Global Dementia Legacy Event Japan

Secular trends in dementia and its risk factors in a Japanese Community: the Hisayama Study

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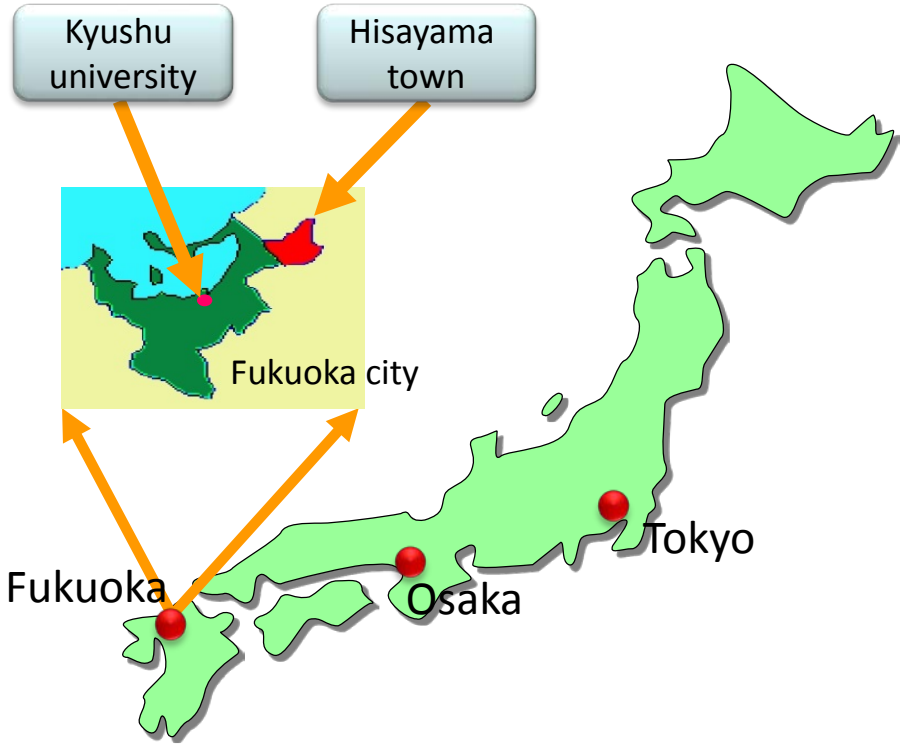
Academy Hills
Roppongi, Tokyo

Population of Hisayama town

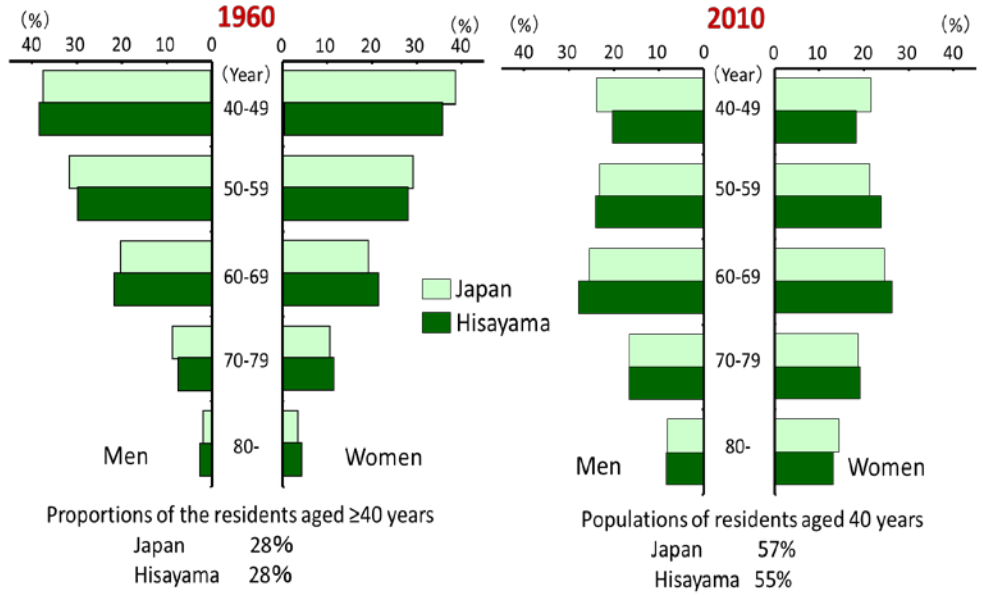
Location of Hisayama town



Year	1960	2010
Hisayama town	6,500	8,400
Japan	93 million	128 million

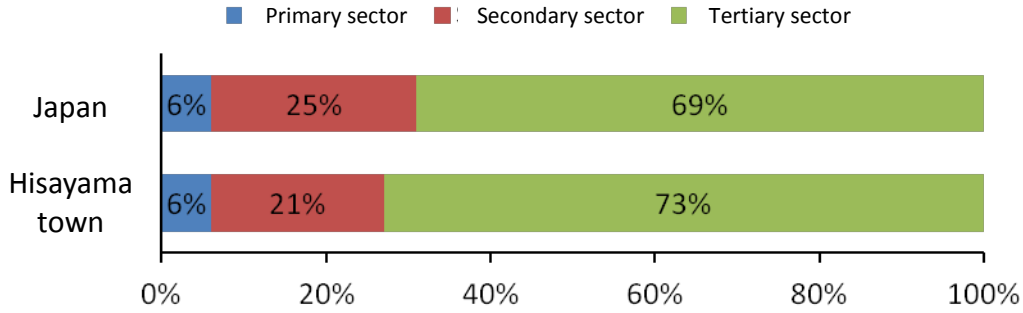
Age-distribution

Japan vs. Hisayama town, in 1960 and 2010



Proportions of labor population by industry

Japan vs. Hisayama town, in 2010



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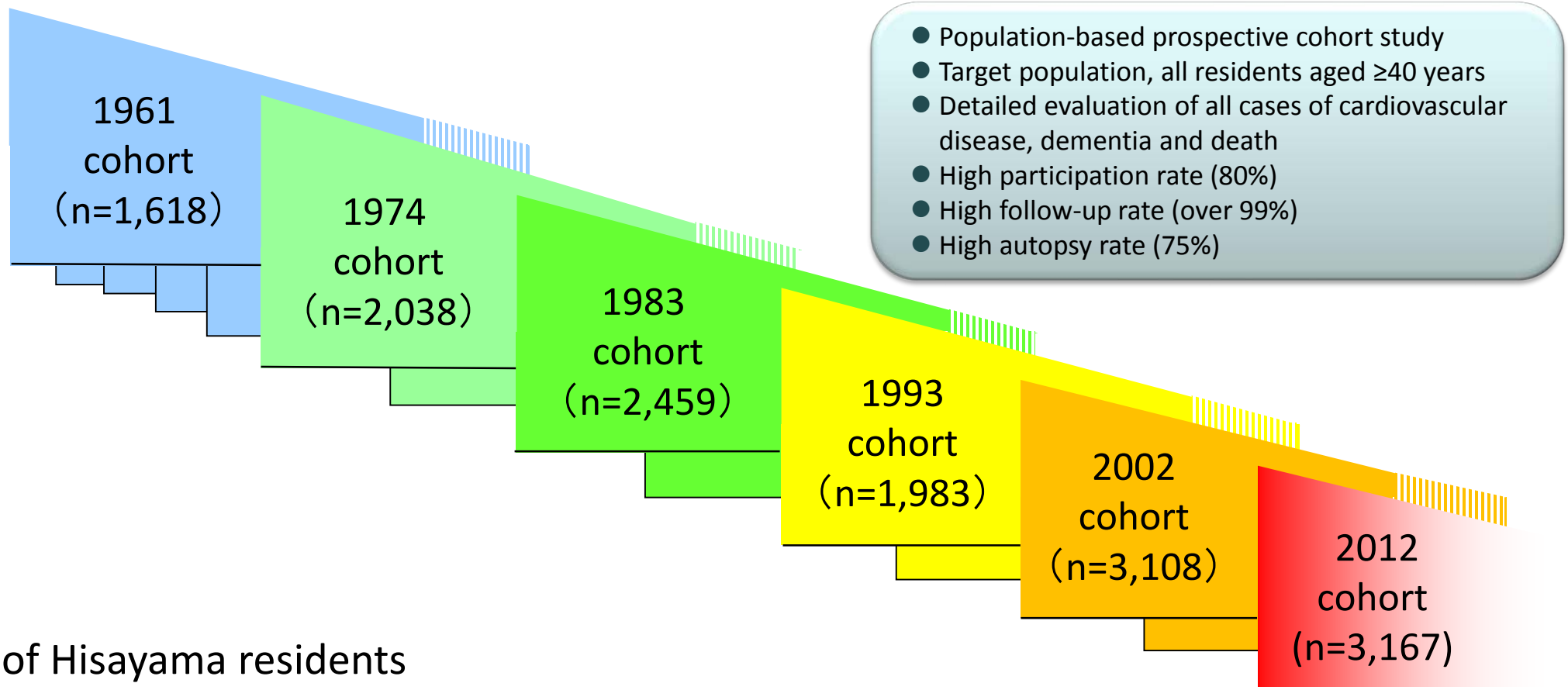
The Hisayama Study



- Population-based prospective cohort study
- Target population, all residents aged ≥40 years
- Detailed evaluation of all cases of cardiovascular disease, dementia and death
- High participation rate (80%)
- High follow-up rate (over 99%)
- High autopsy rate (75%)

N of Hisayama residents

1961	1974	1983	1993	2002	2012
6,500	7,700	7,600	7,600	7,800	8,300

Survey year

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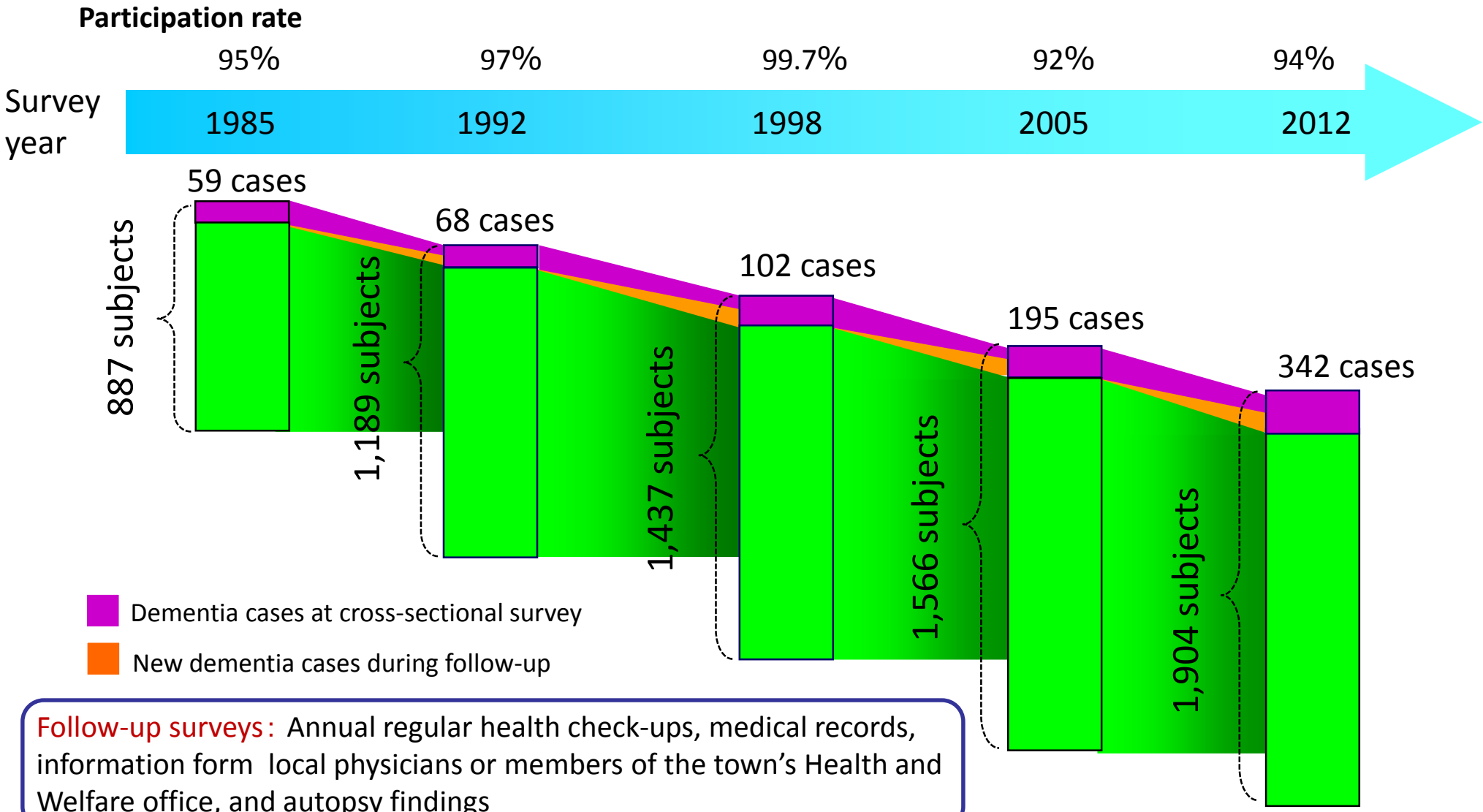
Cross-sectional and follow-up surveys of dementia in the Hisayama Study

Hisayama residents, aged ≥65 years



Follow-up surveys : Annual regular health check-ups, medical records, information form local physicians or members of the town's Health and Welfare office, and autopsy findings

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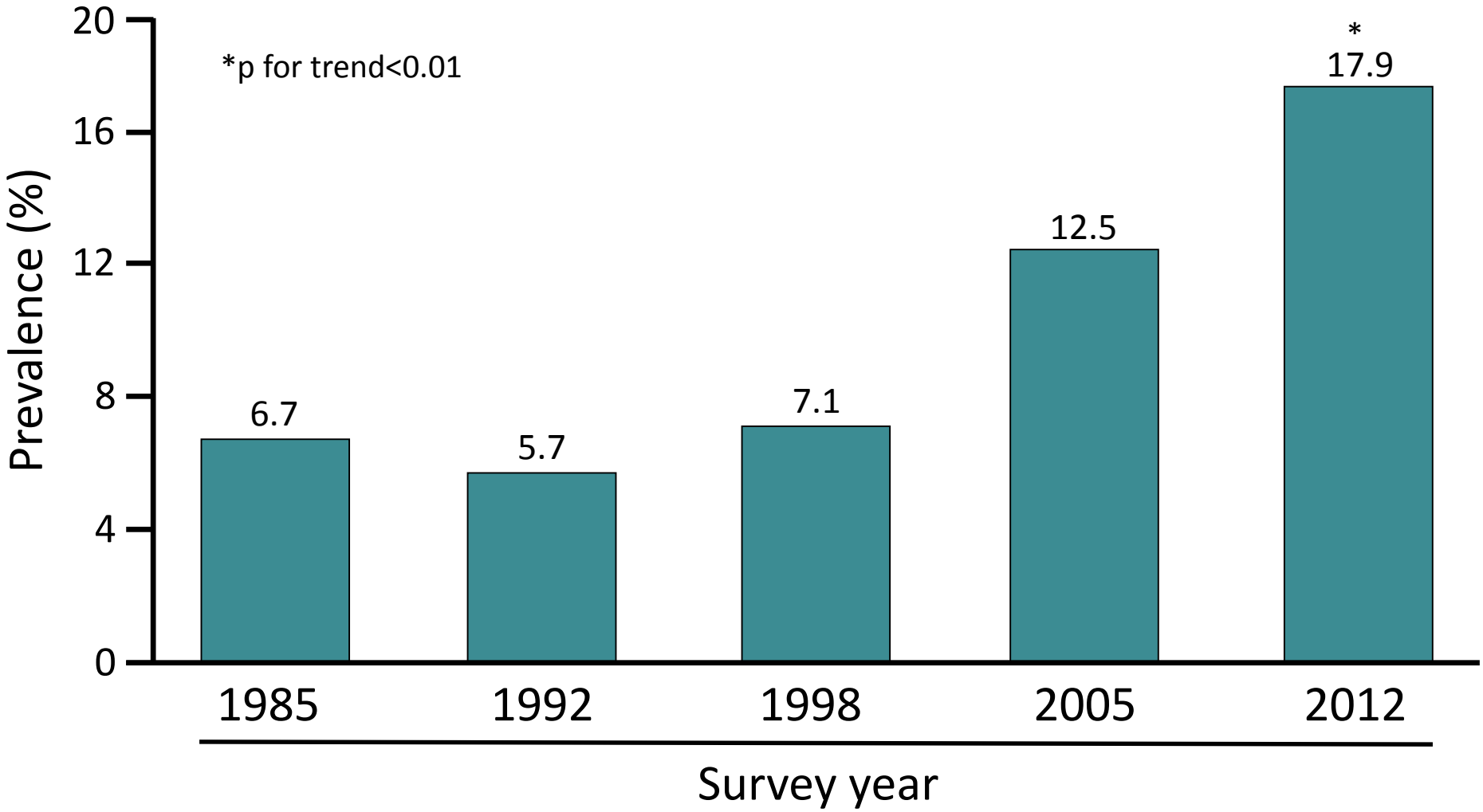
Trend in prevalence of total dementia

Hisayama residents, aged ≥65 years, unadjusted

Prevalence of total dementia increased with time.



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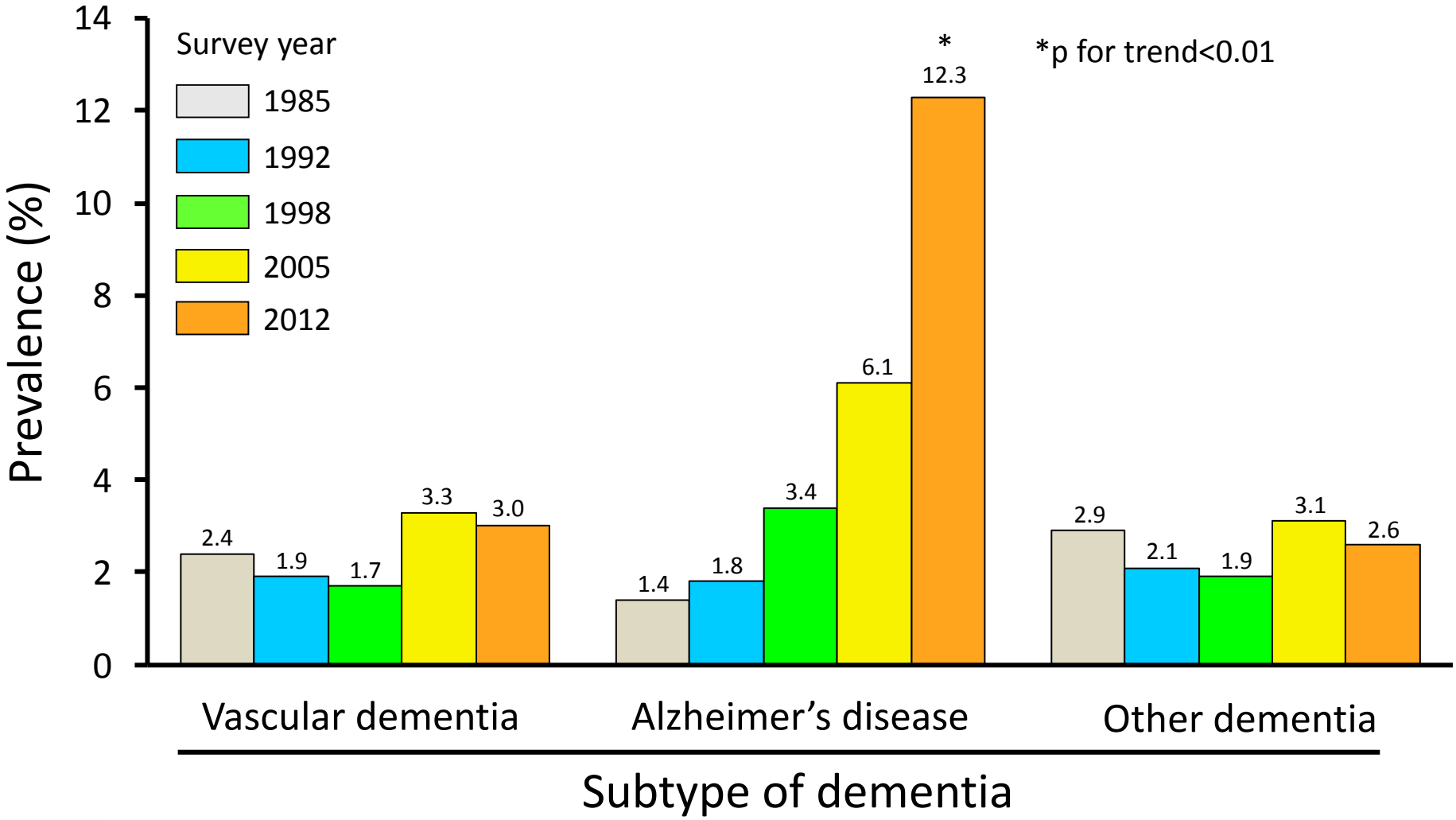
Trends in prevalence of dementia subtypes

Hisayama residents, aged ≥65 years, unadjusted

Prevalence of Alzheimer's disease increased with time.



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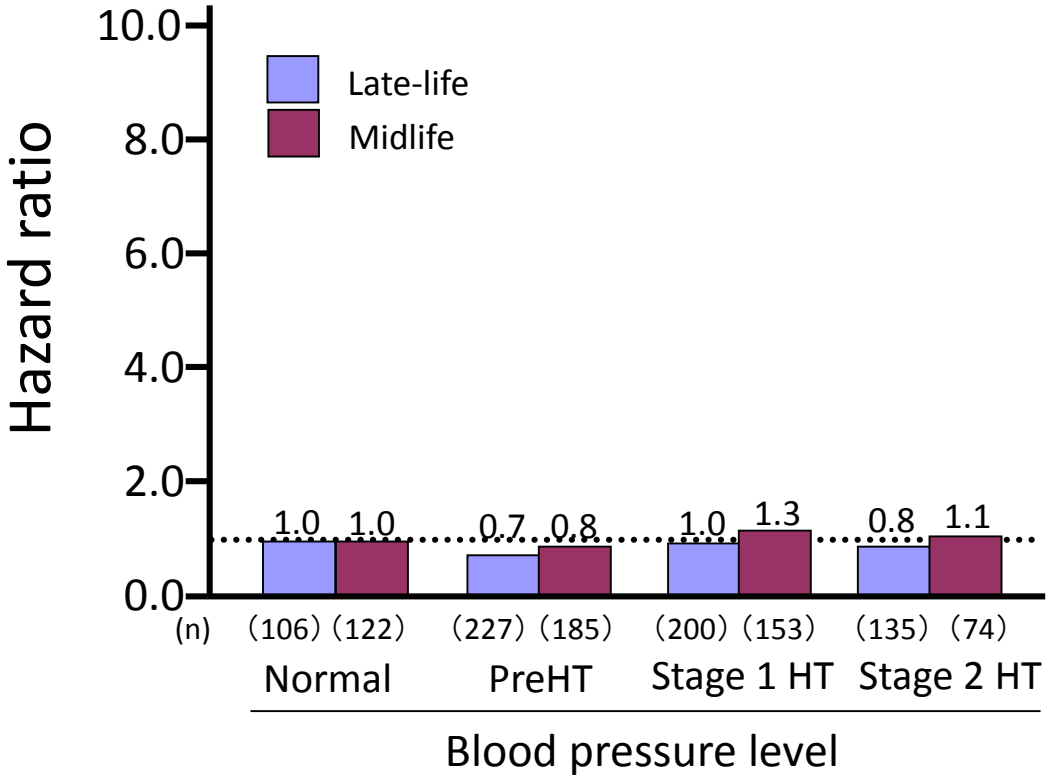
Risks of dementia subtypes in people with late-life or midlife hypertension

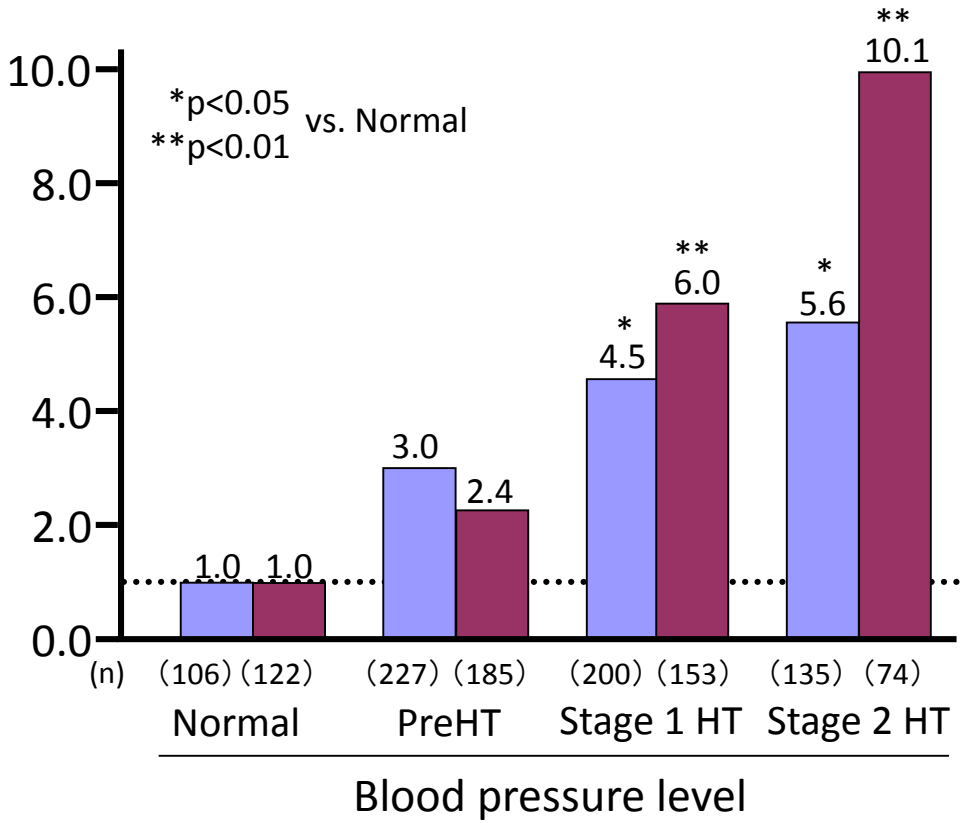
Hisayama 668 residents aged 65-79years (1988-2005) and 534 residents aged 50-64 years (1973-2005), multivariable-adjusted

Hypertension, especially from midlife, is a risk factor for vascular dementia.

Alzheimer's disease



Vascular dementia



PreHT: prehypertension, HT: hypertension

Adjusted for age, sex, education level, antihypertensive agent use, diabetes, chronic kidney disease, serum total cholesterol, body mass index, history of stroke, smoking habits, and alcohol intake

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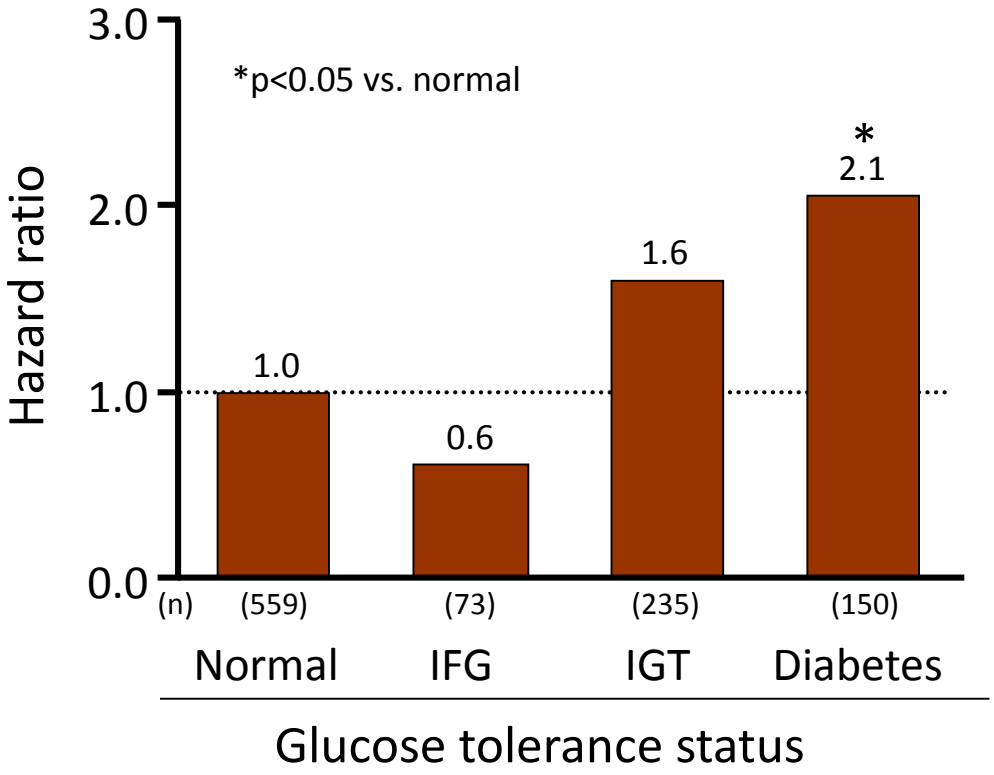
Ninomiya T, et. al. Hypertension 58: 22, 2011

Risks of dementia subtypes in people with diabetes

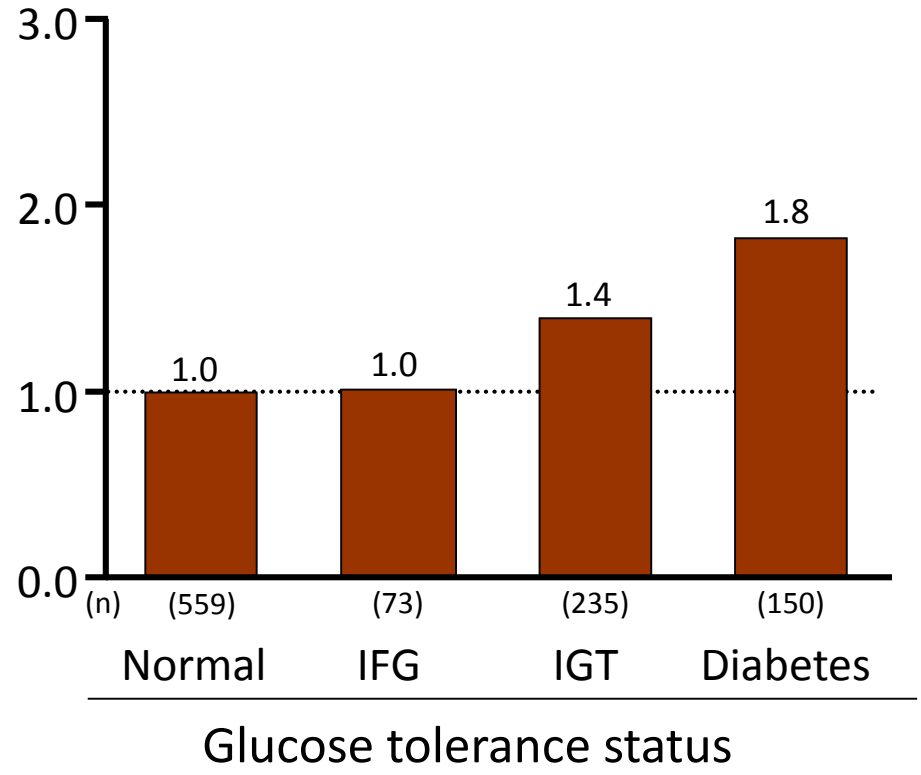
Hisayama 1,017 residents aged ≥60 years (1988-2003), multivariable-adjusted

Diabetes is a risk factor for Alzheimer's disease.

Alzheimer's disease



Vascular dementia



IFG: impaired fasting glycemia, IGT: impaired glucose tolerance

Adjusted for age, sex, education level, hypertension, total cholesterol, body mass index, waist to hip ratio, electrocardiogram abnormalities, history of stroke, smoking habits, alcohol intakes, and physical activity

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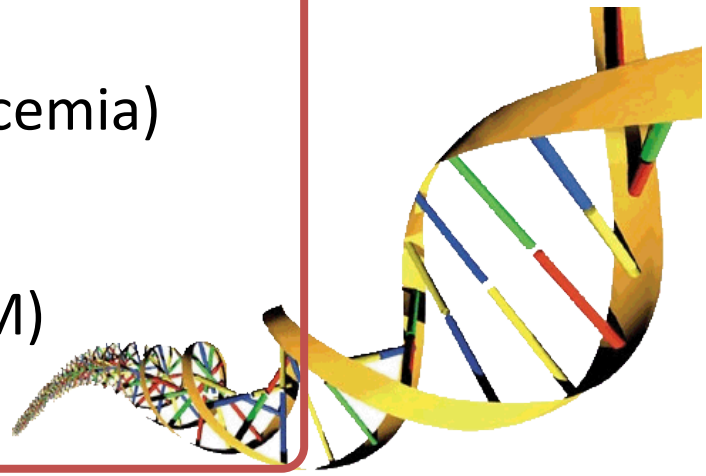
Ohara T, et. al. Neurology 77:1126, 2011

Risk factors and protective factors for dementia

Summaries of the results from the Hisayama Study

Risk factors

- Hypertension (from Midlife)
  (*Hypertension 2011; 58: 22-28*)
- Diabetes (postprandial hyperglycemia)
  (*Neurology 2011; 77: 1126-1134*)
- Smoking (*Submitting*)
- Genetic factors (APOE-ε4,PICALM)
  (*J Am Geriatr Soc 2011; 59: 1074-1079*)
  (*Psychiatr Genet 2012; 22: 290-293*)



Protective factors

- Japanese diet+ Milk (or dairy consumption)
  (*Am J Clin Nutr 2013; 97: 1076-1082*)
  (*J Am Geriatr Soc 2014; 62: 1224-1230*)
- Exercise (*Submitting*)

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Establishing a large scale, multisite cohort study for dementia in Japan

A large scale, multisite cohort study for dementia in Japan

Target population：10,000 community-dwelling residents aged ≥65 years

Baseline survey (in 5-6 sites)

【Screening of dementia and depression】
First ：Neuropsychological tests
Second： Diagnosis by psychiatrists
【Questionnaires】
Medical history, family history, medication, smoking, drinking, diet, exercise, etc.
【Physical examinations】
Height, weight, blood pressure, etc.
【Blood tests】
Lipid, kidney function, blood sugar, etc.
【Blood samples】Serum, DNA
【Imaging】Brain MRI/CT

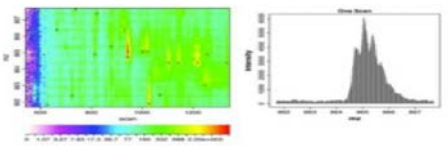
Outcomes

Dementia, depression, cardiovascular disease and death

Follow-up survey

Omics data

- Genome
- Metabolome

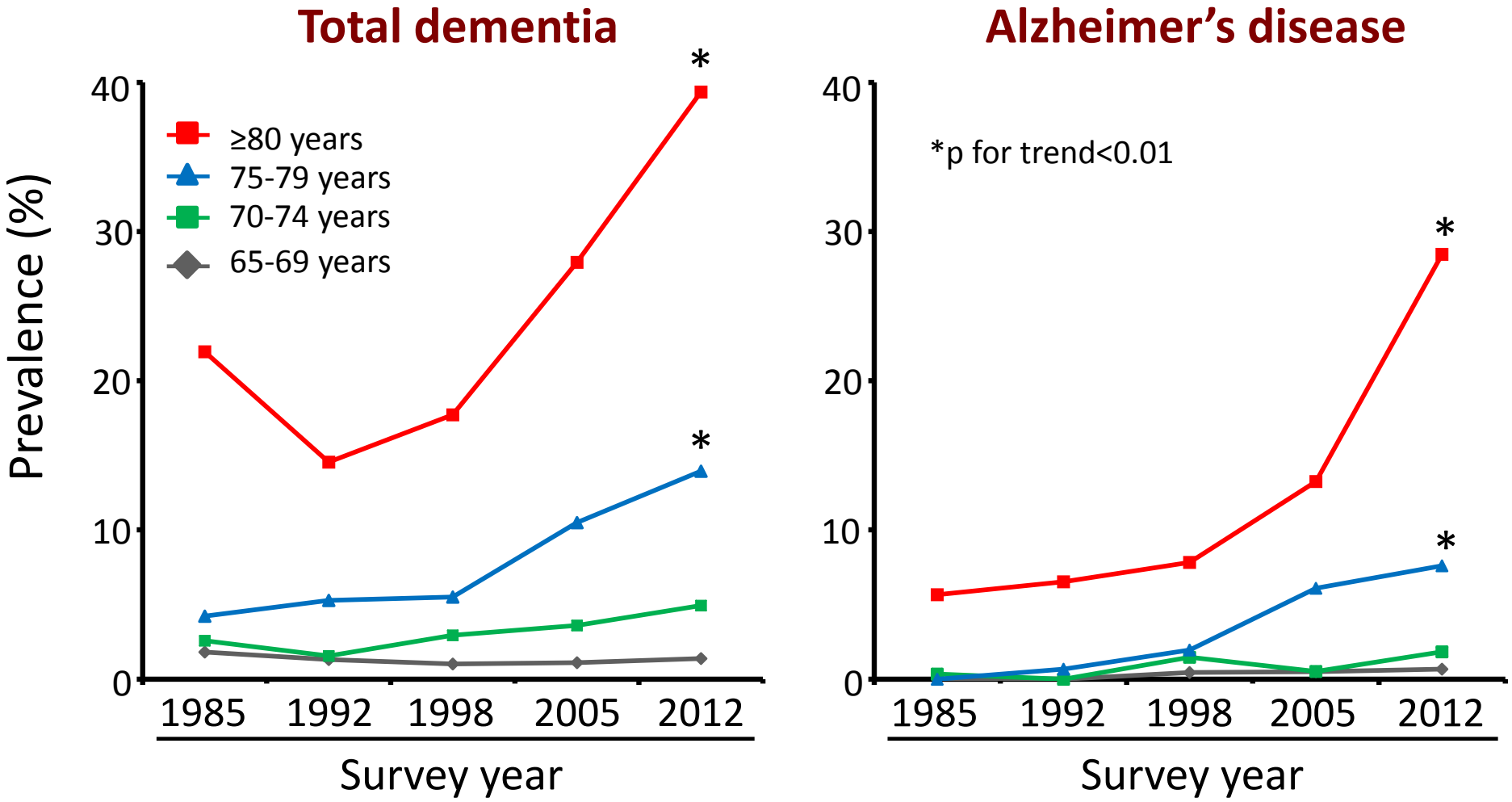


Elucidating the etiology of dementia and establishing its preventive strategies

Trends in age-specific prevalence of total dementia and Alzheimer's disease

Hisayama residents, aged ≥65 years, unadjusted

Age-specific prevalence of Alzheimer's disease increased with time in individuals aged 75-79 years and 80 years or older.



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