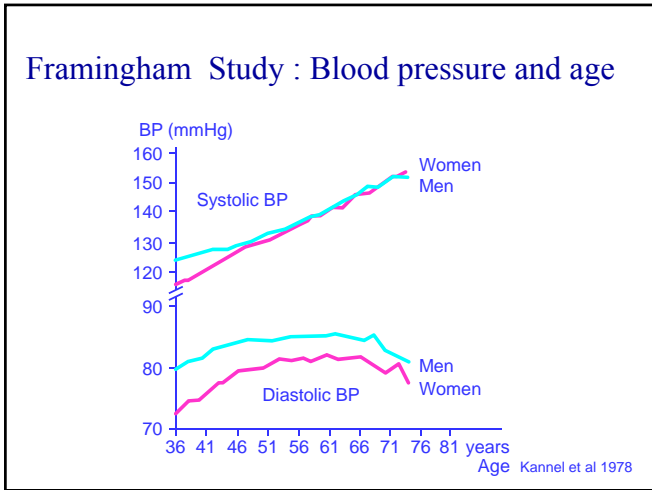
**Methods:** We used a prospective cohort design involving 5100 men and women aged 42–63 years. Participants were free of cancer, coronary artery disease and stroke when their health behaviours were assessed in 1991–1994 as part of the Whitehall II study. We defined healthy behaviours as never smoking, moderate alcohol consumption, physical activity ( $\geq 2.5$  h/wk moderate physical activity or  $\geq 1$  h/wk vigorous physical activity), and eating fruits and vegetables.

**Results:** At the end of follow-up, 549 participants had died and 953 qualified as aging successfully. Compared with participants who engaged in no healthy behaviours, participants engaging in all 4 healthy behaviours had **3.3 times greater odds** of successful aging (95% confidence interval [CI] 2.1–5.1). The association with successful aging was linear, with the odds ratio (OR) per increment of healthy behaviour being 1.3 (95% CI 1.2–1.4; population-attributable risk for 1–4 v. 0 healthy behaviours 47%). When missing data were considered in the analysis, the results were similar to those of our main analysis.

**Competing interests:** Séverine Sabia has received grant funding from the National Institute on Aging. Archana Singh-Manoux has received grant funding from the National Institutes of Health. Gareth Hagger-Johnson is supported by grants from the National Institute on Aging, the National Institutes of Health, the National Health Service Leeds Flexibility and Sustainability fund; he has received payment for lectures from the University of Leeds and the University of Ulster, and he receives

## Some unique features of research in the older people

- ❖ Cohort effect



## Some unique features of research in the older people

- ❖ Cohort effect
- ❖ Age of subject
- ❖ Health knowledge  $\neq$  healthy behaviour
- ❖ Physiologic ageing changes  $\rightarrow$  heterogeneity

It's time for longitudinal research in Thailand !!

Please select relevant research proposal reviewer for such kind of community-based health promotion research