

XXII Congresso Nazionale
Società Italiana di Alcologia
Villa Gualino (To), 10 Novembre 2011



150 dall'Unità d'Italia: Storia e realtà del rapporto tra Italiani e alcol

ALCOL, DEFICIT COGNITIVO, DEMENZA

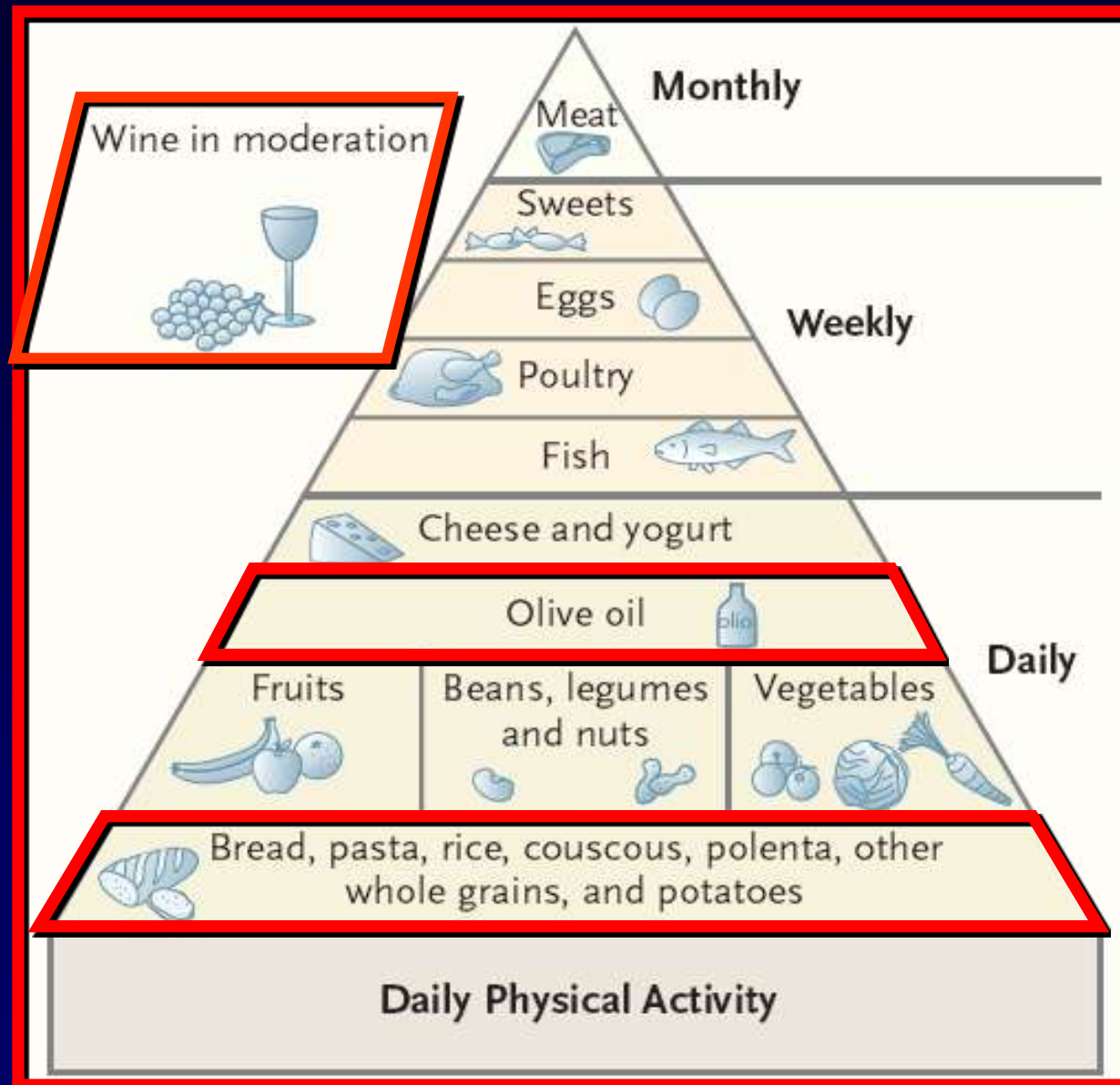
Vincenzo Solfrizzi

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Sezione di Geriatria e Centro Sovraziendale per le Malattie Rare

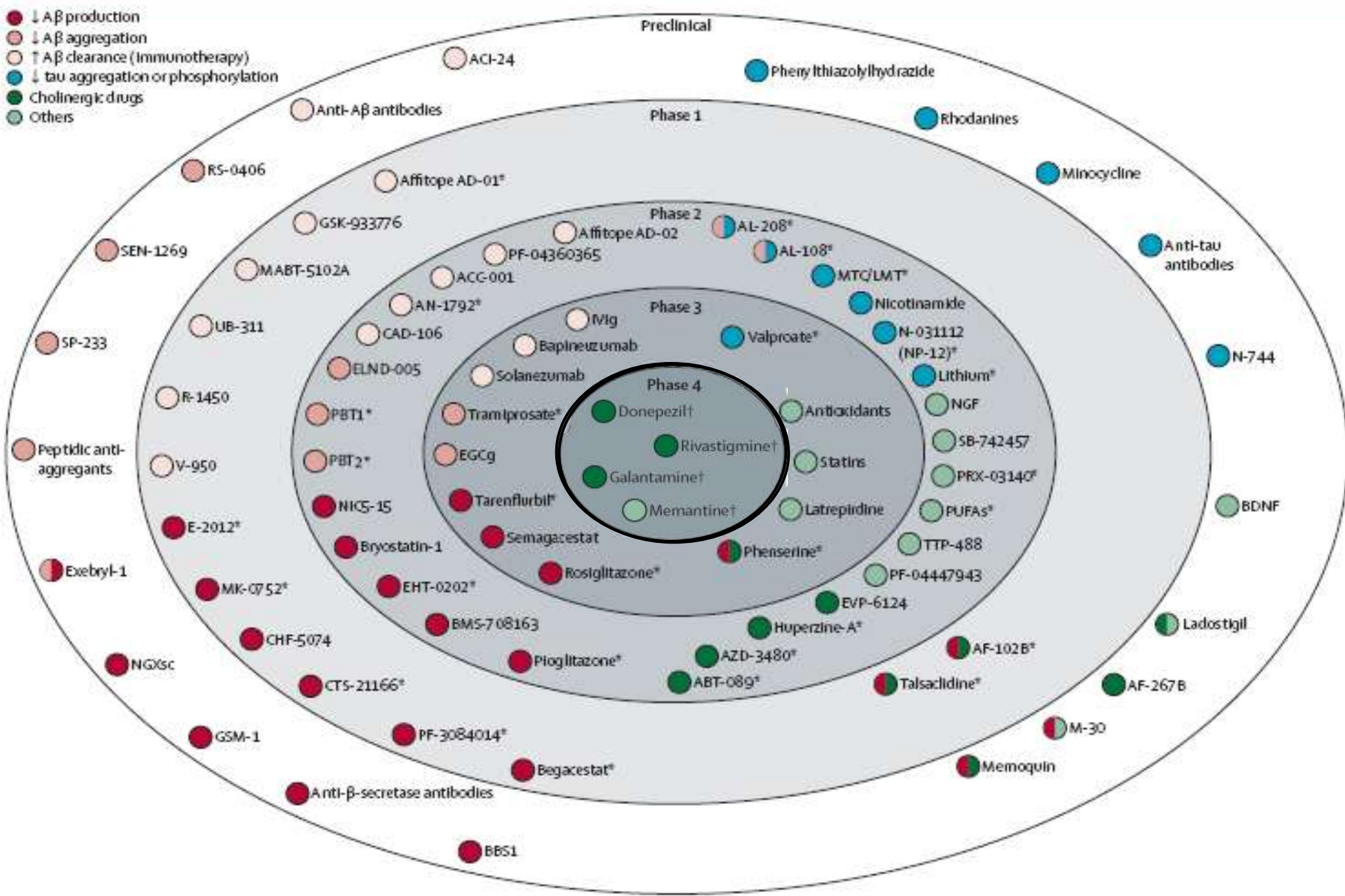
Centro per lo Studio dell'Invecchiamento Cerebrale e delle Demenze

FOOD PYRAMID REFLECTING THE TRADITIONAL HEALTHY MEDITERRANEAN DIET



Willett W et al Am J Clin Nutr 1995; 61:Suppl:1402S-1406S.

- ↓ Aβ production
- ↓ Aβ aggregation
- ↑ Aβ clearance (immunotherapy)
- ↓ tau aggregation or phosphorylation
- Cholinergic drugs
- Others

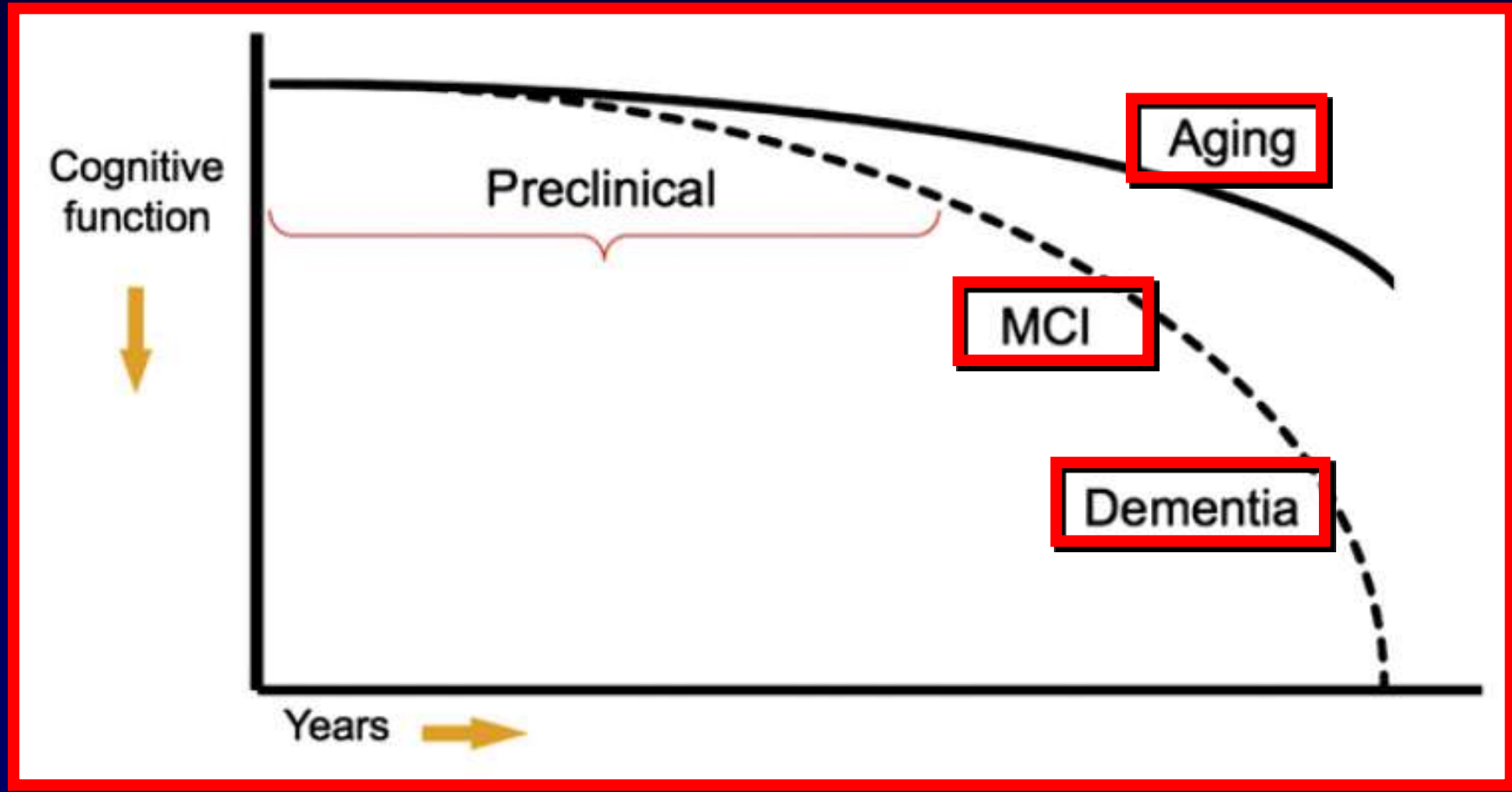


Ⓜ Prevention of cognitive decline in ageing: dementia as the target, delayed onset as the goal

... the choice of endpoint is crucial, although with present knowledge the delay of dementia onset seems to be the only realistic endpoint.⁹ Because age is the strongest determinant of dementia, an intervention should be regarded as effective if disease onset can be postponed.

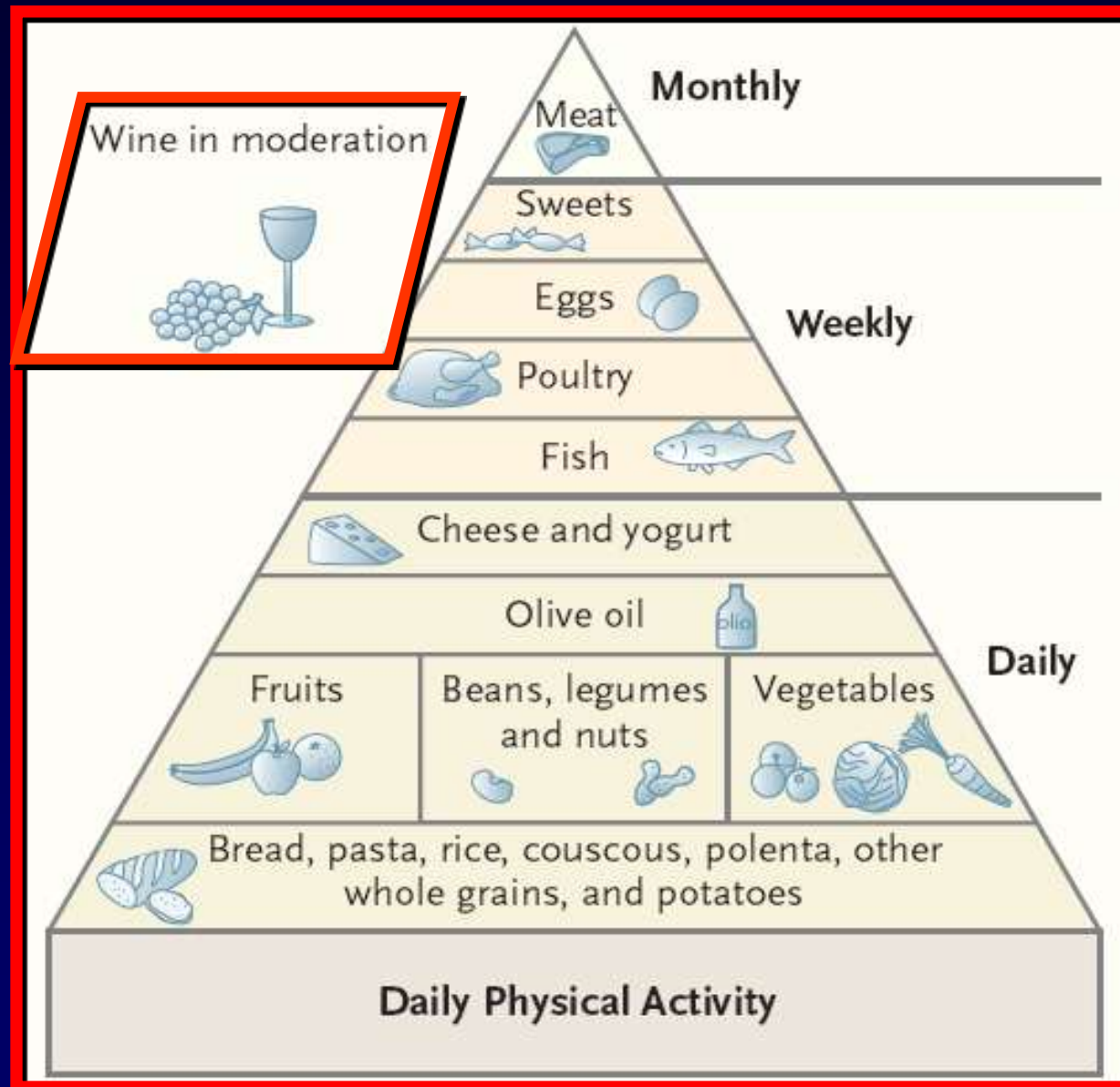
Fratiglioni L et al Lancet Neurol. 2011 Sep;10(9):778-9

THE CONTINUUM OF ALZHEIMER'S DISEASE



R.A. Sperling et al. / Alzheimer's & Dementia- (2011) 1–13

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Willett W et al Am J Clin Nutr 1995; 61:Suppl:1402S-1406S.

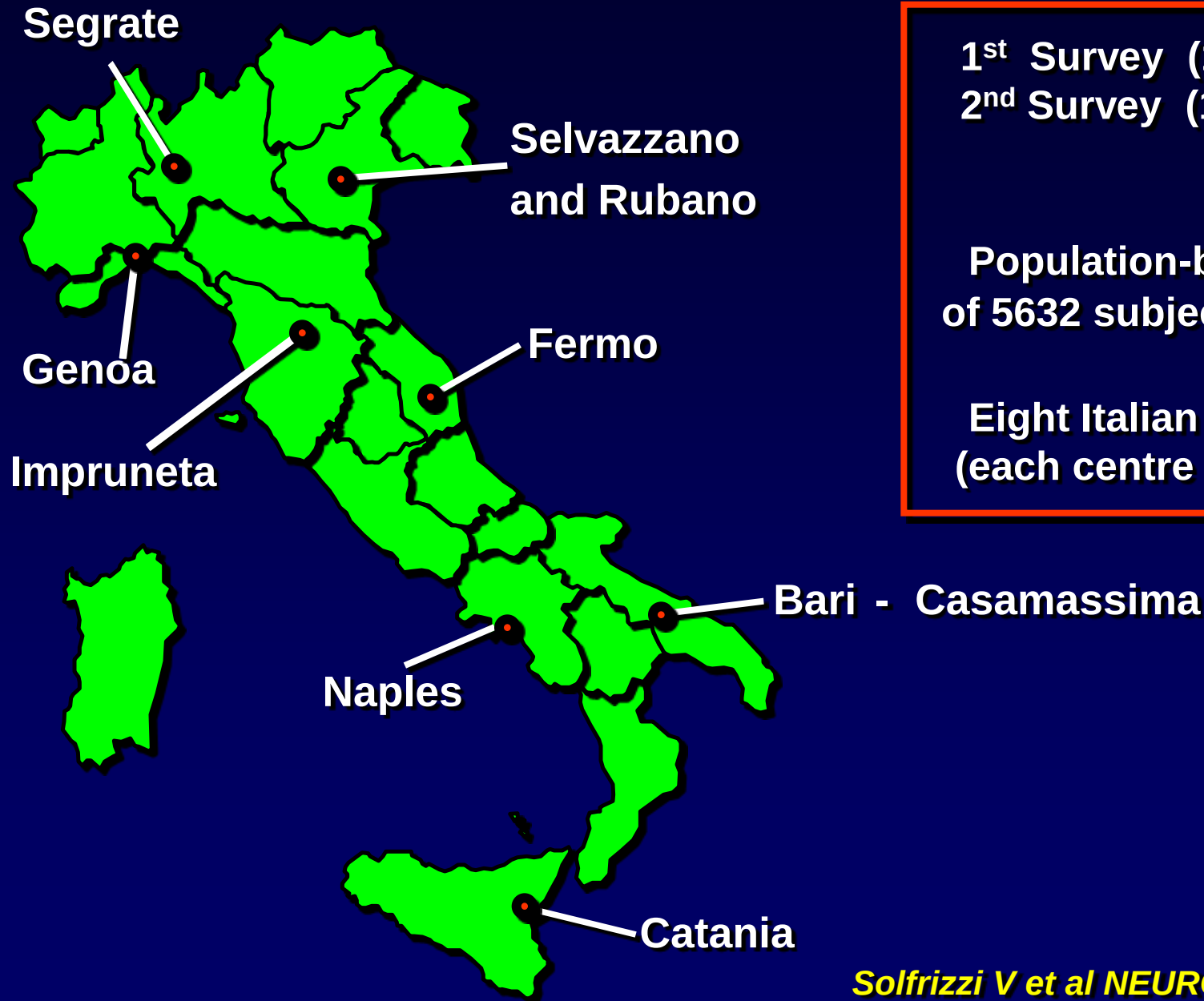
***ALCOHOL CONSUMPTION,
MILD COGNITIVE IMPAIRMENT,
AND PROGRESSION TO DEMENTIA***

Alcohol consumption, mild cognitive impairment, and progression to dementia

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ABSTRACT Objective: To estimate the impact of alcohol consumption on the incidence of mild cognitive impairment and its progression to dementia. **Methods:** We evaluated the incidence of mild cognitive impairment in 1,445 non-cognitively impaired individuals and its progression to dementia in 121 patients with mild cognitive impairment, aged 65 to 84 years, participating in the Italian Longitudinal Study on Aging, with a 3.5-year follow-up. The level of alcohol consumption was ascertained in the year before the survey. Dementia and mild cognitive impairment were classified using current clinical criteria. **Results:** Patients with mild cognitive impairment who were moderate drinkers, i.e., those who consumed less than 1 drink/day (approximately 15 g of alcohol), had a lower rate of progression to dementia than abstainers (hazard ratio [HR] 0.15; 95% CI 0.03 to 0.78). Furthermore, moderate drinkers with mild cognitive impairment who consumed less than 1 drink/day of wine showed a significantly lower rate of progression to dementia than abstainers (HR 0.15; 95% CI 0.03 to 0.77). Finally, there was no significant association between higher levels of drinking (≥ 1 drink/day) and rate of progression to dementia in patients with mild cognitive impairment vs abstainers. No significant associations were found between any levels of drinking and the incidence of mild cognitive impairment in non-cognitively impaired individuals vs abstainers. **Conclusions:** In patients with mild cognitive impairment, up to 1 drink/day of alcohol or wine may decrease the rate of progression to dementia.

ITALIAN LONGITUDINAL STUDY ON AGING - ILSA



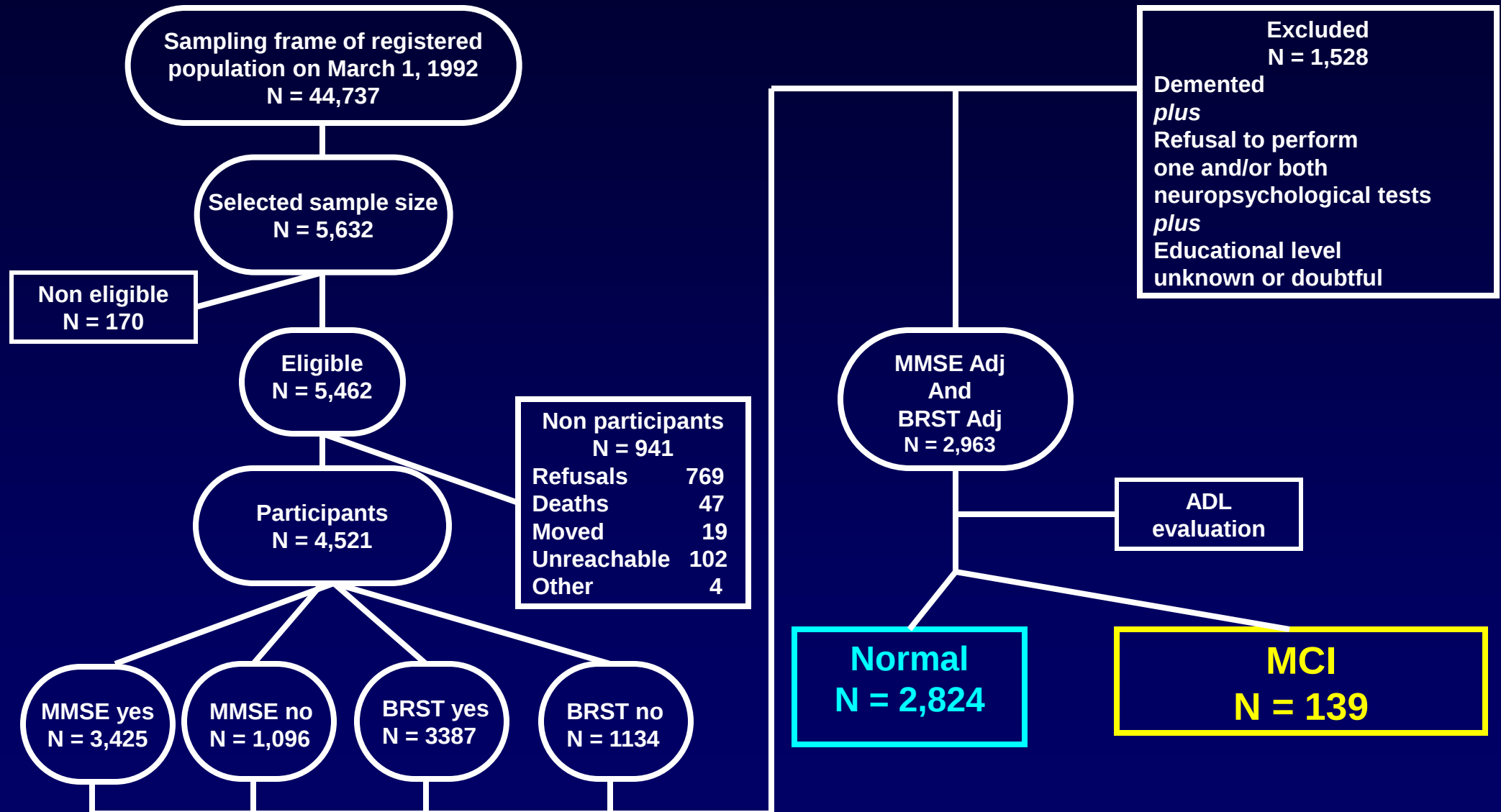
1st Survey (1992-1993)

2nd Survey (1995-1996)

**Population-based sample
of 5632 subjects (65–84 yrs)**

**Eight Italian Municipalities
(each centre = 704 subjects)**

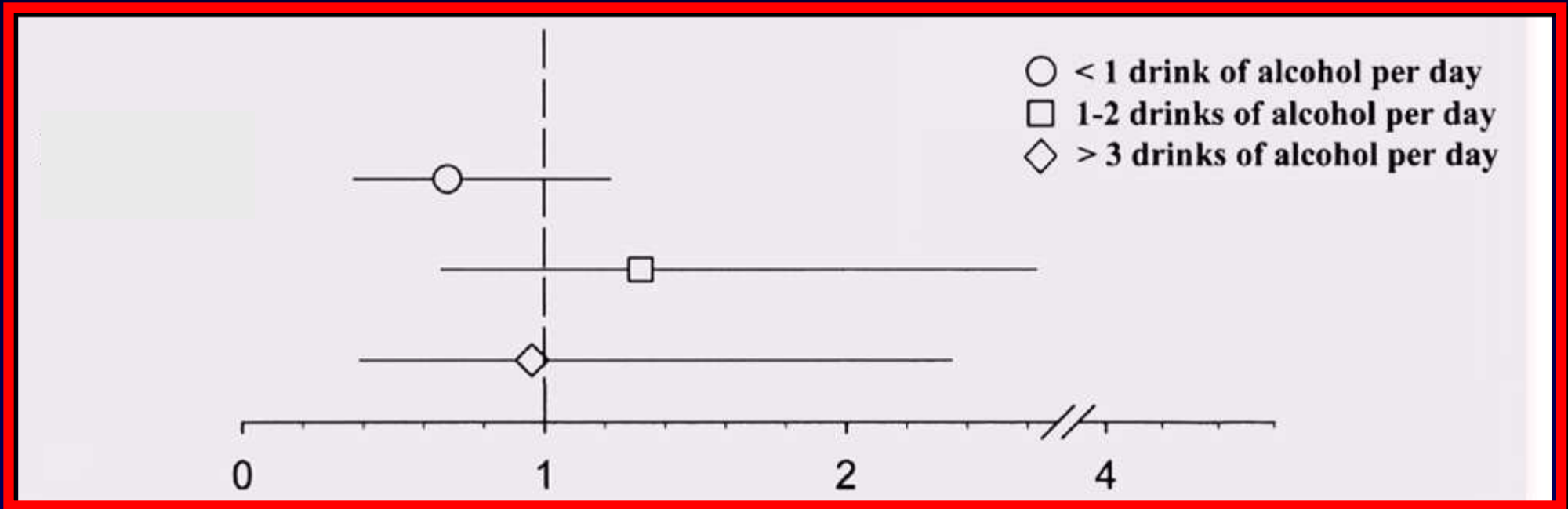
Attrition of the study population at the different phases of the survey (ILSA)



ALCOHOL CONSUMPTION AND RISK OF PROGRESSION OF MCI TO DEMENTIA

	Category (drink/day), current			
	None	<1	1 or 2	>2
	HR (95% CI)			
Total alcohol consumption				
Partially adjusted model, HR (95% CI)	1.00	0.18 (0.04-0.81)	0.56 (0.09-3.56)	0.37 (0.04-3.16)
Fully adjusted model, HR (95% CI)	1.00	0.15 (0.03-0.78)	0.47 (0.08-2.73)	0.44 (0.05-4.06)
Wine				
Partially adjusted model, HR (95% CI)	1.00	0.18 (0.04-0.81)	0.54 (0.08-3.46)	0.31 (0.03-3.23)
Fully adjusted model, HR (95% CI)	1.00	0.15 (0.03-0.77)	0.44 (0.07-2.64)	0.36 (0.03-4.26)

MULTIVARIATE HAZARD RATIOS OF INCIDENT MCI AMONG NON-COGNITIVELY IMPAIRED SUBJECTS



The fully adjusted coefficients were adjusted for gender (0 for men and 1 for women), age (coded 0 for 65- to 74-year-old and 1 for 75- to 84-year-old subjects), education (coded 0 for ≤ 3 years and 1 for >3 years), cigarette pack-years (coded 0 for cigarette pack-years never smoking and 1 for ever smoking), coronary artery disease (coded 0 if not affected and 1 if affected), stroke (coded 0 if not affected and 1 if affected), Type 2 diabetes (coded 0 if not affected and 1 if affected), hypertension (coded 0 if not affected and 1 if affected), total cholesterol (in ordered quartiles), and anxiolytics (coded 0 if not used and 1 if used).

ALCOHOL CONSUMPTION, COGNITIVE DECLINE, AND DEMENTIA

A sistematic review

SYSTEMATIC REVIEW

Alcohol, dementia and cognitive decline in the elderly: a systematic review

Peters R et al Age and Ageing 2008 37(5):505-512

CRITICAL REVIEW ARTICLE

Alcohol Consumption as a Risk Factor for Dementia and Cognitive Decline: Meta-Analysis of Prospective Studies

Anstey KJ et al Am J Geriatr Psychiatry 2009; 17:542–555

Neuropsychiatric Disease and Treatment

Dovepress

open access to scientific and medical research

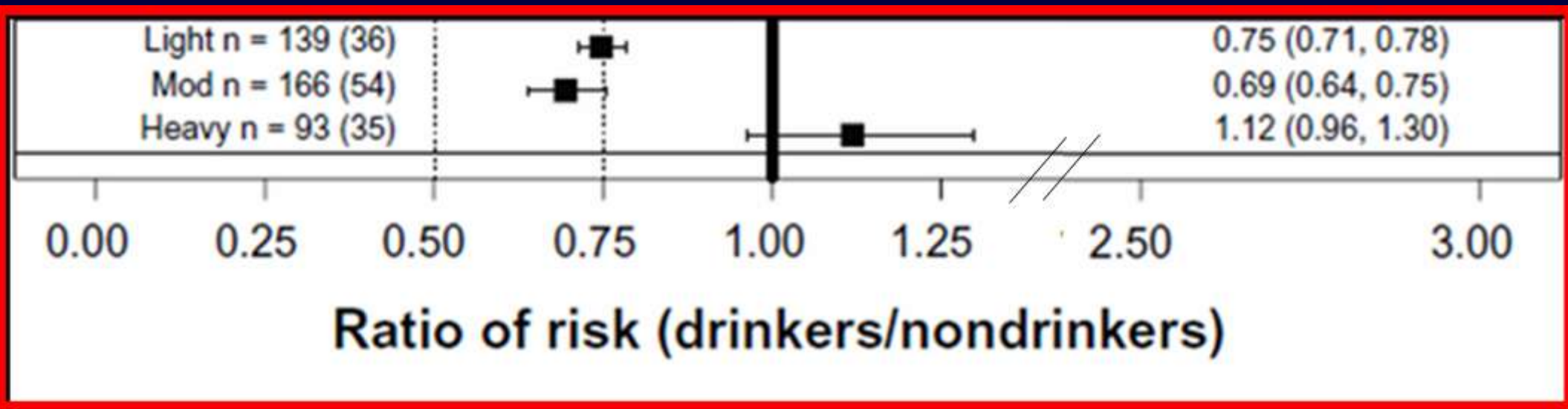
 Open Access Full Text Article

REVIEW

Moderate alcohol consumption and cognitive risk

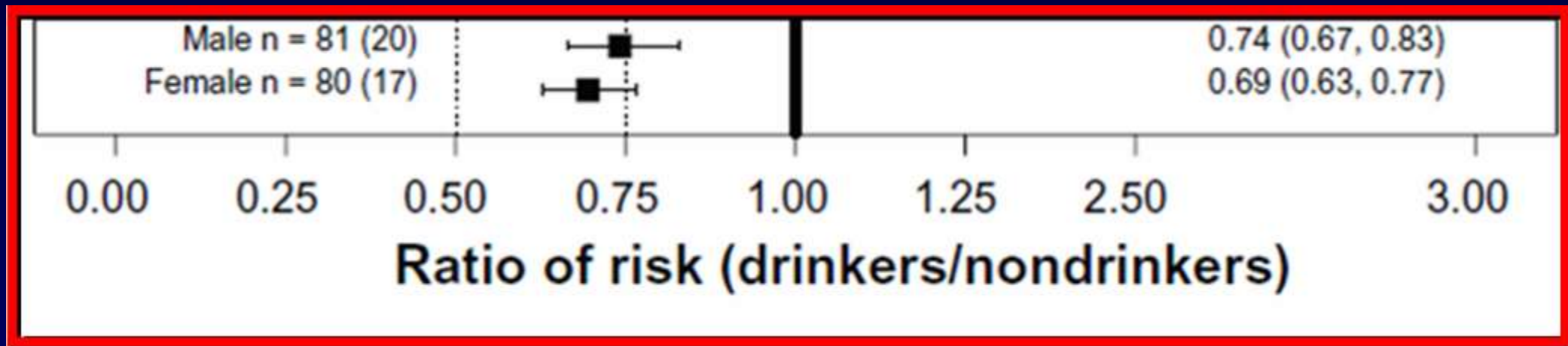
Neafsey and Collins Neuropsychiatric Disease and Treatment 2011;7 465–484

DO LIGHT, MODERATE, AND HEAVY DRINKING HAVE DIFFERENT EFFECTS ON COGNITIVE RISK?



Moderate drinking: 1 drink/day for women
2 drink/day for men

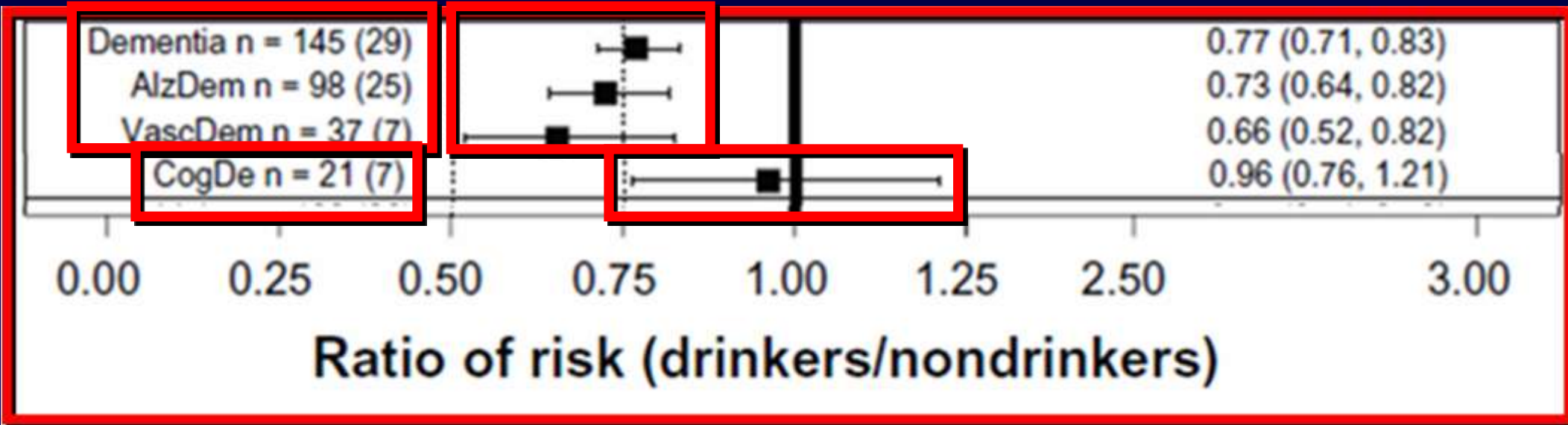
DOES THE SEX OF THE DRINKER ALTER THE EFFECT OF ALCOHOL ON COGNITION?



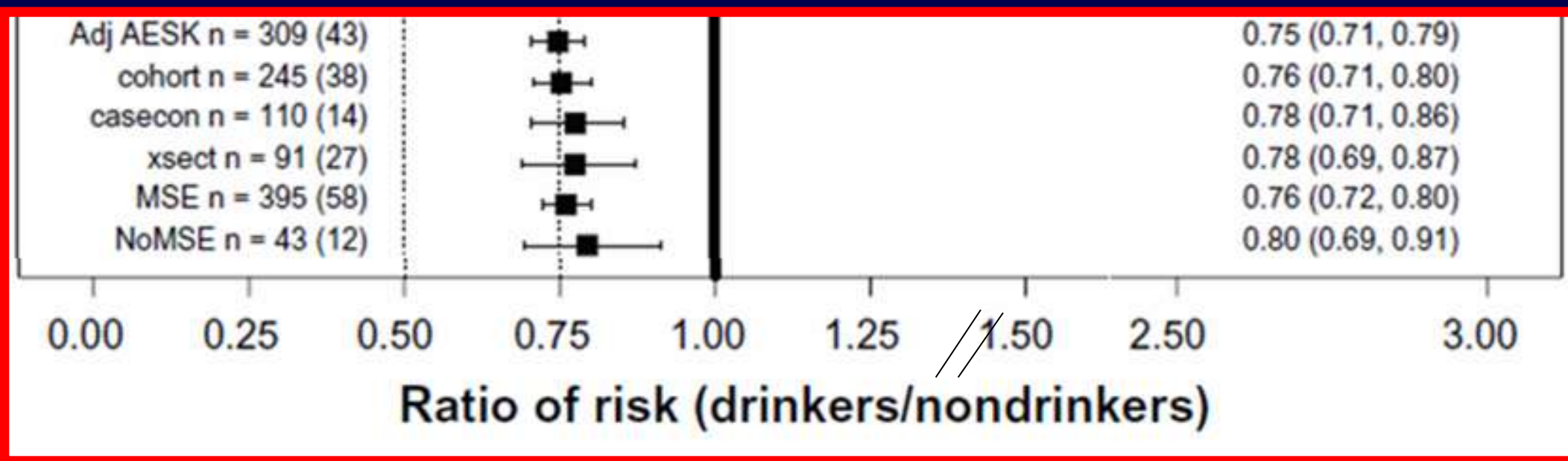
DOES THE APOEE4 ALLELE ALTER THE EFFECT OF ALCOHOL ON COGNITION?



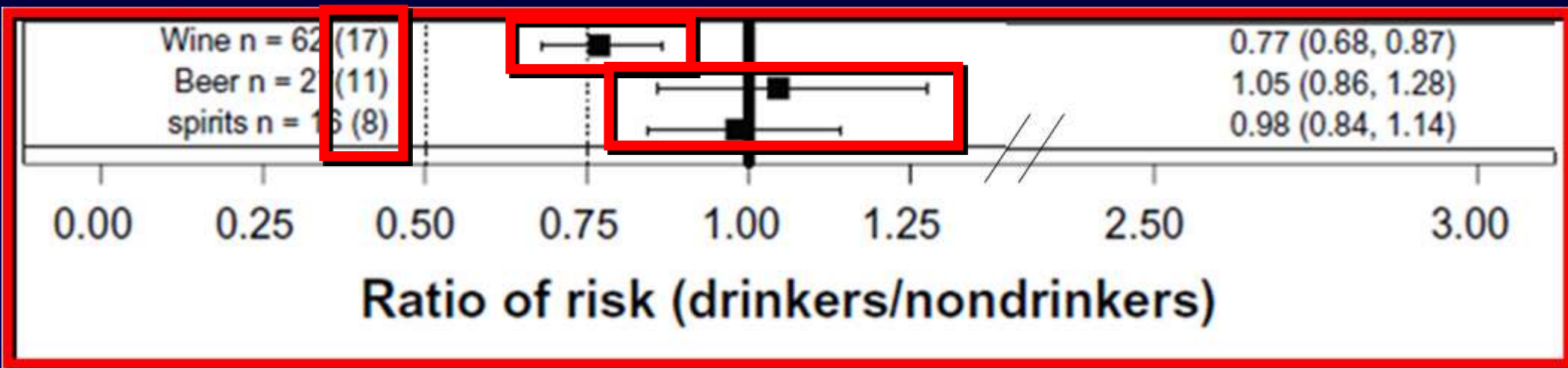
ARE THERE DIFFERENT EFFECTS OF MODERATE DRINKING ON GENERAL DEMENTIA, AD, VASCULAR DEMENTIA, AND COGNITIVE DECLINE?



1. THE ADJUSTMENT FOR AGE, EDUCATION, SEX, AND SMOKING CHANGE THE EFFECT OF ALCOHOL ON COGNITIVE RISK (AESK)?
2. ARE THERE ANY SIGNIFICANT DIFFERENCES AMONG LONGITUDINAL COHORT STUDIES, CASE-CONTROL STUDIES, OR CROSS-SECTIONAL STUDIES?
3. STUDIES USING MENTAL STATUS EXAMS AND THOSE USING OTHER METHODS FOR MEASURING COGNITION?



DO DIFFERENT TYPES OF ALCOHOL (WINE, BEER, AND SPIRITS) AFFECT COGNITIVE RISK IN THE SAME WAY?



DISTRIBUTION OF ALCOHOL INTAKE PER DAY IN THE PREVIOUS YEAR OVER SUBTYPES OF ALCOHOLIC BEVERAGES IN NON-COGNITIVELY IMPAIRED (NCI) PARTICIPANTS AND IN PATIENTS WITH MCI AT BASELINE

Beer		Wine		Superalcoholic beverages	
Number of NCI individuals (%)	Median (IQR) drinks/day	Number of NCI individuals (%)	Median (IQR) drinks/day	Number of NCI individuals (%)	Median (IQR) drinks/day
Total		1,131 (78.3)	1.69 (0.85-1.69)	585 (40.5)	0.14 (0.04-1.08)
Men		721 (88.5)	1.69 (0.85-3.38)	416 (51)	0.14 (0.04-1.08)
Women		410 (65.1)	0.85 (0.85-0.85)	169 (26.8)	0.07 (0.01-0.14)

5%

7% Men

3% Women

80%

90% Men

65% Women

1 DRINK: 15 mg/day

Articles**Alcohol consumption and risk of dementia: the Rotterdam Study**

Rotterdam Study—a prospective population-based study of 7983 individuals aged 55 years and older. We studied all participants who did not have dementia at baseline (1990–93) and who had complete data on alcohol consumption (n=5395)

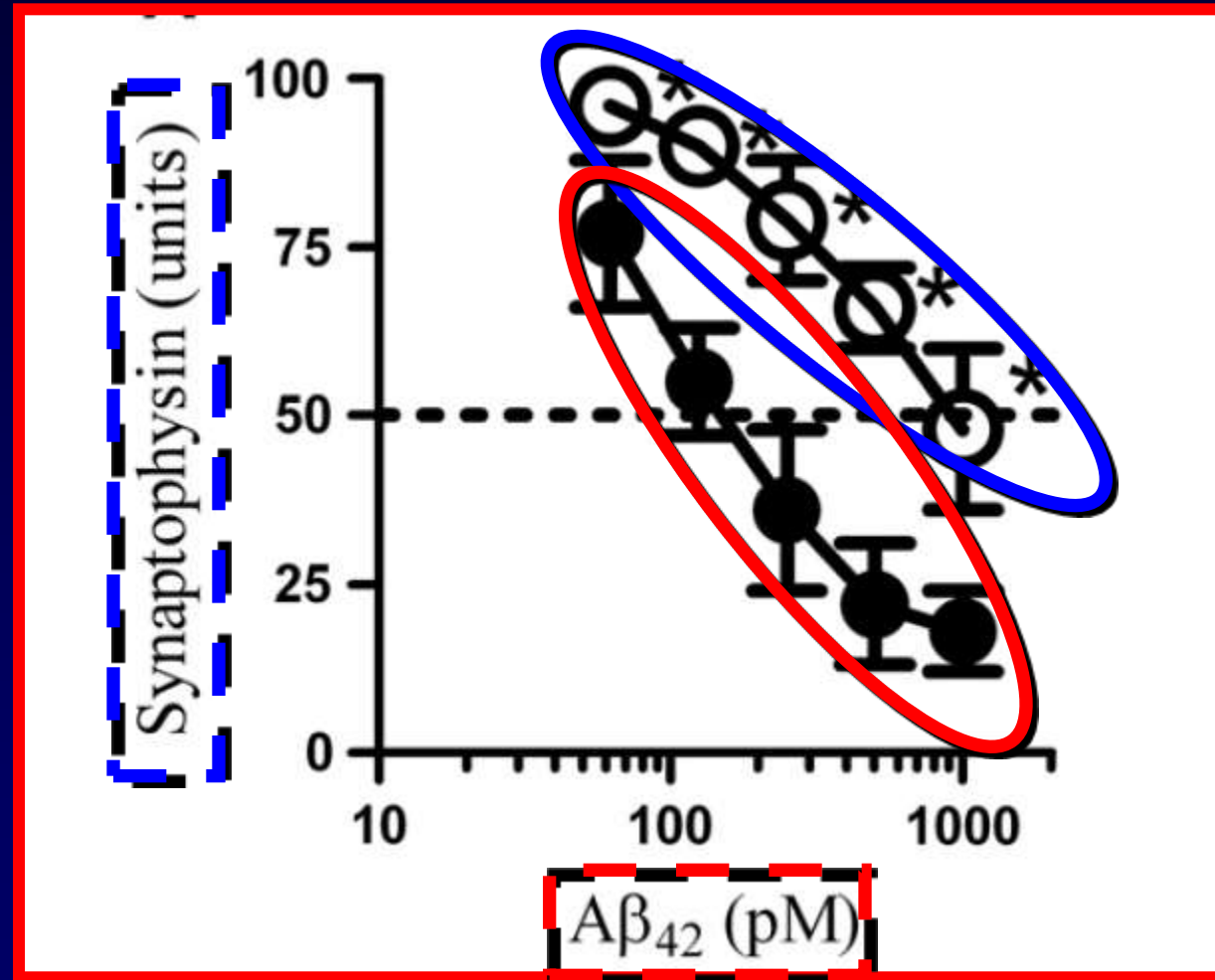
Ruitenberg, A et al Lancet 2002; 359: 281–86

DISTRIBUTION OF ALCOHOL INTAKE OVER SUBTYPES OF ALCOHOLIC BEVERAGE IN THE ROTTERDAM STUDY

	Beer		Wine		Liquor		Fortified wine
	Number of individuals	Median (IQR) drinks/day	Number of individuals	Median (IQR) drinks/day	Number of individuals	Median (IQR) drinks/day	Number of individuals
Total	1132 (21%)	0.31 (0.10–1.10)	1994 (37%)	0.14 (0.04–0.35)	1386 (35%)	0.90 (0.18–2.49)	1745 (32%)
Men	586 (14%)	0.34 (0.10–1.10)	856 (38%)	0.24 (0.06–0.55)	1338 (61%)	1.25 (0.36–2.49)	395 (18%)
Women	152 (5%)	0.14 (0.07–0.38)	1339 (42%)	0.12 (0.04–0.44)	548 (17%)	0.41 (0.08–1.30)	1350 (42%)

Ruitenbergh, A et al Lancet 2002; 359: 281–86

ETHANOL PROTECTS HIPPOCAMPAL NEURONS AGAINST A β ₄₂ INDUCED SYNAPSE DAMAGE



Bate C et al Neuropharmacology 2011

ALCOHOL AND NEUROPROTECTION

Possible mechanisms

1. Alcohol consumption might protect from dementia by effects on the cerebral vasculature
2. A protective effect of alcohol on cognitive function in moderate drinkers may be due to a relatively poor health status among abstainers or because cognitive status influences alcohol consumption and overall health status
3. Moderate lifestyles in general, which obviously vary according to different cultural environments, protect from cognitive impairment

ALCOHOL AND NEUROPROTECTION

Possible mechanisms

Moderate alcohol intake might protect against dementia, mainly for VaD via a reduction in vascular risk factors.

den Heijer T, et al Am J Clin Nutr 2004;80:992–997

Light-to-moderate alcohol use is associated with a lower prevalence of MRI-defined white matter lesions and subclinical infarcts

Mukamal KJ, et al JAMA 2003;289:1405–1413

Experimental studies found that ethanol initially increases hippocampal acetylcholine release, which could conceivably improve memory performance

Fadda F,. Prog Neurobiol 1998;56:385–431

ALCOHOL AND NEUROPROTECTION

Possible mechanisms

Wine consumption may exert a protective effect, through alcohol intake itself, through the antioxidant effects of polyphenols richly represented in red wine or through both

Howard A, et al Med Hypotheses 2002;59:101.

Bertelli AA, et al Ann NY Acad Sci 2002;957:295–301.

Processes that originate, modulate, or precipitate the deposition of amyloid beta in the brain, such as oxidative stress, rather than vascular processes, may better explain the development of AD

Heinonen IM. J Agric Food Chem 1998;46:25–31.

ALCOHOL AND NEUROPROTECTION

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