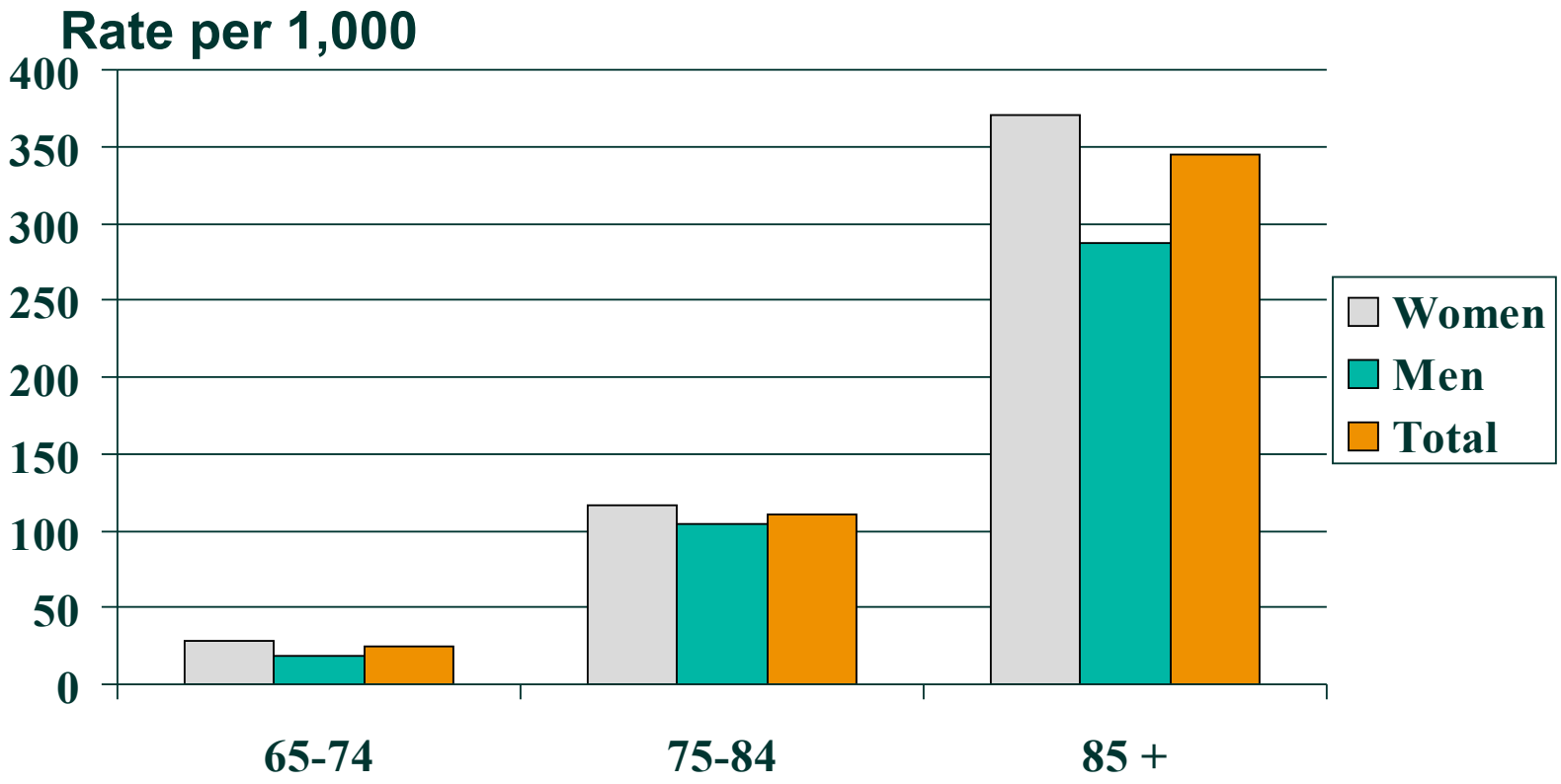
Canadian Study of Health and Aging

Key Findings

http://www.csha.ca/

Prevalence of Dementia
Canada 1991-92



Source: *Can Med Assoc J* 1994;150:899-913

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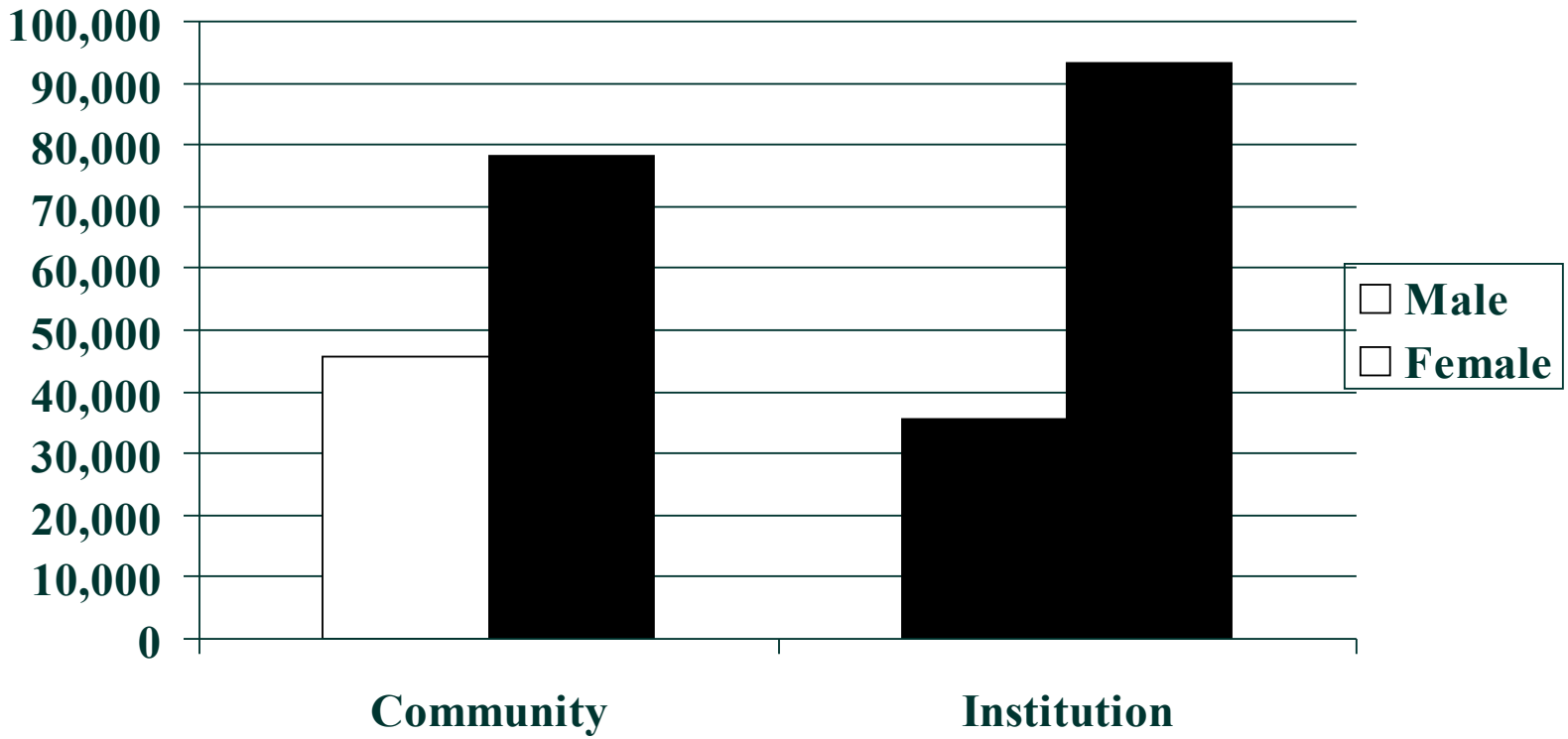
Estimated Numbers of Canadians, 65+, with Dementia, 1991



Source: *Can Med Assoc J* 1994;150:899-913

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Prevalence of Cognitive Disorder by severity and gender (Canada, 1991)

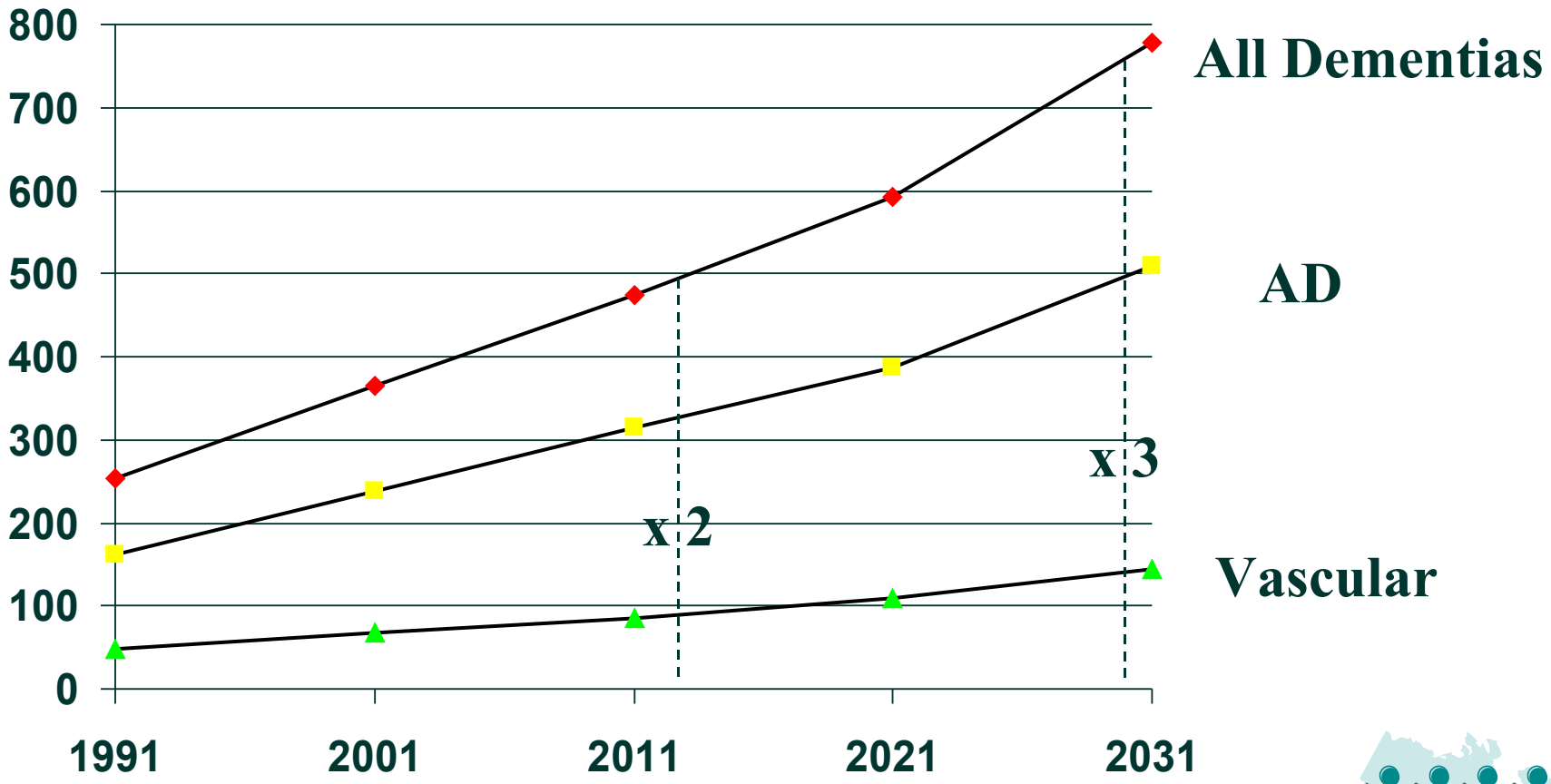
		Cognitively normal	Cognitively impaired; not dementia	Dementia		
				Mild	Mod.	Severe
Male	%	72.6	21.3	2.1	2.6	1.4
Female	%	77.1	13.5	2.4	3.6	3.5
M + F	%	75.2	16.8	2.3	3.1	2.6

Source: *Lancet* 1997;349:1793

More on the Prevalence of Dementia

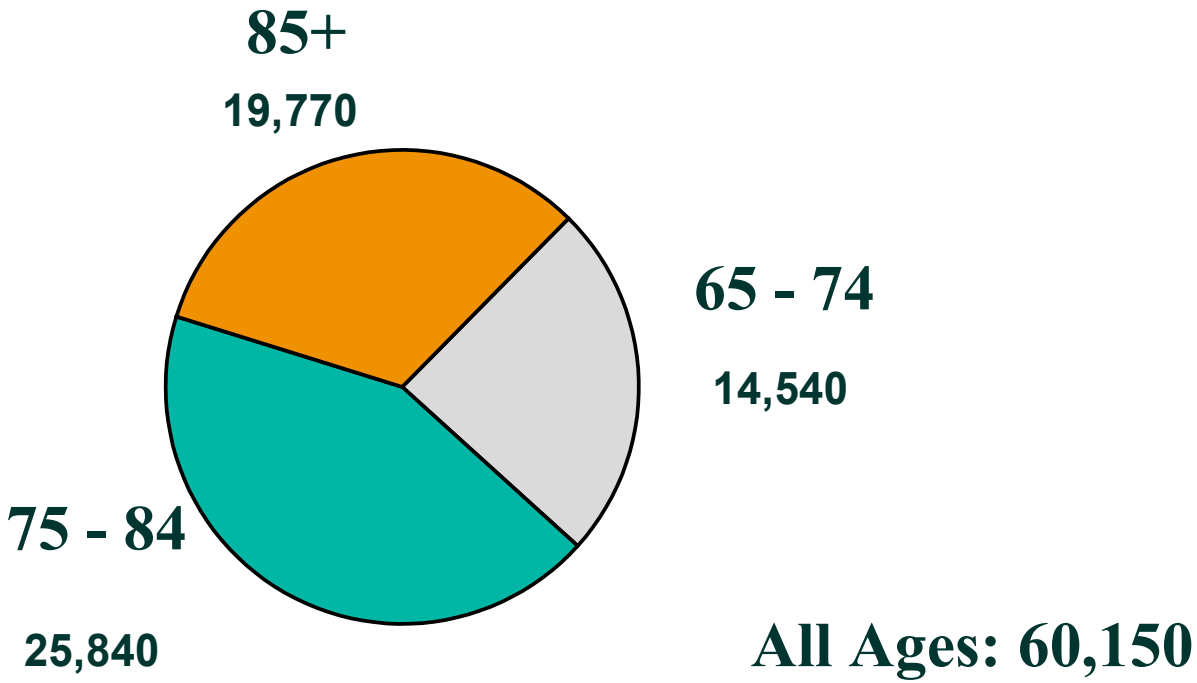
- Prevalence continues to rise beyond age 85; by 105 years of age almost 85% of people have dementia (Ebly et al., 1994)
- Hogan et al. (1996) described physiologic changes as dementia progresses; these are similar for AD and vascular dementia.
- About half of those with dementia live in the community and half in institutions (CSHA, 1994)
- For almost two-thirds of those with dementia in the community, their dementia has not been formally diagnosed (Sternberg et al., 2000)

Background:
Projected Prevalence of Dementia (x 1,000)
Canada, 1991 - 2031



Source: *CMAJ* 1994; 150: 899-913

Annual Numbers of New Cases of Dementia Canada, 1991



Source: *Neurology* 2000; 55: 66-73

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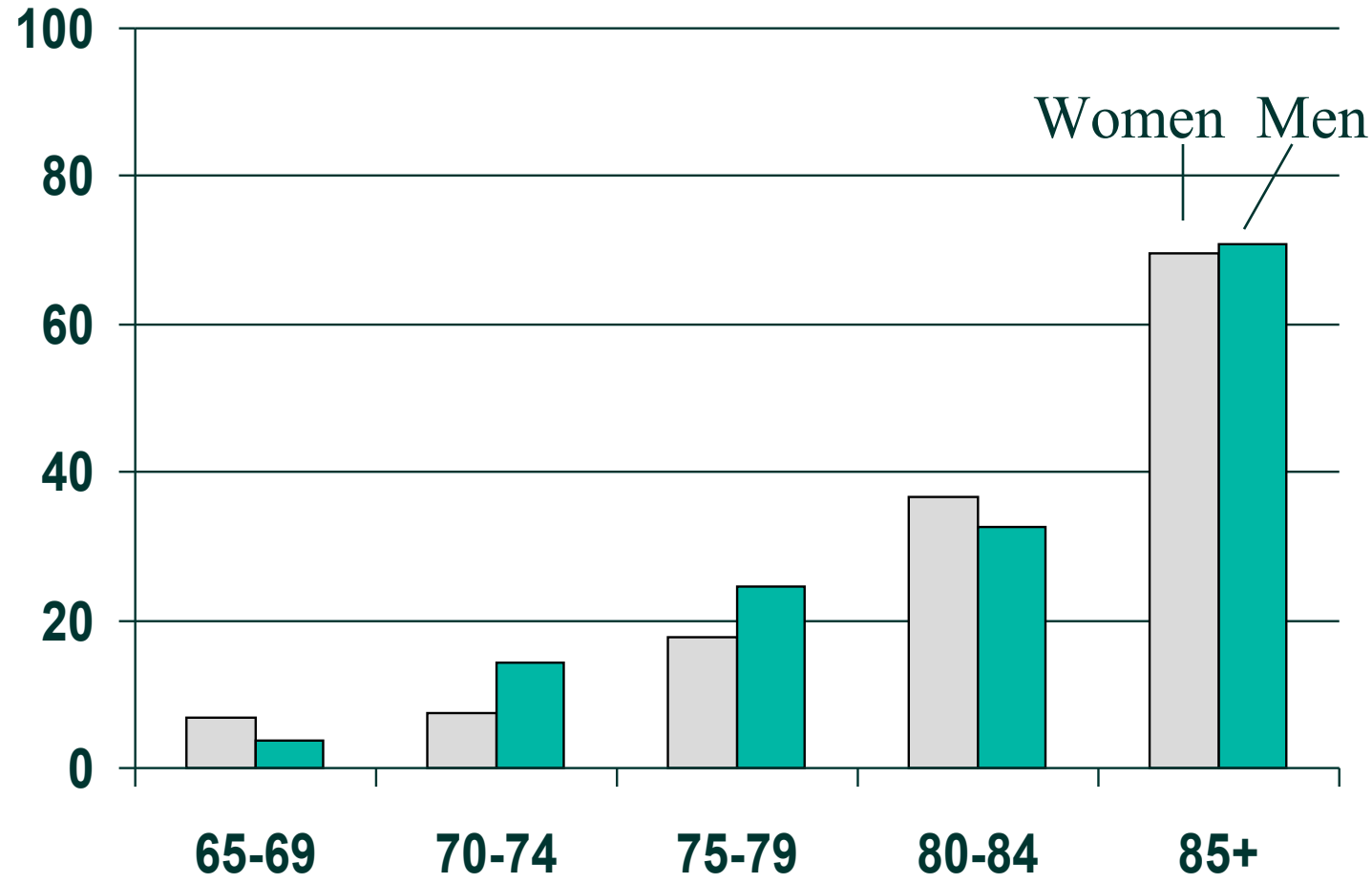
Age-Specific Incidence of Dementia in Canada, per thousand (whole population)



Source: *Neurology* 2000; 55: 66-73

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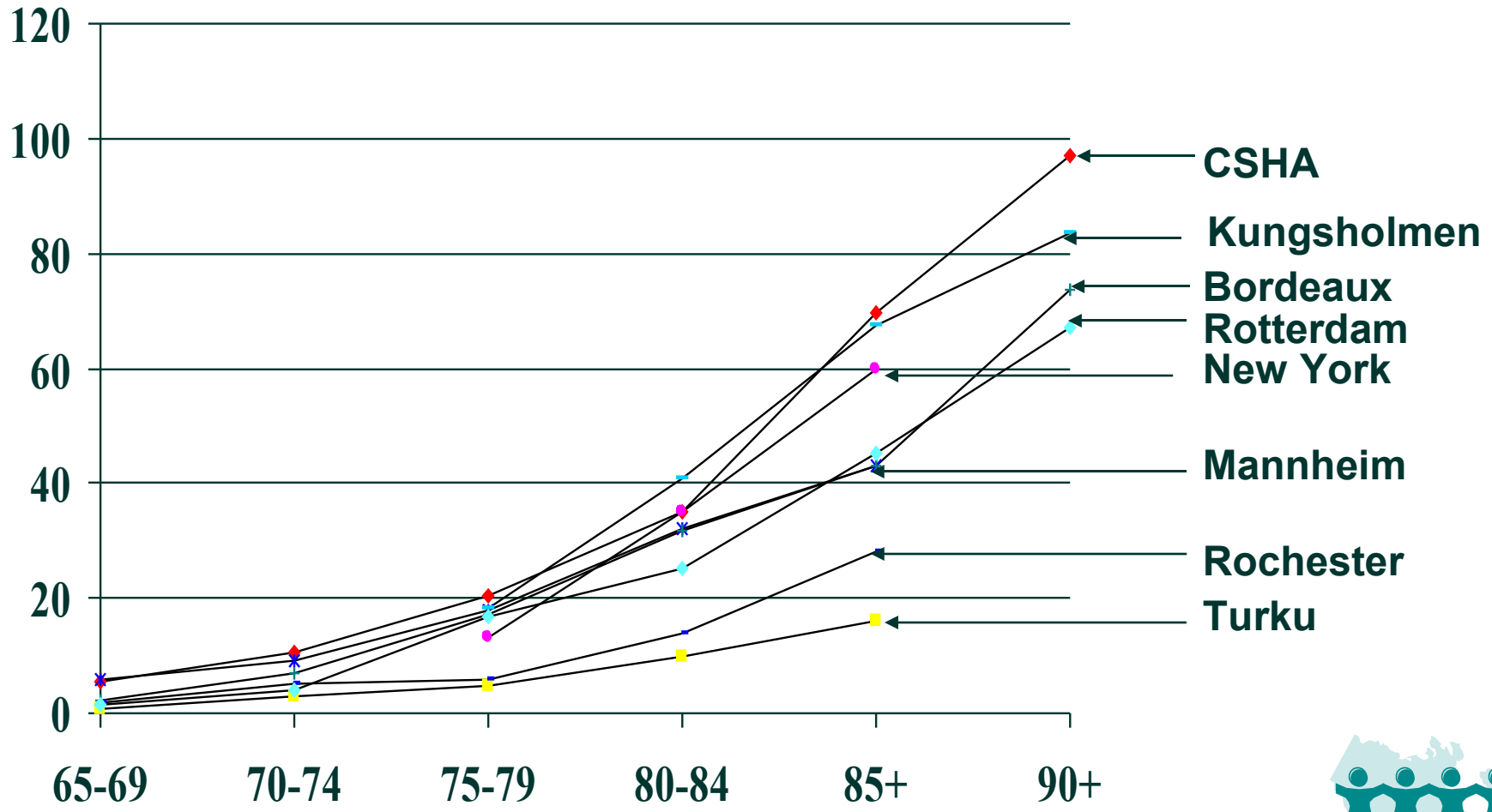
Age-Specific Incidence of Dementia, per thousand (whole population) in selected studies



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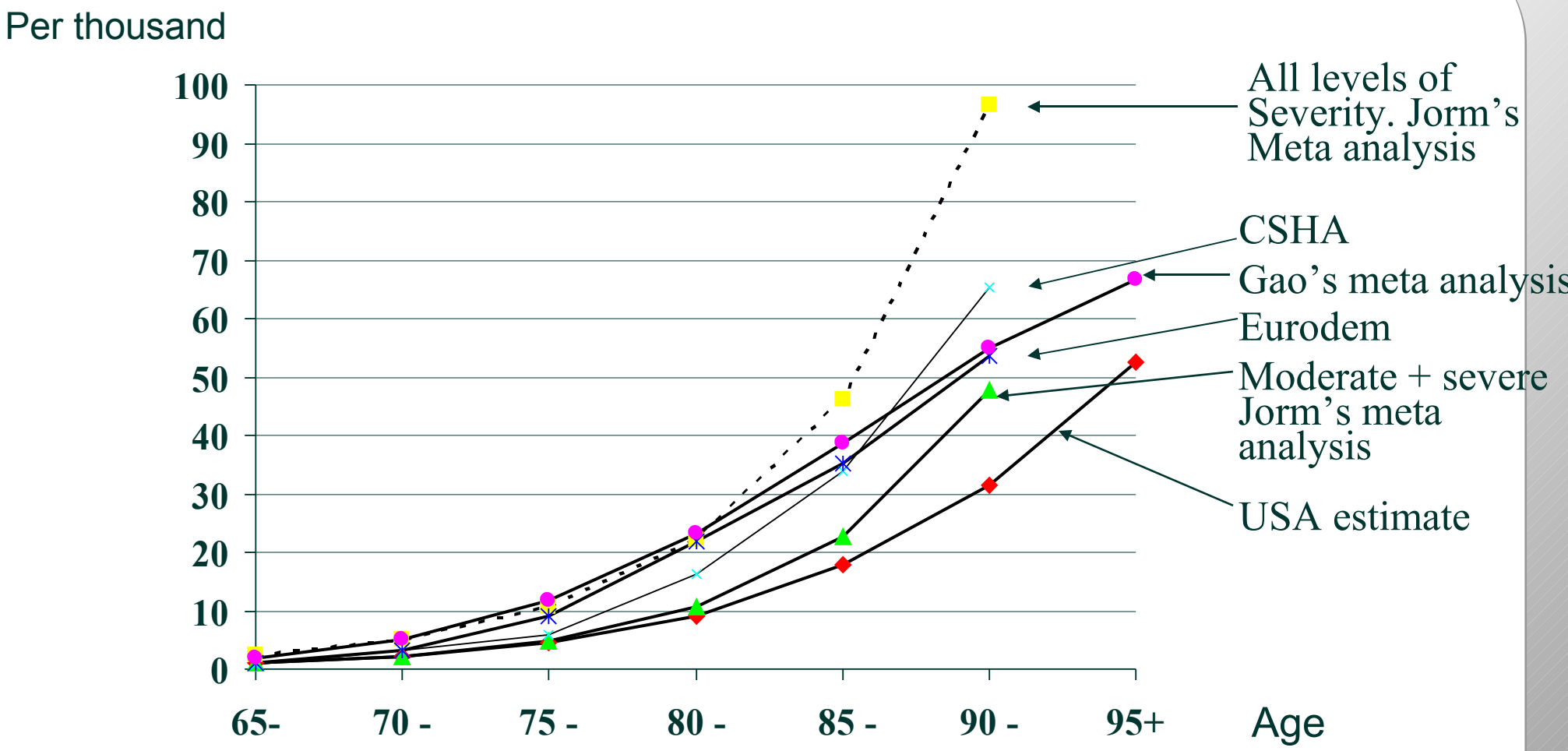

Estimates of the incidence of Alzheimer's disease from selected studies

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Risk Factors for Alzheimer's Disease (CSHA-1 Case-Control Study)

	OR	95% CI
• One or more relatives with AD	2.6	1.5 - 4.5
• 0-6 yrs education	4.0	2.5 - 6.4
• Occupational exposure to glues	2.2	1.3 - 3.7
• Head injury	1.7	0.97 - 2.8
• Arthritis	0.5	0.4 - 0.8
• Use of NSAID drugs	0.6	0.4 - 0.8

- Age of onset for smokers 80 yrs; nonsmokers 84 yrs.

Source: *Neurology* 1994;44:2073-80

Vascular Risk Factors

- Risk factors for vascular dementia include
  - living in a rural area or in an institution
  - age; low education
  - diabetes
  - depression; history of alcohol abuse
  - ApoE-4
  - hypertension or heart problems; taking aspirin
  - exposure to pesticides or fertilizers
- Regular exercise is protective (Hébert et al., 1995, 2000; Lindsay et al., 1997)
- Most vascular risk factors are being treated (Rockwood et al., 1997)

Other Risk Factors

- Age, 3MS score and an informant's report of memory problems are significant predictors of the development of dementia 5 years later (Hogan & Ebly, 2000)
- Age-standardized rates of dementia are highest among unmarried people, and for those who were previously married (Kristjansson et al., 2000)
- Hypertension is associated with a lower prevalence of Alzheimer's disease (OR 0.38) (Rockwood et al., 1996)
- Smoking is not a risk factor for AD, but it may interact with alcohol consumption (Tyas et al., 2000)

Who Cares for People with Dementia in the Community?
(Data from CSHA-1)

- 2.4% of people with dementia have no caregiver (~ 3,000 in Canada)
- 8% have only one person to care for them
- 29% live alone (~ 34,000 in Canada)
- 45% live with only one other person
- People with dementia have fewer friends or relatives than people without dementia.

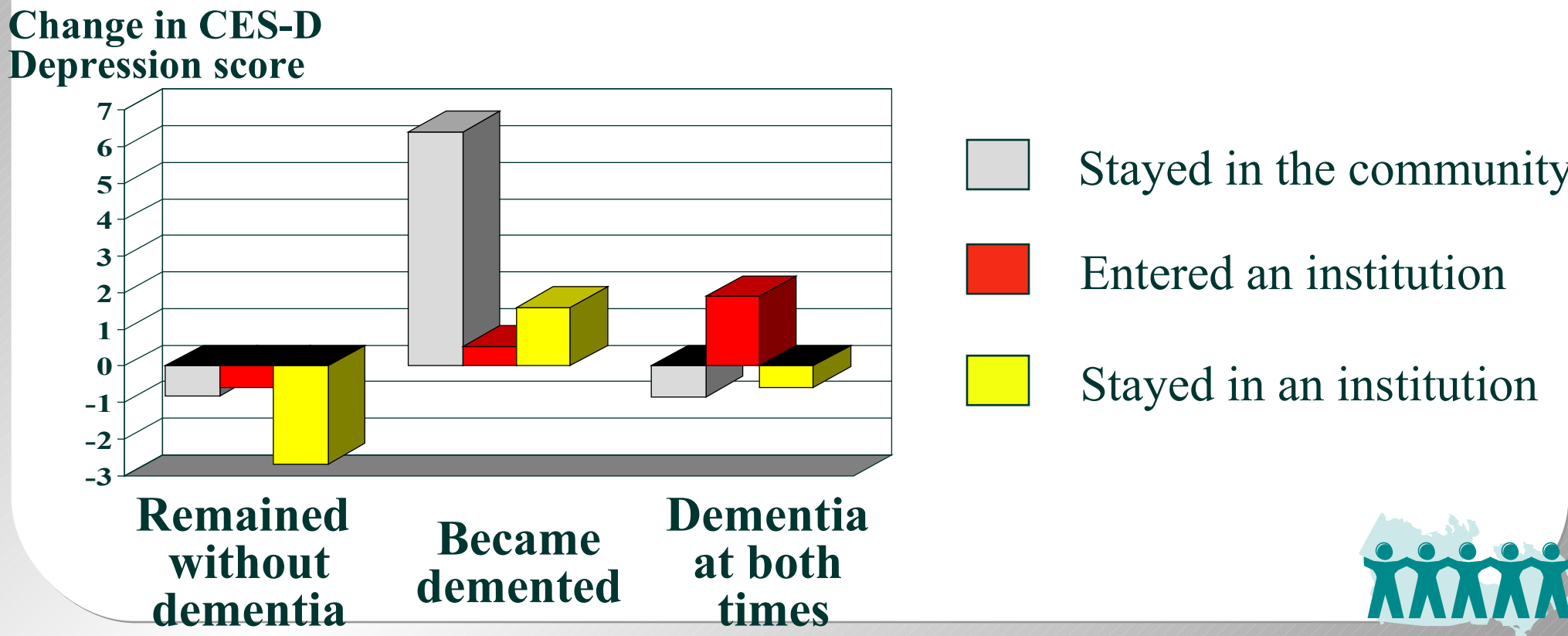
Source: *Can J Aging* 1994;13:470-487

Caregiving Patterns

- Nearly one-third of people with dementia in the community live alone (Ebly et al., 1999)
- Caregivers for people with dementia who live alone provide less hands-on care, suffer less stress and are more likely to have considered institutional admission (Ebly et al., 1999)
- Those with dementia who live alone are at higher risk of adverse outcomes, but are no more likely to die than others (Tuokko et al., 1999)

We studied the impact of a diagnosis of dementia on changes in the caregiver's health between 1991 and 1996.

These results suggest that depression increased mainly in caregivers of people who developed dementia but who remained in the community



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Caregiver Burden

- Caregiver stress rises with behavioral problems of the care recipient (aimlessness, aggression, etc.) (Chappell & Penning, 1996)
- Caregiver burden increases with more disturbing behavior, combined with lower social support (Clyburn et al., 2000)
- Caregiver and patient characteristics predict depression among dementia caregivers: (Meshefedjian et al., 1998)
- The hopelessness theory of depression applied to caregivers (O'Rourke et al., 1997)

The Economics of Dementia

- Østbye (1994) estimated the annual cost of dementia at $3,901,500,000 in Canada. This includes hospitals, institutions, community care, drugs, etc.
- Hux et al. (1998) showed that costs rise with the severity of AD, from $9,451 per year for mild disease, to $36,794 for severe disease.
- Expenditures on community care rises for those with cognitive impairments (Shapiro, 1997)

Cognitive Impairment, not Dementia

- CIND is twice as common as dementia (Graham, 1997; Ebly, 1995)
- At least 10 etiologies lead to cognitive impairment (Tuokko et al., 2000)
- Mortality rates are lowest for those who are cognitively normal, and increase with the degree of cognitive impairments (Hill et al., 1997)
- After five years, half of those with cognitive impairment had died. Of survivors, half progressed to dementia (Tuokko et al., 2000)

Validation of 3MS Screening Test

- Sensitivity, speficity (McDowell et al., 1997)
- Reliability (Bravo & Hébert, 1997)
- French translation & norms (Hébert, 1992)
- Comparisons with MMSE and other tests (Bravo & Hébert 1997; McDowell et al., 1997)
- Reference values & norms (Tombaugh, 1996; Bravo & Hébert 1997)
- Corrections for age and educational level (Bravo & Hébert 1997)
- Adding questions on disability does not improve sensitivity of 3MS (Rockwood et al., 1994)

Neuropsychology

- Tuokko and Woodward (1996) produced norms from the CSHA sample for 11 neuropsychological tests
- Crossley et al. (1997) compared verbal fluency tests in identifying AD, showing that letter and category tests both identify AD, but the former is associated with education
- There do appear to be language biases in several neuropsychological tests (Steenhuis & Østbye, 1995; Tuokko et al., 1995)
- Tuokko et al. (2000) compared five ways to score the Clock Drawing task