

GLUCOSE, INSULIN & COGNITIVE FUNCTION

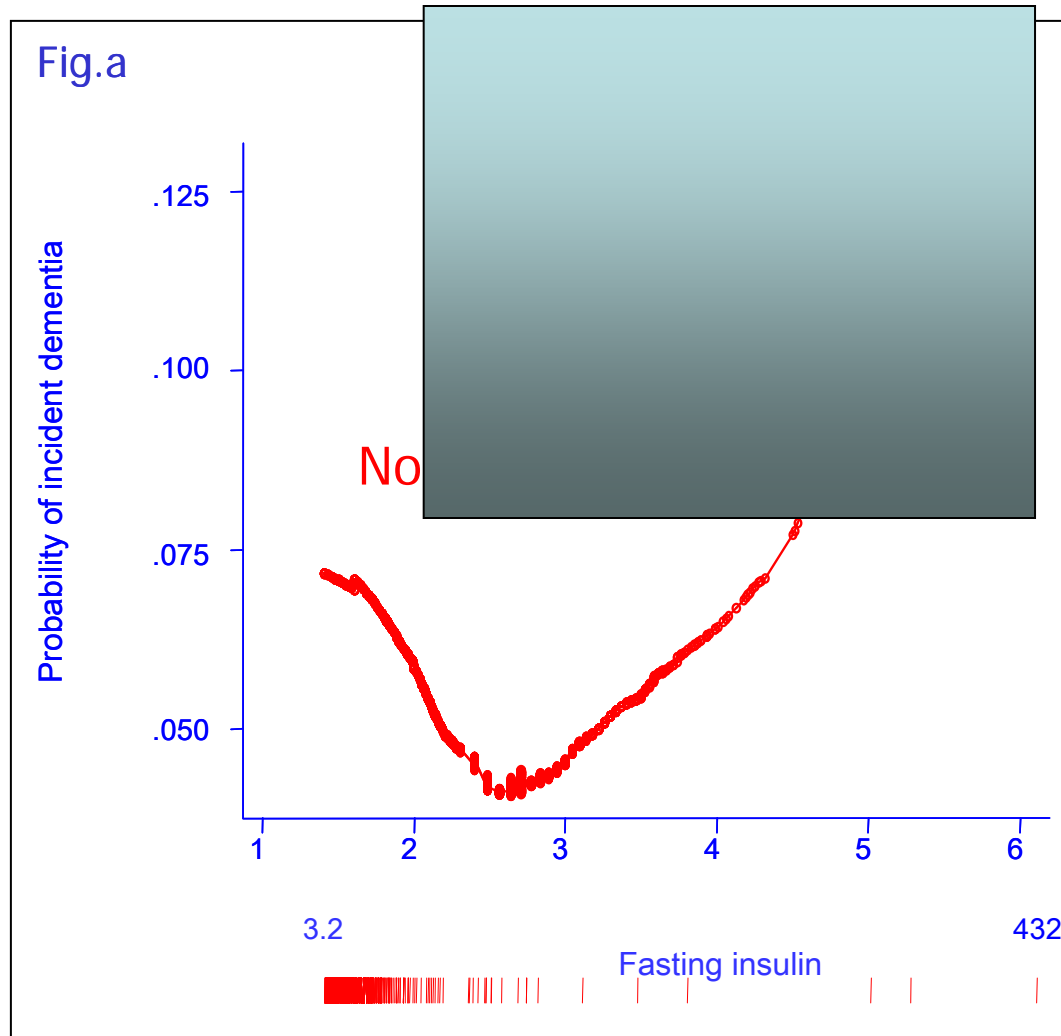
Lenore J Launer
NIA/IRP/LEDB

Diabetes and Dementia: Community cohorts

	Dementia	AD
Wash. Heights		3.8*
Rotterdam	1.9*	1.9*
HAAS	1.5*	1.8*
Framingham	1.2	1.15
Low risk	3.5*	4.8*
Kungsholmen	1.5*	1.3
Hisayama		2.2*

Luchsinger, 2005 [those with only DM]; Peila, 2002; Akomolafe, 2006; Ott, 1999; Xu, 2004; Yoshitake, 1995

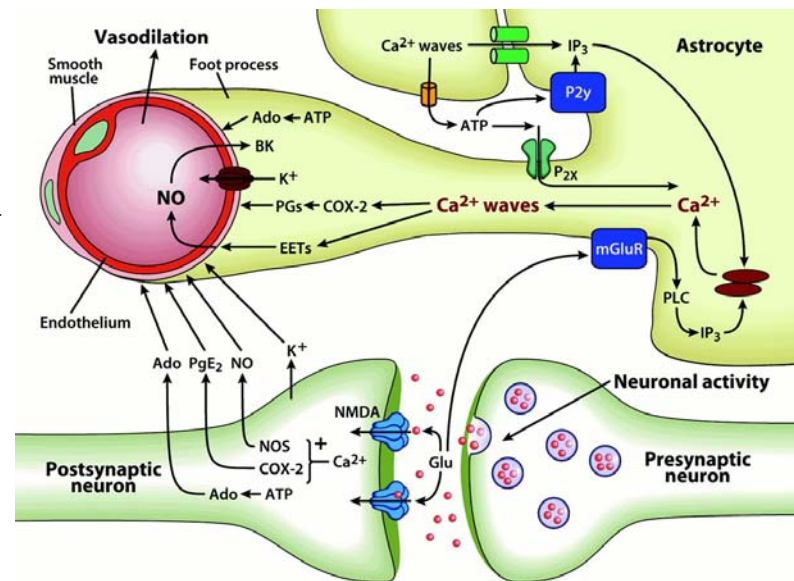
Insulin and the risk for dementia: HAAS



The neurovascular unit

Hyperinsulinemia
Hypertension
Dyslipidemia

Inflammation
Oxidative stress
Endothelial dysfunction
Metabolic factors



AD lesions

Vasc lesions

Neurodegeneration

Glucose and insulin

- Neurodegeneration or vascular damage
- Additive or synergistic interactions among pathologies and among pathologies and risk factors
- Environmental vs genetic

Research strategies

- Co-morbid animal models
- Long term population based cohorts that are well characterized over time - - life course approaches
- Peripheral measures of CNS
- Endpoints – for improvement, stability, or less decline

Some questions

Animal models

- co-morbidity
- interaction
- same pathway

Population

- patterns of cognitive impairment
- effect of impaired glucose tolerance
- role of hyperinsulinemia
- characteristics of diabetes [duration, control]
- Other markers of glycemic/insulin status

Prevention

- multi-intervention approaches
- surveillance indicators