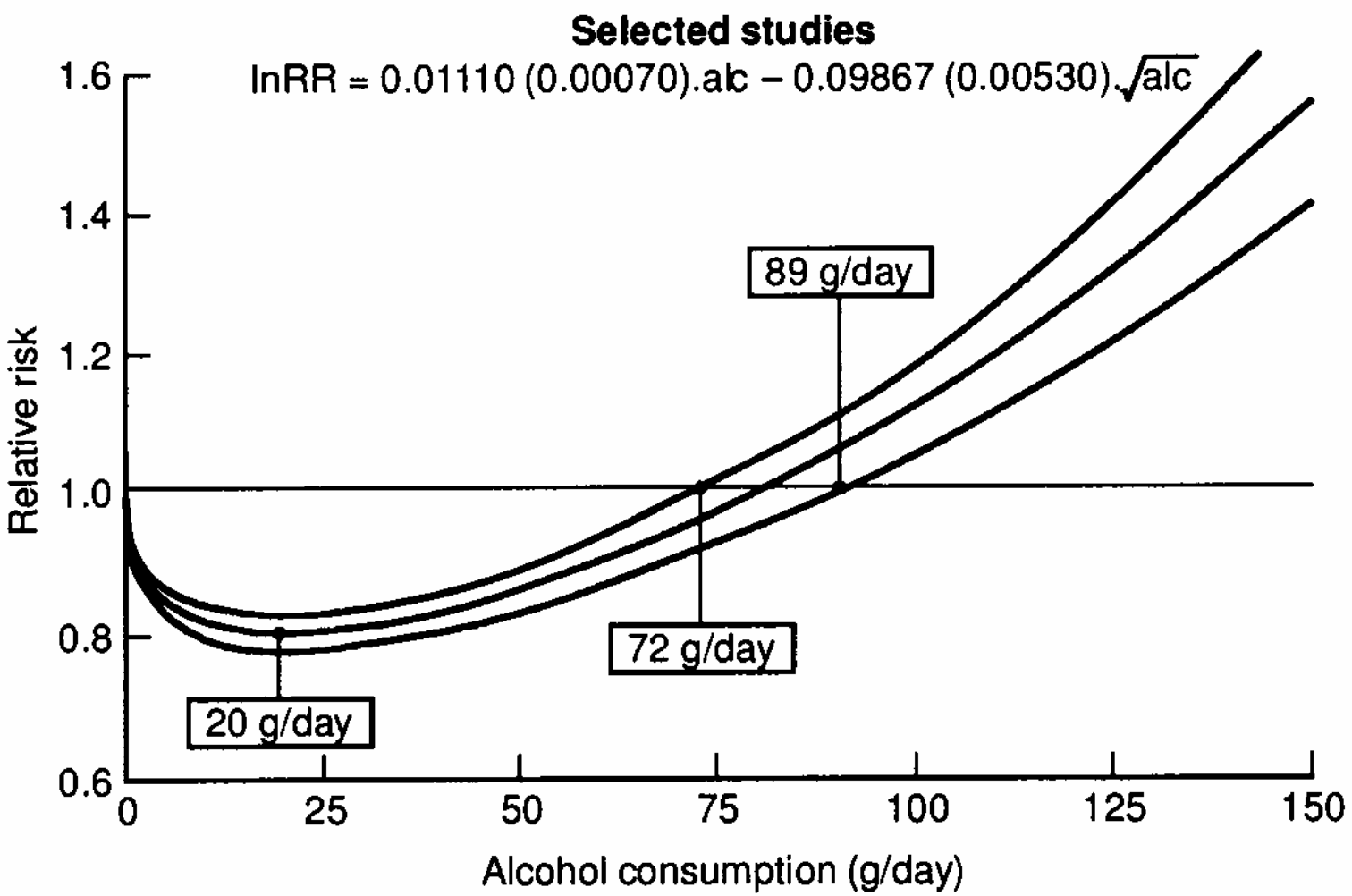
Alcohol - the story of the heart

Peter Anderson

Amsterdam, 23 September 2010.


Selected studies
lnRR = 0.01110 (0.00070).alc – 0.09867 (0.00530).√alc
Relative risk
1.6
1.4
1.2
1.0
0.8
0.6
89 g/day
72 g/day
20 g/day
0
25
50
75
100
125
150
Alcohol consumption (g/day)

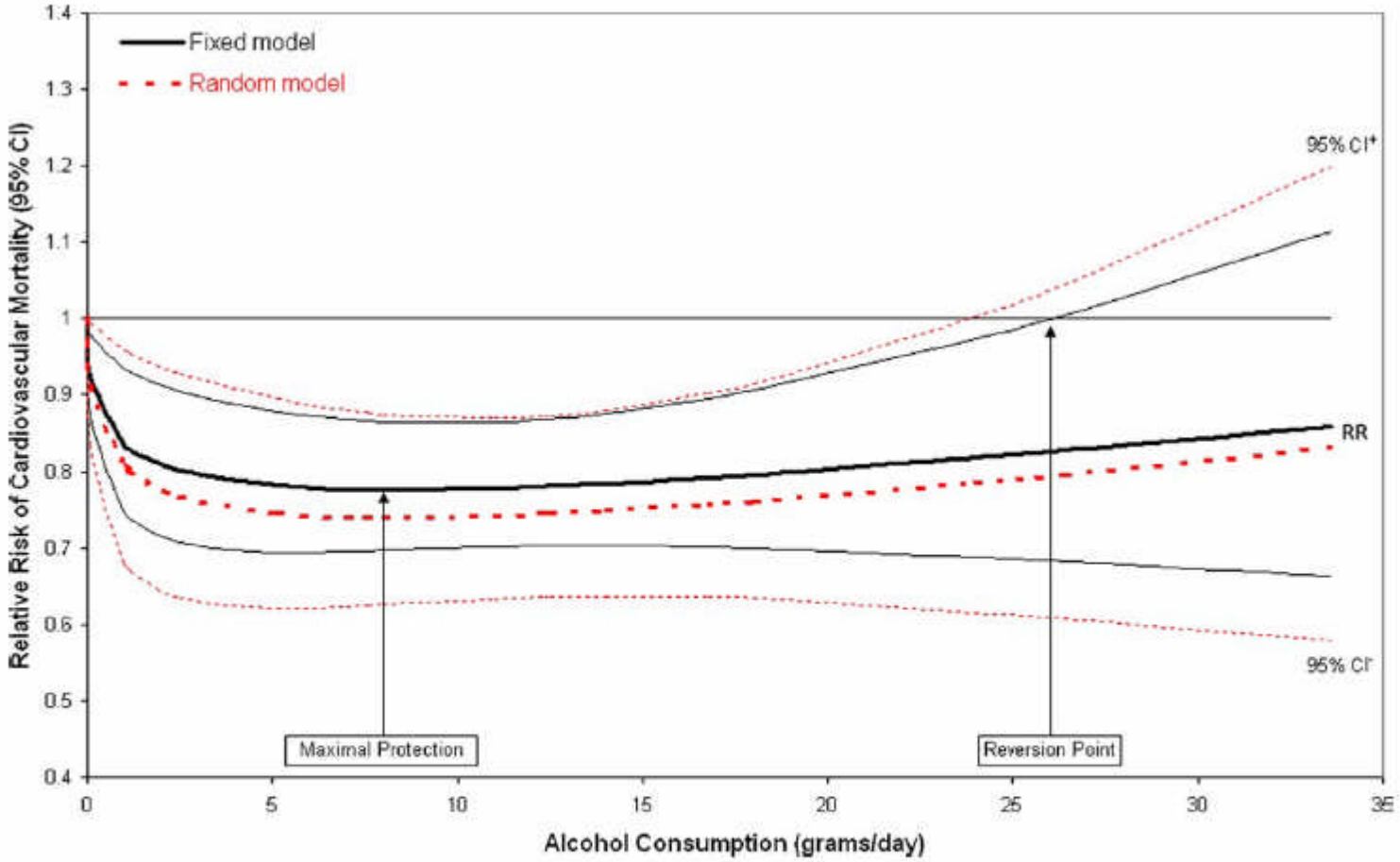
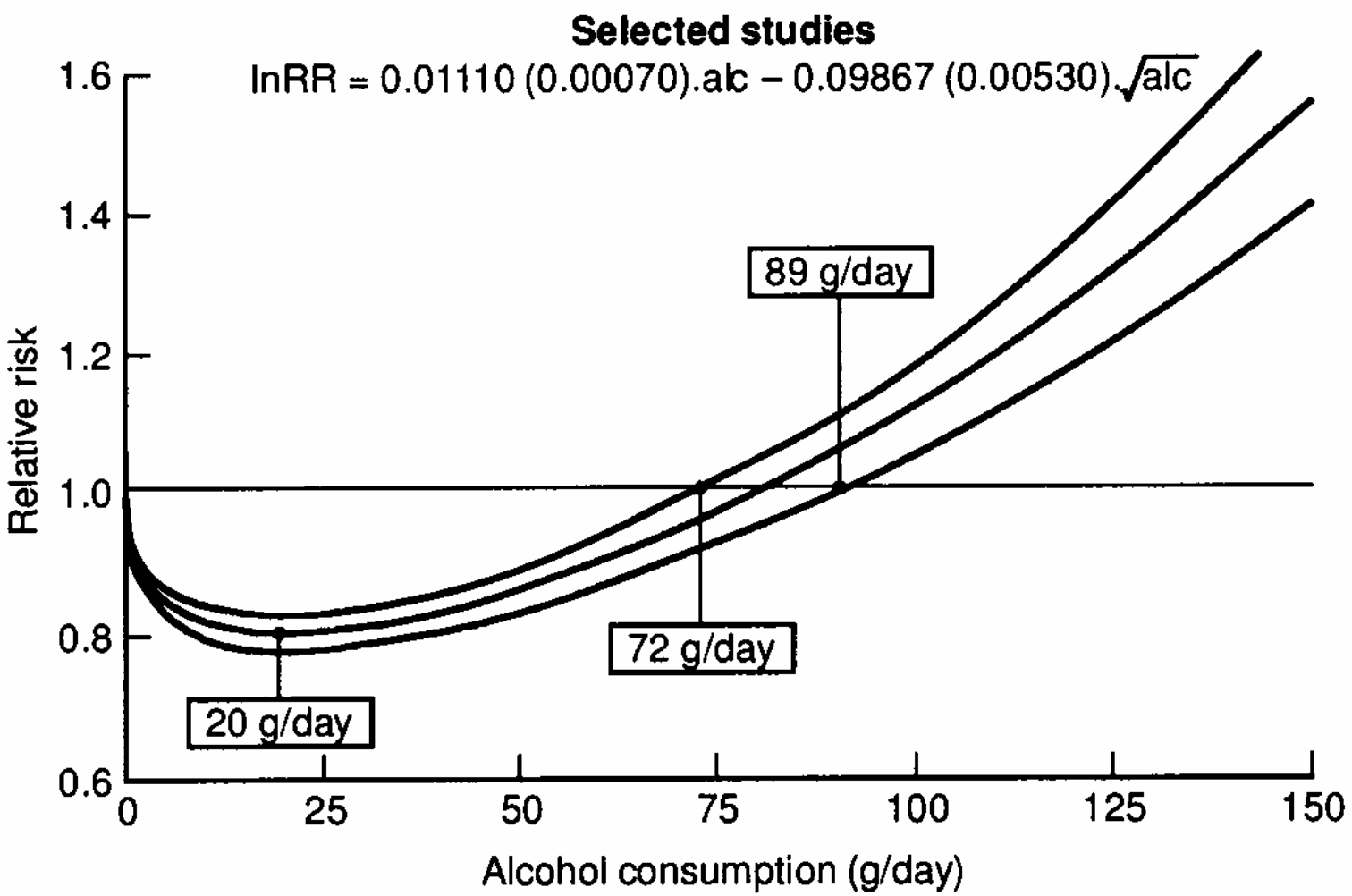


Figure 3 **Alcohol Consumption in Relation to Cardiovascular Mortality in Cardiovascular Disease Patients**

Pooled curves of relative risk of cardiovascular mortality and alcohol intake, extracted from 7 independent relationships using fixed **(solid lines)** and random **(dotted lines)** models. RR = relative risk; 95% CI^- = lower value of confidence interval; 95% CI^+ = upper value of confidence interval.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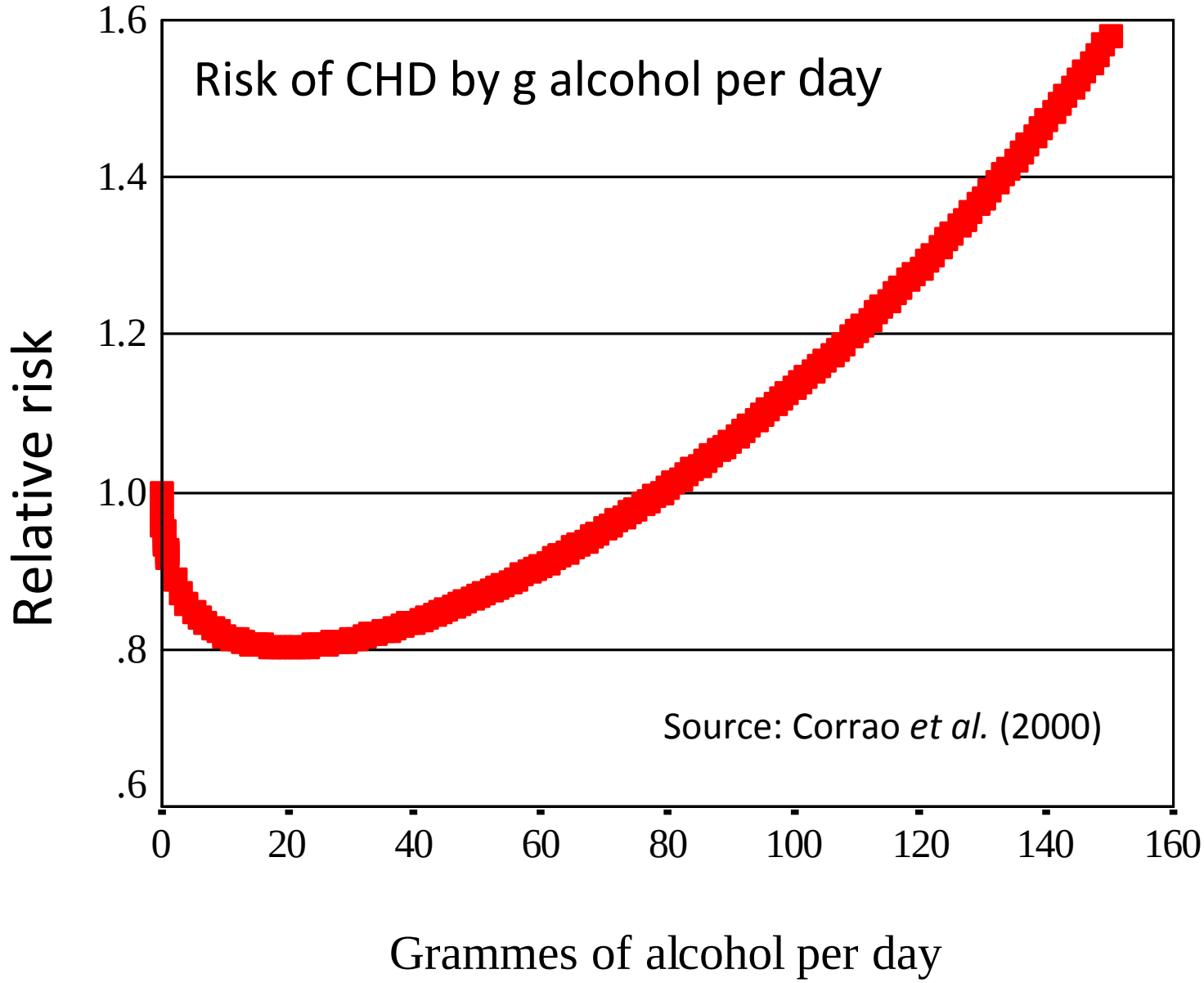
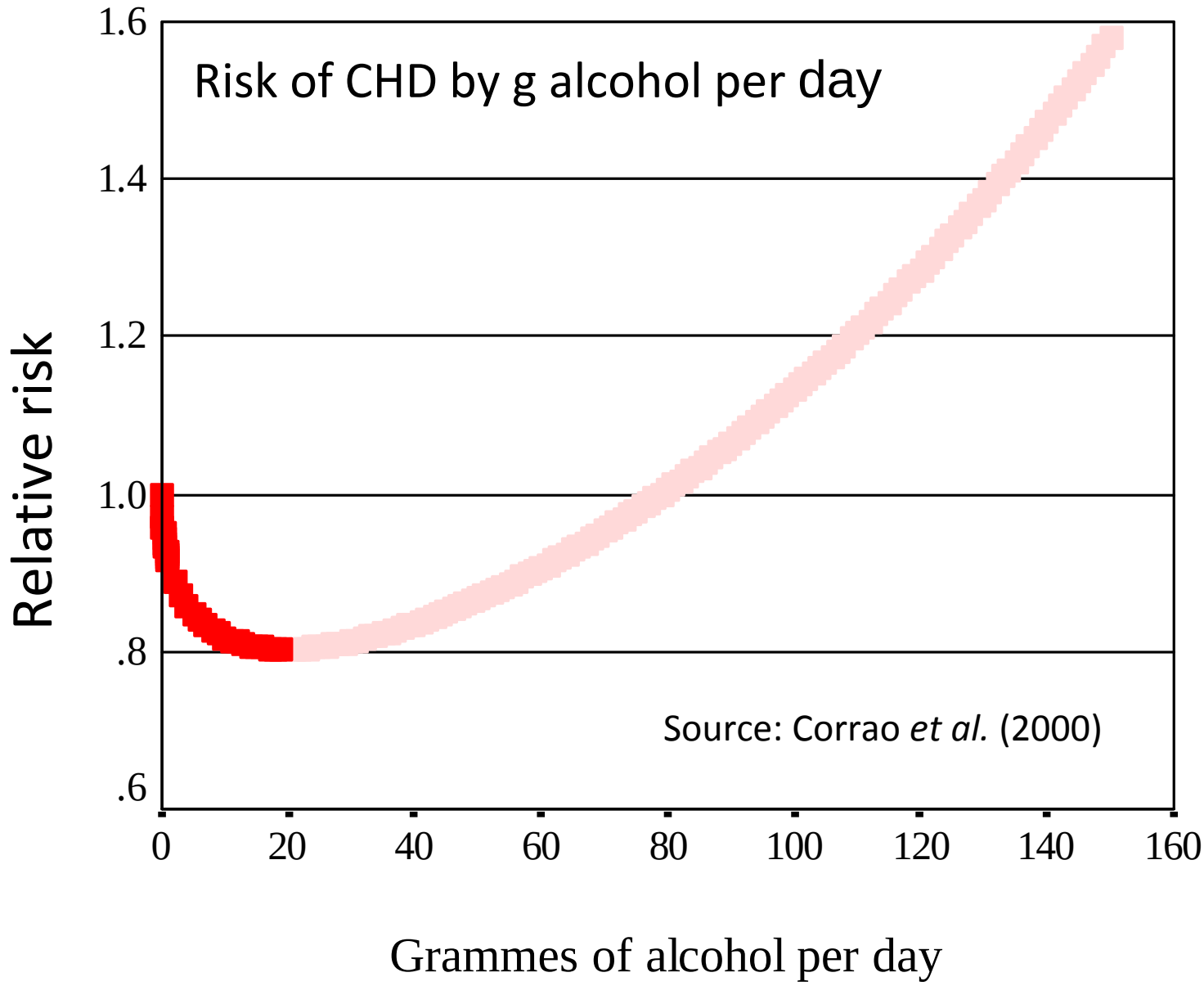

Risk of CHD by g alcohol per day
Relative risk
1.6
1.4
1.2
1.0
.8
.6
0
20
40
60
80
100
120
140
160
Source: Corrao *et al.* (2000)
Grammes of alcohol per day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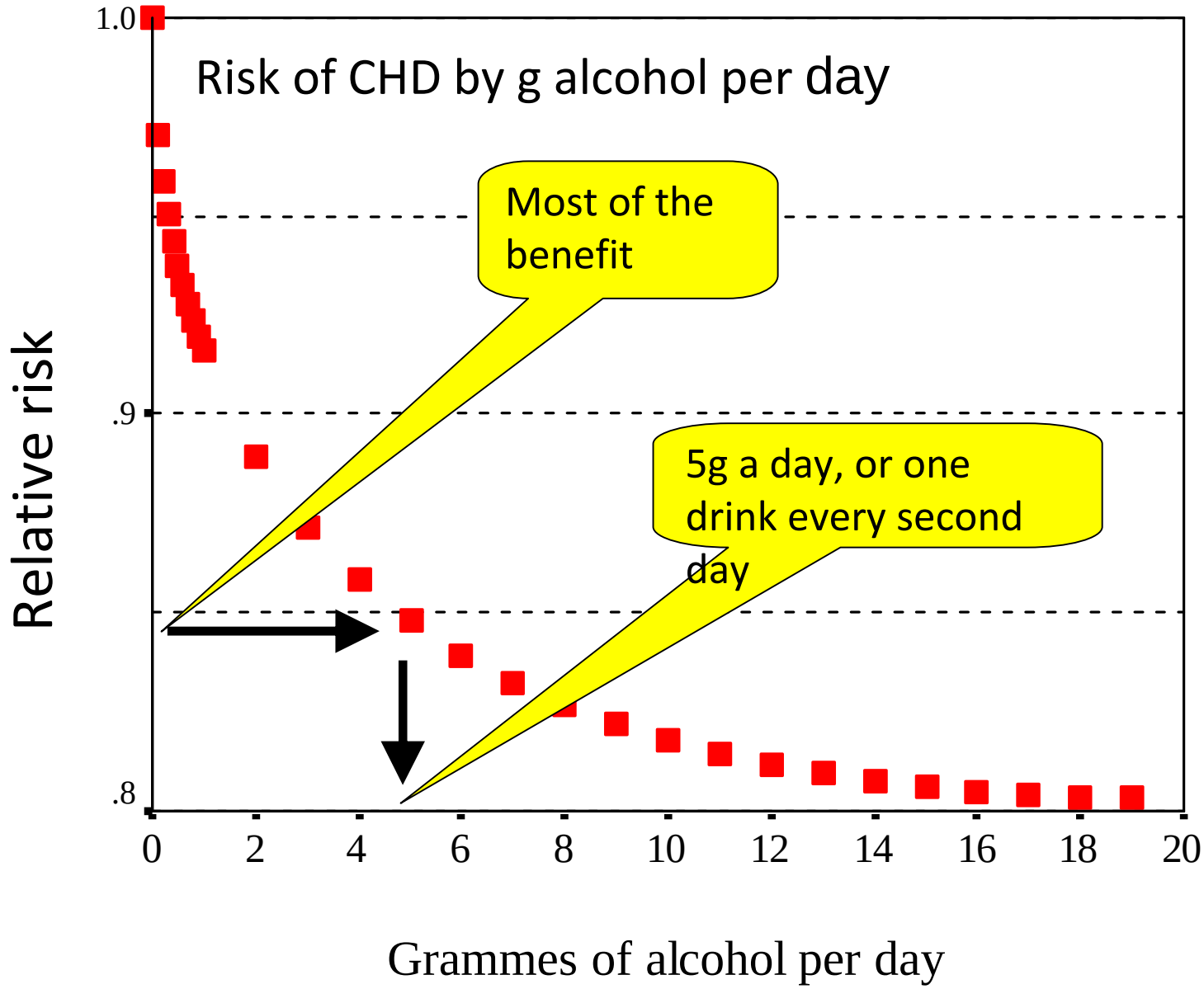
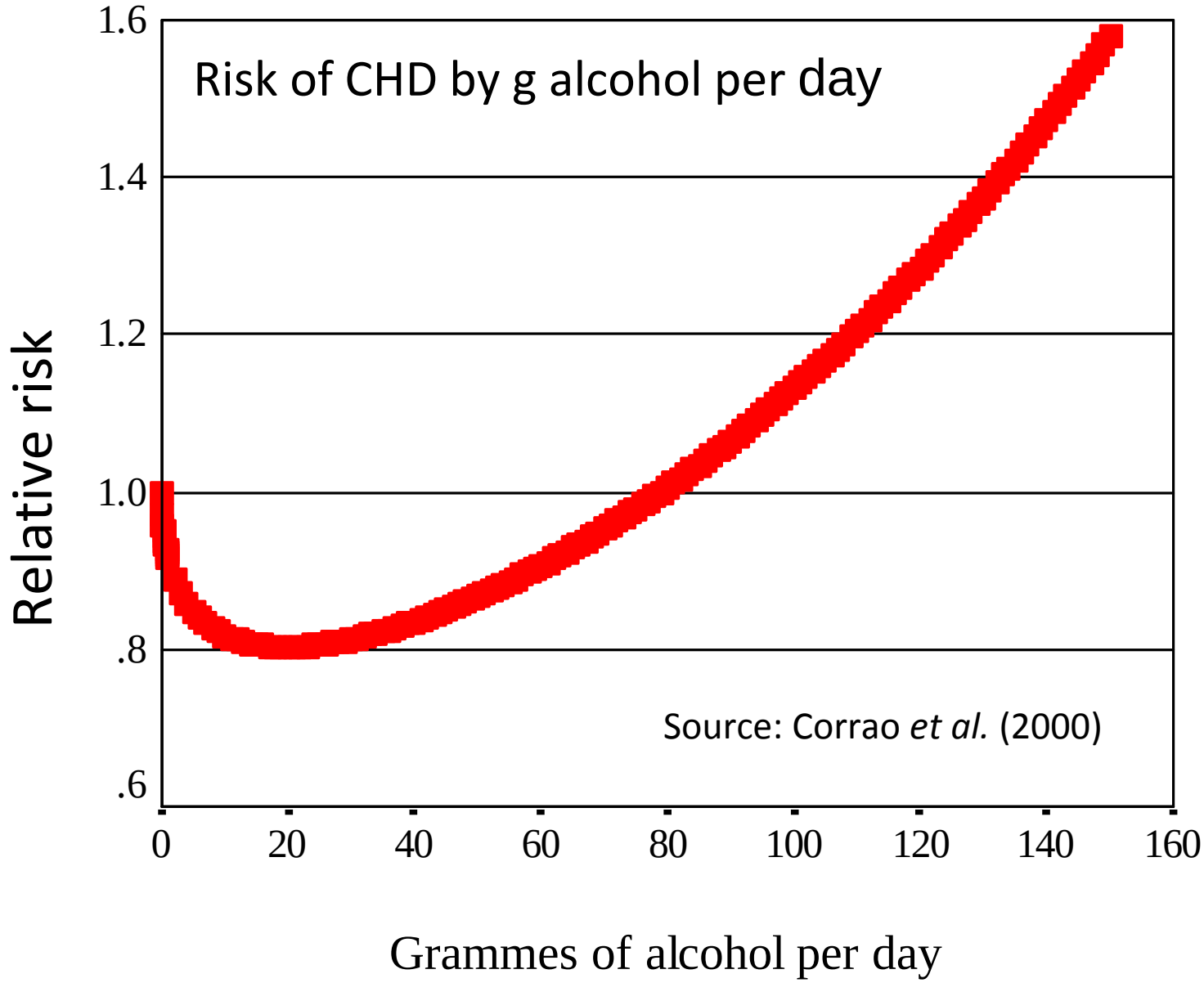
Grammes of alcohol per day


Risk of CHD by g alcohol per day
Most of the benefit
5g a day, or one drink every second day
Relative risk
1.0
.9
.8
0
2
4
6
8
10
12
14
16
18
20
Grammes of alcohol per day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Relative risk
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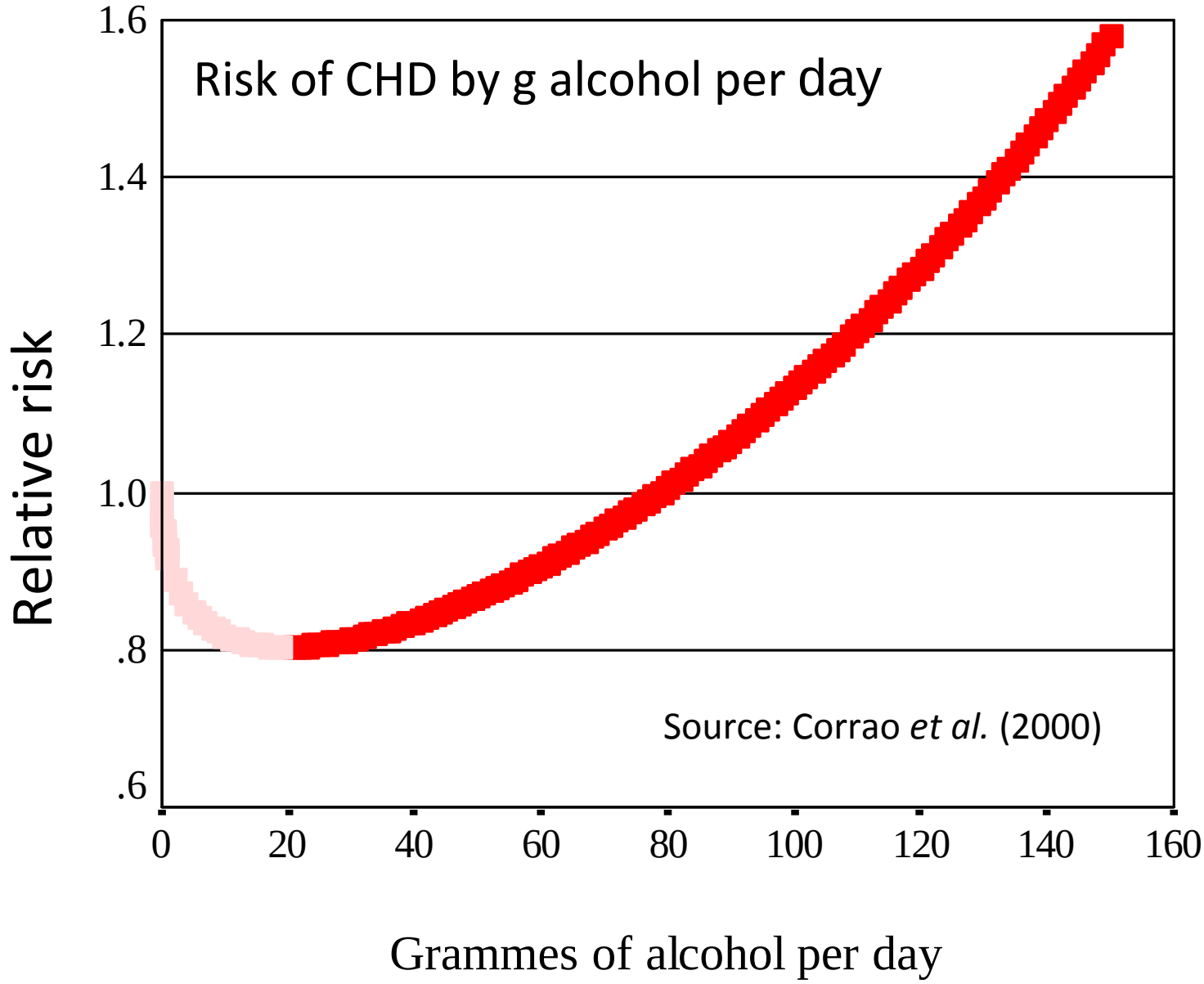
Grammes of alcohol per day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120
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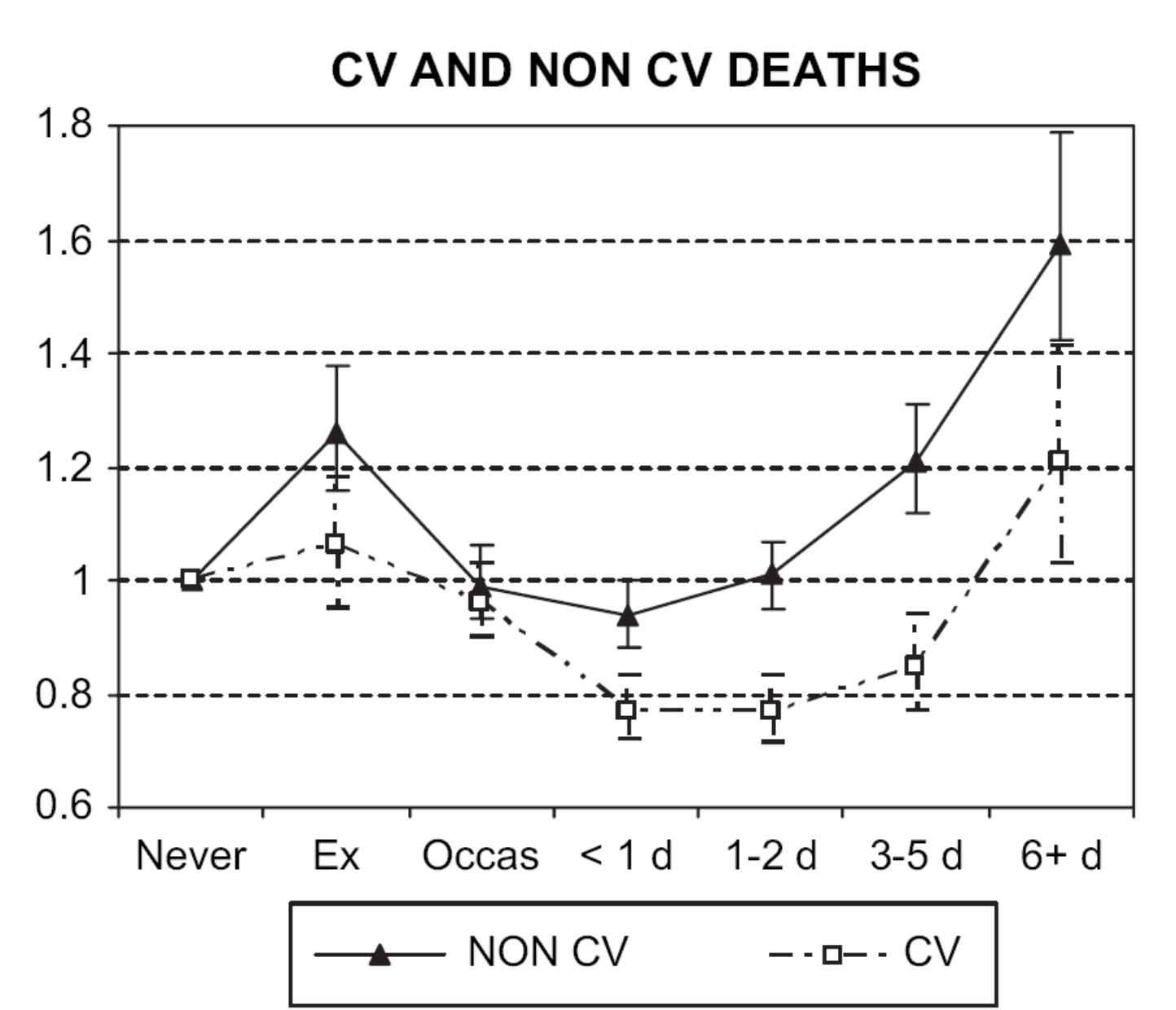
Source: Corrao *et al.* (2000)
Grammes of alcohol per day

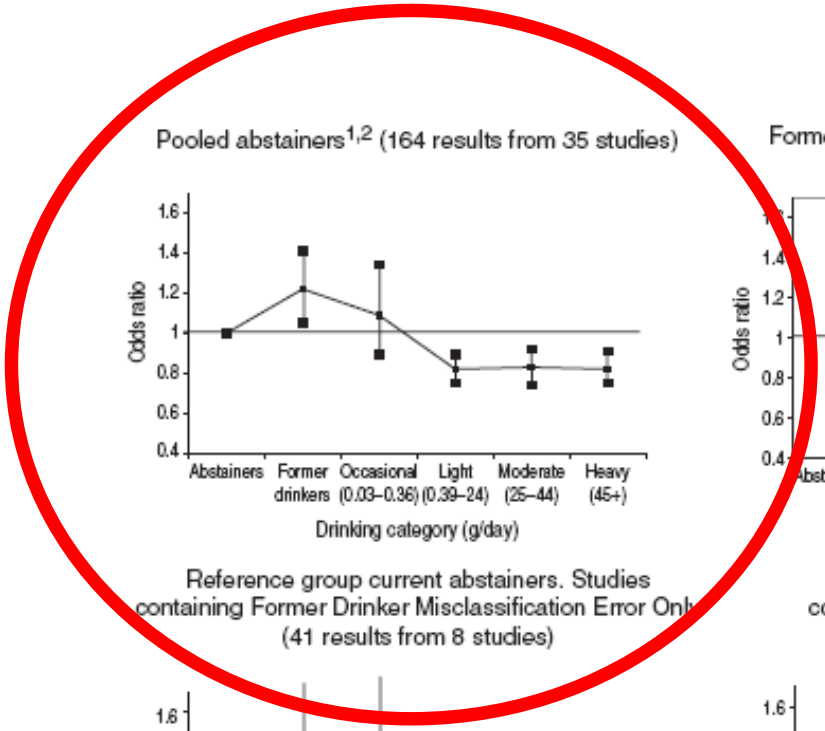
Systematic reviews show that there are no differences in the relative risks of cardiovascular disease between wine (0.75) and beer (0.77) drinkers when compared with abstainers.

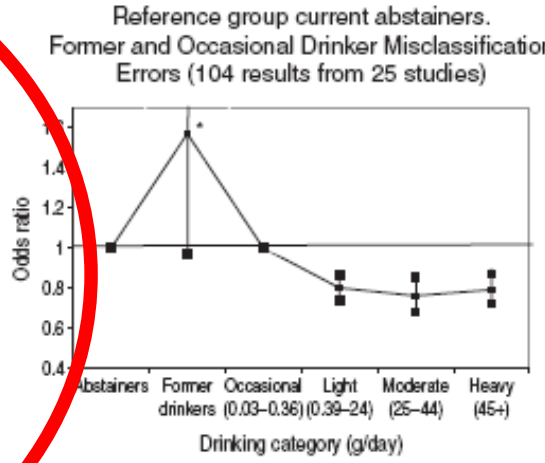
Clearly the drink reduces the risk of CHD.

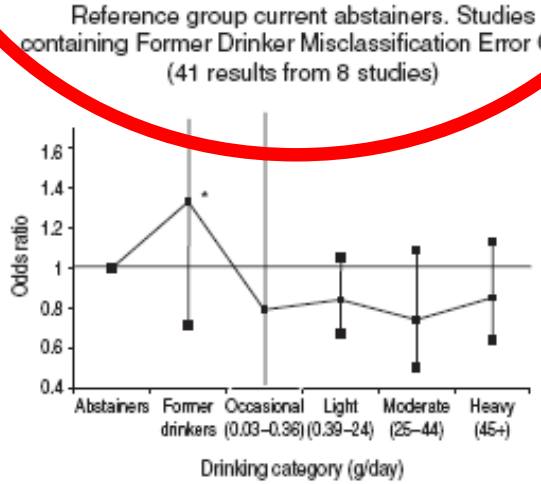
But to what extent does the drinker influence the size of the reduction in risk, and the level of alcohol consumption with the greatest reduction in risk (the nadir - the bottom of the curve)

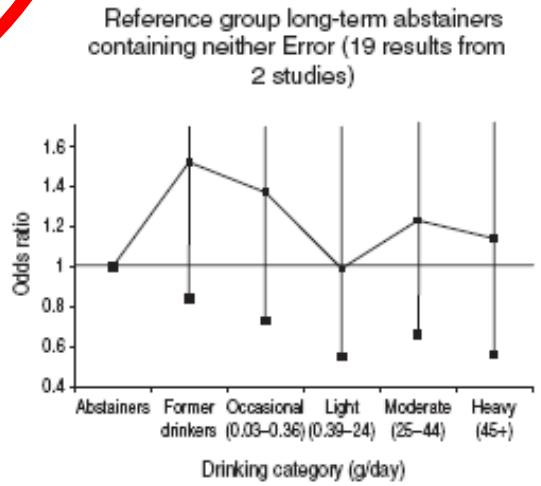


Source: Klatsky and Udaltsova 2007









Fillmore et al 2006

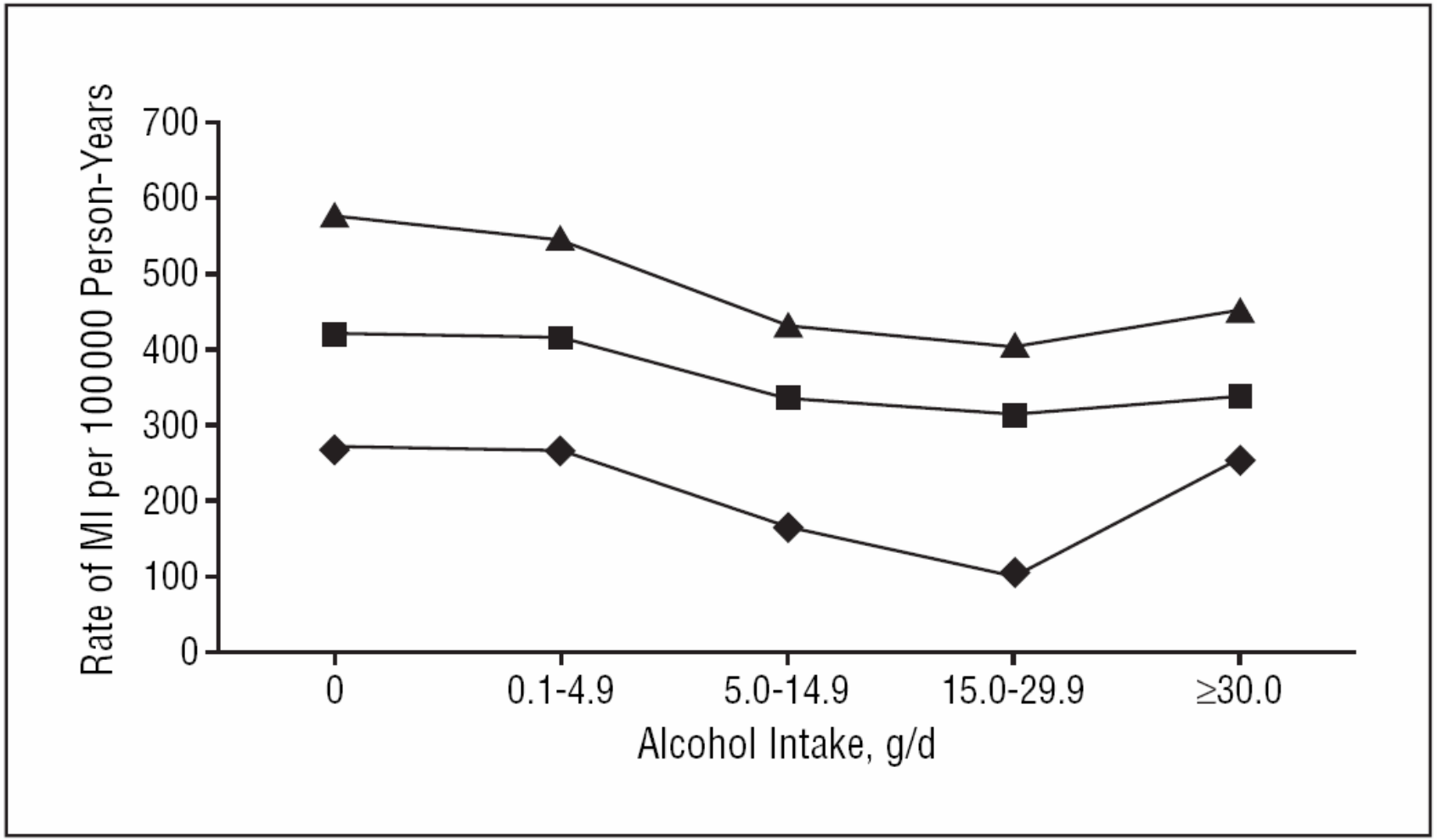
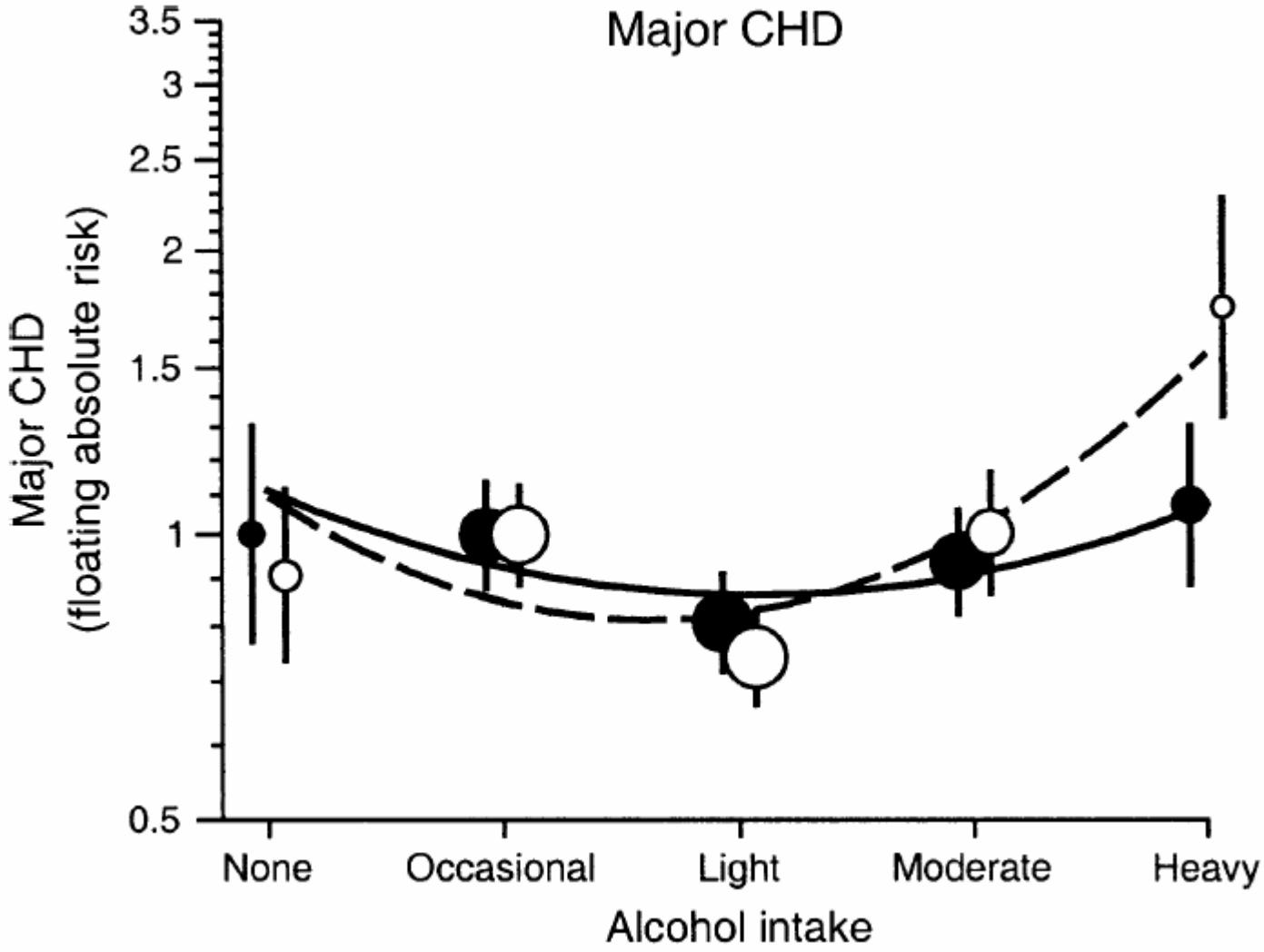
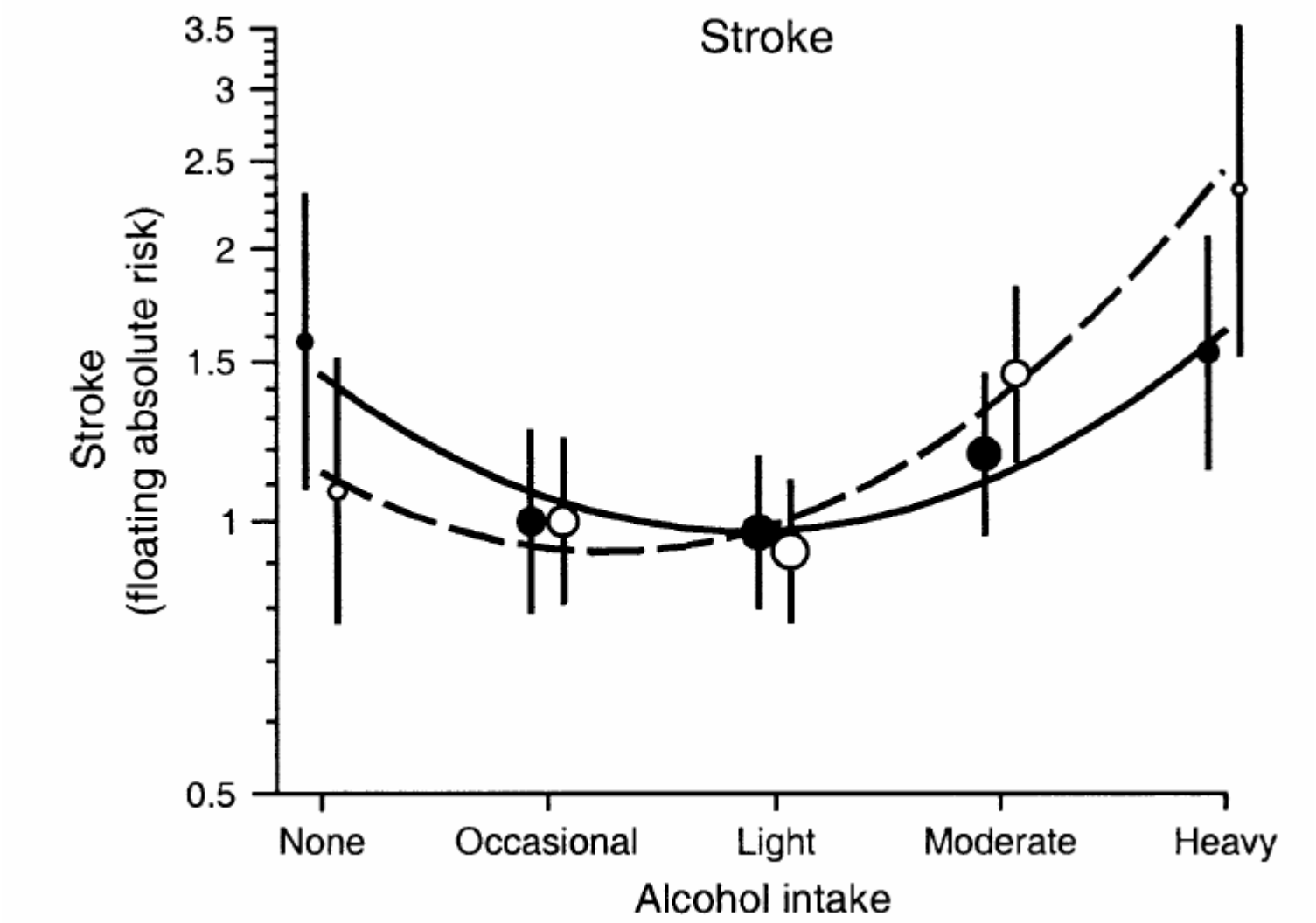


Figure. Age-adjusted rates of myocardial infarction (MI) according to alcohol intake and number of healthy lifestyle features met among men enrolled in the Health Professionals Follow-up Study. Diamonds, squares, and triangles, respectively, indicate men with all 4, 2 or 3, and none or 1 favorable lifestyle behaviors.

Source: Mukamal et al 2006



Source: Emberson et al 2005



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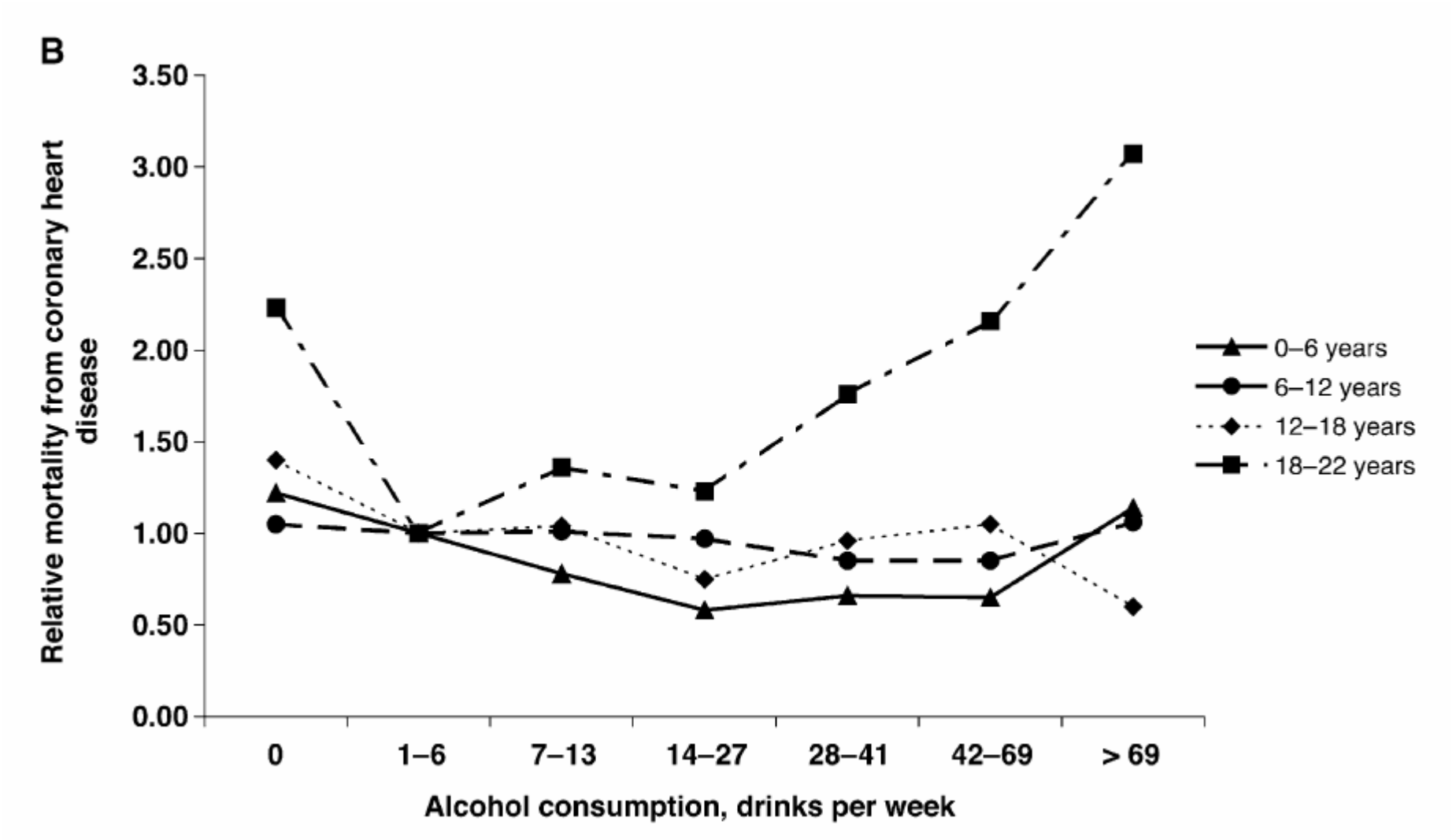


Source: Nielsen et al 2004

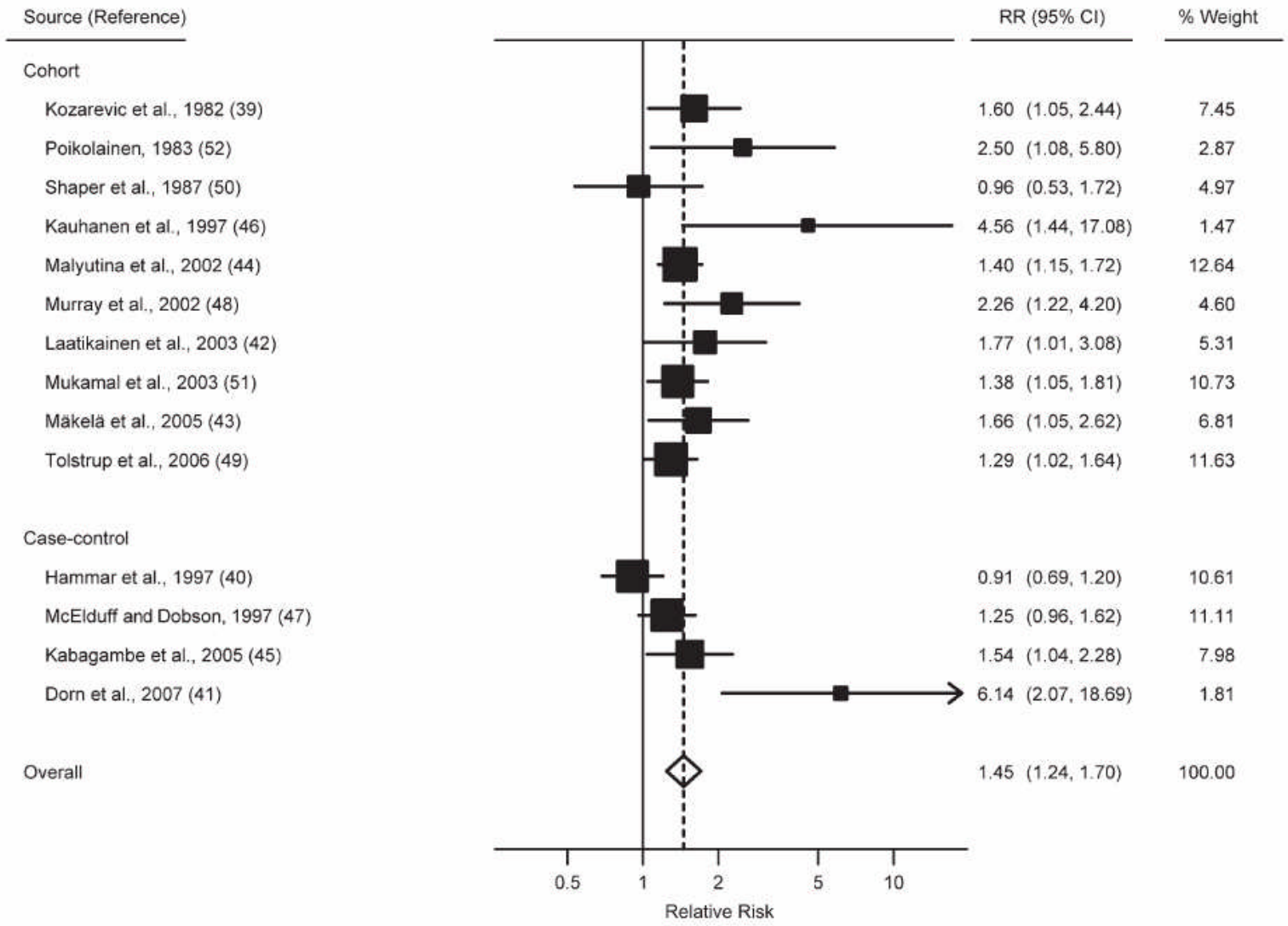
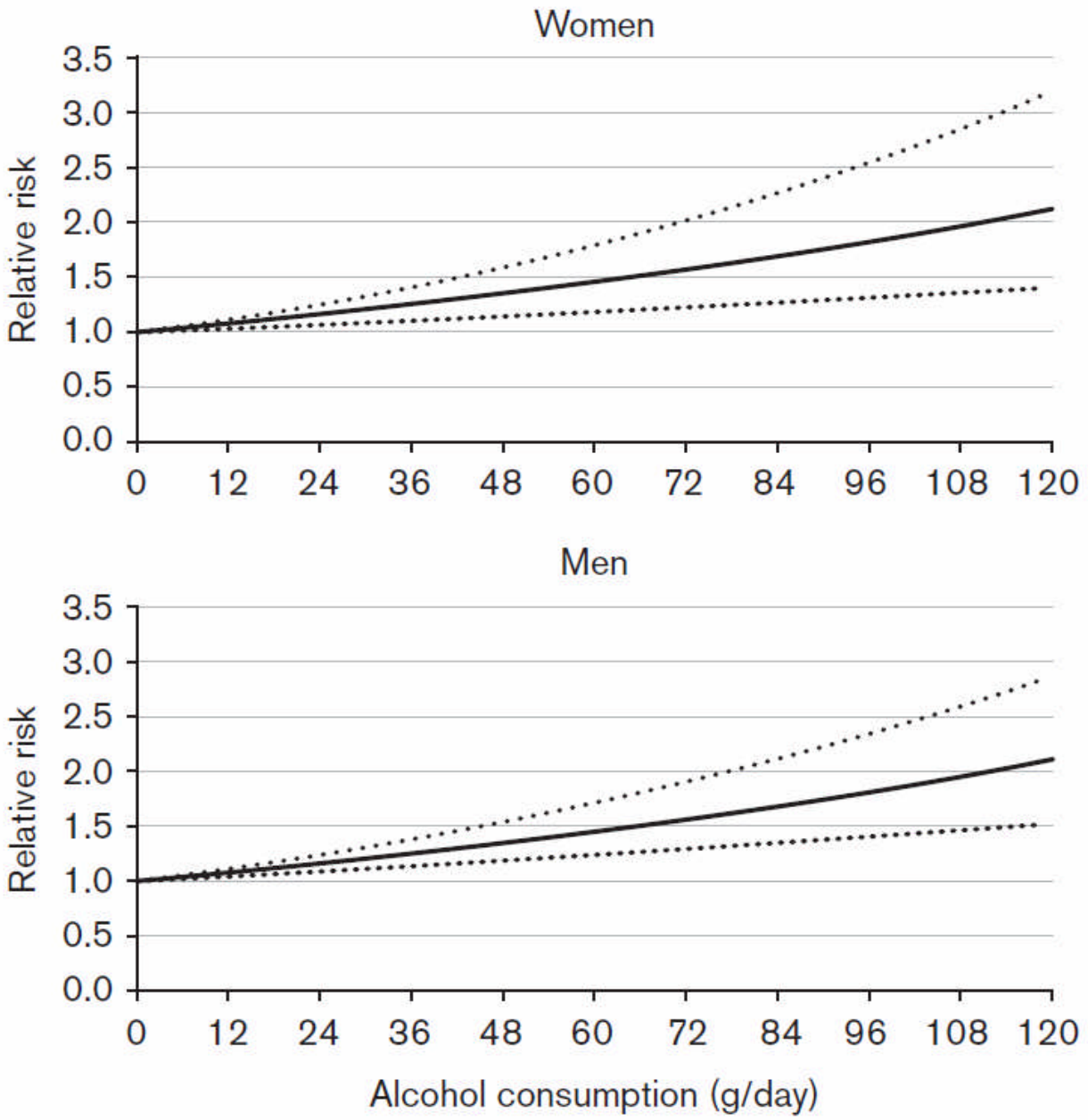


Figure 2. Forest plot of irregular heavy drinking occasions compared with regular moderate drinking and risk of ischemic heart disease. Weights are from random-effects analysis ($I^2 = 53.9\%$, $P = 0.008$). CI, confidence interval; RR, relative risk.



Dose–response relationship between alcohol consumption and risk of atrial fibrillation (continuous analysis using fractional polynomials).

So, what does all this mean?

In small doses, alcohol reduces the risk of coronary heart disease

Irregular as opposed to regular drinking increases the risk of coronary heart disease.

Alcohol increases the risk of atria fibrillation in a dose dependent manner.

It is alcohol that matters and not any particular beverage type

Most of the effect can be achieved by 5g alcohol a day, half a drink a day.

Most of the effect can be achieved in the short term.

The size of the effect is lower and the level of alcohol consumption with the maximum effect is lower, when other risk factors are taken into account, and the longer the period of follow-up.

Beyond 10g a day, one drink a day, the risk of coronary heart disease increases.

Take home message:

For heart disease,

Less is better, at least down to one drink every other day.

Take home message:

For heart disease,

Being less stressed, being more active, eating more fruit, vegetables, and particularly fish all reduce the risk of heart disease (and don’t smoke!).