

# “How I Spent My FLARE Fellowship”



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# Research content (I): Brief description of the project

## My FLARE Project:

“The role of lifestyle factors in the prevention of dementia: a life-course approach”

## Purposes of the research project:

- To investigate the relationship of lifestyle factors to dementia from a life-course perspective;
- To develop intervention strategies against dementia;
- In the receiving institution, I focused on lifestyle and vascular risk factors for Parkinson’s disease.

## Purposes of FLARE Program for all recipients:

- To develop research network within Europe;
  - To expand the current research field/topic.
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## Research contents (II): How to achieve the aims?

### Several population-based studies:

- *The Kungsholmen Project*, 1987-2000 (5 waves of exam);
- *The SNAC-Kungsholmen Study (SNAC-K)*, 2001-2011;
- *The Cardiovascular Risk in Dementia (CAIDE)* in Finland, 1972-2008 (3 waves of exam, from midlife);
- *The FINRISK Study*, 1972-2007 (in receiving institution);
- *The AGES-Reykjavik Study*, 2002-2006 (collaboration).

### Systematic reviews:

- We conduct systematic reviews of literature to assess from a life-course perspective the relationship of lifestyle factors to cognitive aging and dementia;
  - Based on evidence reviewed, we propose intervention strategies against the onset of dementia.
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# SNAC-K & Kungsholmen Project



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**The Kungsholmen  
Project, 1987-2000  
N=1700, age  $\geq$ 75 yr**



**SNAC-K Population  
Study, 2001-2011  
N=3363, age  $\geq$ 60 yr**

# Research contents (III): Scientific achievements-1

## In the Kungsholmen Project (KP):

- Early life educational achievements could modify the risk effect of vascular disease on late-life risk of dementia;
- Low DBP is longitudinally related to increased dementia risk in very old (Qiu et al, *Dement Geriatr Cogn Disord* 2009);
- Aggregation of lifestyle and vascular factors substantially increased risk of dementia and AD (Qiu et al, *JAD* 2010)

## In SNAC-K Population Study & SNAC-K MRI Study:

- Prevalence of dementia is stable over 15 years in central Stockholm, whereas survival of patients with dementia has been improved. Thus, the incidence of dementia may have declined in the same period (2011 VAS-COG, Lille, France);
  - Unhealthy lifestyles and vascular factors were associated with smaller volume of MTL and with increasing burden of WMLs (2009 VAS-COG, Singapore & MS submitted);
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# Research contents (IV): Scientific achievements-2

## **In the Finnish CAIDE Study:**

Decline in BP from midlife to late life ( $\approx 23$  years) anticipated subsequent development of dementia (Qiu, *work-in-progress*);

## **In the Finnish FINRISK Study:**

Hypertension and pre-hypertension are associated with elevated risk of Parkinson's disease in women, but not in men (Qiu et al, *Hypertension* 2011).

## **In the Icelandic AGES-Reykjavik Study:**

Microvascular diseases in the brain (e.g., microbleeds) and retinal (e.g., retinopathy) are correlated (Qiu et al, *Ann Neurol* 2001), and are associated with dementia characterized by vascular cognitive impairment (Qiu et al, *Neurology* 2010).

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# Research contents (V): Scientific achievements-3

## Systematic reviews and narrative reviews:

- **Evidence:** There is an age-dependent association of several lifestyle-related factors (e.g., smoking, obesity, high blood pressure, and total cholesterol) with the risk of dementia and AD (Qiu et al, *Dialogues Clin Neurosci* 2009; Qiu et al, *J Alzheimers Dis* 2010; Qiu C. *Expert Rev Neurother* 2011);
  - **Intervention strategies toward delay of dementia onset from a life-course perspective:** (1) Active and optimal control of vascular disease and related lifestyle factors from middle age; (2) Integrated active lifestyle such as rich social network and frequent participation of leisure activity (social, physical, and cognitive activity) (Qiu C. *BMJ* 2010-letter; *Ann Intern Med* 2011-letter; *Lancet Neurol* 2011-comments).
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## Original Contributions

- **Qiu C**, et al. Microvascular lesions in the brain and retina: AGES-Reykjavik Study. *Ann Neurol* 2009;65:569-576.
- **Qiu C**, Winblad B, Fratiglioni L. Low diastolic pressure and risk of dementia in very old people: a longitudinal study. *Dement Geriatr Cogn Disord* 2009;28:213-219.
- Zhang Y, **Qiu C**, et al. Acceleration of hippocampal atrophy in an elderly population: the SNAC-K study. *Int Psychogeriatrics* 2010;22:14-25.
- **Qiu C**, et al. Vascular risk profiles for dementia and Alzheimer's disease in very old people: a population-based study. *J Alzheimers Dis* 2010;20:293-300.
- **Qiu C**, et al. Cerebral microbleeds, retinopathy and dementia: AGES-Reykjavik Study. *Neurology* 2010;75:2221-2228.
- **Qiu C**, et al. Association of blood pressure and hypertension with the risk of Parkinson's disease: the National FINRISK Study. *Hypertension* 2011;57:1094-1100.

## Review Articles

- Fratiglioni L, **Qiu C**. Prevention of common neurodegenerative disorders in the elderly. *Exp Gerontol* 2009;44:46-50.
- **Qiu C**, et al. Epidemiology of Alzheimer's disease: occurrence, determinants, and strategies toward intervention. *Dialogues Clin Neurosci* 2009;11:111-128 ("State of the Art" article).
- **Qiu C**, et al. Vascular and psychosocial factors in Alzheimer's disease: epidemiological evidence towards intervention. *J Alzheimers Dis* 2010;20:689-697.
- Fratiglioni L, Mangialasche F, **Qiu C**. Brain aging – lessons from community studies. *Nutr Rev* 2010;68(Suppl. 2):S119-127.

## Comments and Scientific Letters

- **Qiu C**, Fratiglioni L. APOE ε4 status and cognitive decline with and without dementia. *Arch Neurol* 2010;67:1036-1037.
  - **Qiu C**. Preventing dementia: bridging theory and reality gap. *BMJ* 2010 Sep 7;341:c4698. (Rapid Responses)
  - **Qiu C**, Kivipelto M, Fratiglioni L. Preventing Alzheimer disease and cognitive decline. *Ann Intern Med* 2011;154:211.
  - Fratiglioni L, **Qiu C**. Prevention of cognitive decline in ageing. *Lancet Neurol* 2011;10(9):778-779.
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## Development of MY research network

- **In Europe:** Sweden (KI University Hospital Huddinge), Finland (National Institute for Health and Welfare, THL), and Iceland (e.g., Icelandic Heart Association).

Meanwhile, more extensively collaborative projects have been developed during the FLARE Period:

- **In North America:** e.g., US NIA/NIH and the University of Victoria in Canada.
  - **In Asia:** e.g., Bangladesh (ICDDR,B) and China (Jining Medical College & University Hospital, Shandong, China).
  - **In Australia:** Australian National University—Dementia Risk Evaluation Project.
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# FLARE is critical for my career development

- **2006-2007:** Post-doctoral researcher;
  - **2008-2009 (FLARE):** *Forskarassistent* (Assistant Professor);
  - **2010-2011 (FLARE+KI):** Senior Researcher via Karolinska Institutet (KI);
  - **June 2011 - now:** *Docent* (Associate Professor) at KI.
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# Operational management in the receiving institution

- **Receiving Institution** (Sept 2009-March 2010): *The National Institute for Health and Welfare (THL)* in Finland: Research was coordinated by Prof J Tuomilehto (THL), Prof L Fratiglioni (Director of ARC at KI), Dr M Kivipelto (ARC & THL), and Secretary at THL Ms P Saastamoinen.
  - **Accommodation:** University of Helsinki and private sources of apartments.
  - During the mobility period, as a senior researcher, I had to take care of my research in both the host (KI) and the receiving institutions.
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