Webextra: Supplementary tables

BMJ 2010;340:c1240 [Posted as supplied by author]

Table 1. Liver disease mortality by BMI category in men from the Main and Collaborative studies, excluding underweight

	BMI category			p	RR per SD increase in BMI*
	Normal weight	Overweight	Obese		
Number of men	4960	4000	526		
Liver disease as main cause of death†					
Number of deaths	28	39	12		
RR_1	1	1.84 (1.13 to 3.0)	5.25 (2.65 to 10.4)	<0.0001	1.51 (1.23 to 1.85)
RR_2	1	1.83 (1.12 to 3.0)	4.78 (2.37 to 9.66)	<0.0001	1.47 (1.20 to 1.81)
Liver disease in any position‡					
Number of deaths	53	74	18		
RR_1	1	1.77 (1.24 to 2.53)	4.02 (2.34 to 6.88)	<0.0001	1.47 (1.27 to 1.71)
RR_2	1	1.75 (1.22 to 2.50)	3.47 (1.99 to 6.05)	<0.0001	1.42 (1.22 to 1.65)

RR_1 adjusted for age and study
RR_2 adjusted for age, study, social class, smoking, systolic blood pressure, height, bronchitis, FEV1, angina, ischaemia on ECG and diabetes
* 1 SD BMI=3.01kg/m^2
† p for interaction between studies=0.07
‡ p for interaction between studies=0.28

Table 2. Liver disease mortality by alcohol consumption in men from the Main & Collaborative studies, excluding underweight

	Units of alcohol/week						p	RR per unit increase*
	0	1 - 7	8 - 14	15 - 21	22 - 34	35+		
Number of men	3328	1805	1754	1010	934	655		
Liver disease as main cause of death†								
Number of deaths	9	9	7	16	19	19		
RR_1	1	1.79	1.48	6.20	8.13	12.8	<0.0001	1.03
		(0.71 to 4.52)	(0.55 to 3.98)	(2.73 to 14.1)	(3.66 to 18.0)	(5.75 to 28.6)		(1.02 to 1.03)
RR_2	1	1.65	1.36	5.68	7.45	11.6	<0.0001	1.03
		(0.65 to 4.18)	(0.51 to 3.68)	(2.48 to 13.0)	(3.31 to 16.8)	(5.11 to 26.5)		(1.02 to 1.03)
Liver disease in any position‡								
Number of deaths	18	18	22	23	33	31		
RR_1	1	1.75	2.28	4.43	6.90	10.1	<0.0001	1.02
		(0.91 to 3.37)	(1.22 to 4.26)	(2.39 to 8.23)	(3.87 to 12.3)	(5.63 to 18.2)		(1.02 to 1.03)
RR_2	1	1.67	2.14	3.93	6.17	8.83	<0.0001	1.02
		(0.86 to 3.22)	(1.14 to 4.0)	(2.10 to 7.35)	(3.43 to 11.1)	(4.83 to 16.1)		(1.01 to 1.03)

RR_1 adjusted for age and study

RR_2 adjusted for age, study, social class, smoking, height, bronchitis, FEV1, angina, ischaemia on ECG and diabetes

* excluding non-drinkers

† p for interaction between studies=0.80

‡ p for interaction between studies=0.78

Table 3. Liver disease mortality by BMI and alcohol consumption in men from the Main and Collaborative studies, excluding underweight

	Drinking status (units/week)		
BMI category	0	1 - 14	15+
Normal weight			
Number of men	1722	1926	1312
Number of deaths	6	6	16
RR_1	1	0.90 (0.29 to 2.79)	3.98 (1.55 to 10.2)
RR_2	1	0.83 (0.27 to 2.59)	3.64 (1.41 to 9.45)
Overweight			
Number of men	1414	1465	1121
Number of deaths	3	7	29
RR_1	0.67 (0.17 to 2.68)	1.45 (0.49 to 4.34)	8.50 (3.51 to 20.6)
RR_2	0.69 (0.17 to 2.78)	1.39 (0.47 to 4.17)	8.03 (3.28 to 19.7)
Obese			
Number of men	192	168	166
Number of deaths	0	3	9
RR_1	-	6.32 (1.58 to 25.3)	21.7 (7.67 to 61.5)
RR_2	-	6.06 (1.50 to 24.5)	22.0 (7.60 to 63.5)

RR_1 adjusted for age and study
RR_2 adjusted for age, study, social class, smoking, height, bronchitis, FEV1, angina, ischaemia on ECG and diabetes

Table 4. Liver disease mentioned as any cause of death by BMI and alcohol consumption in men from the Main and Collaborative studies, excluding underweight

	Drinking status (units/week)		
BMI category	0	1 - 14	15+
Normal weight			
Number of deaths	10	15	28
RR_1	1	1.32	4.15
		(0.59 to 2.95)	(2.01 to 8.56)
RR_2	1	1.25	3.62
		(0.56 to 2.79)	(1.74 to 7.52)
Overweight			
Number of deaths	8	20	46
RR_1	1.04	2.36	7.63
	(0.41 to 2.62)	(1.10 to 5.05)	(3.84 to 15.2)
RR_2	1.05	2.26	6.90
	(0.41 to 2.66)	(1.05 to 4.85)	(3.44 to 13.8)
Obese			
Number of deaths	0	5	13
RR_1	-	6.07	17.7
		(2.07 to 17.8)	(7.70 to 40.5)
RR_2	-	5.39	15.6
		(1.83 to 15.9)	(6.68 to 36.3)

RR_1 adjusted for age and study
RR_2 adjusted for age, study, social class, smoking, height, bronchitis, FEV1, angina, ischaemia on ECG and diabetes

Table 5. Liver disease ascertained by any position on the death certification, any position on SMR1 or cancer registration by BMI and alcohol for men in the Collaborative study only, excluding underweight

	Drinking status (units/week)		
BMI category	0	1 - 14	15+
Normal weight			
Number of men	911	1175	834
Number with liver disease	11	25	34
RR_1	1	1.82 (0.90 to 3.71)	4.16 (2.11 to 8.22)
RR_2	1	1.76 (0.87 to 3.59)	3.73 (1.88 to 7.43)
Overweight			
Number of men	845	996	849
Number with liver disease	13	24	67
RR_1	1.34 (0.60 to 3.0)	2.05 (1.0 to 4.18)	7.90 (4.17 to 15.0)
RR_2	1.37 (0.61 to 3.05)	2.0 (0.98 to 4.09)	7.41 (3.89 to 14.1)
Obese			
Number of men	120	107	132
Number with liver disease	0	6	13
RR_1	-	5.34 (1.97 to 14.4)	11.4 (5.09 to 25.4)
RR_2	-	4.84 (1.78 to 13.2)	10.6 (4.70 to 24.0)

RR_1 adjusted for age
RR_2 adjusted for age, social class, smoking, height, bronchitis, FEV1, angina, ischaemia on ECG and diabetes

Table 6. Liver disease mortality by BMI category in men from the Main and Collaborative studies, excluding deaths in the 1st 5 years

	BMI category			p	RR per SD increase in BMI*
	Under/Normal weight	Overweight	Obese		
Number of men	4781	3776	472		
Liver disease as main cause of death					
Number of deaths	27	36	12		
RR_1	1	1.80 (1.09 to 2.98)	5.64 (2.84 to 11.2)	<0.0001	1.55 (1.26 to 1.91)
RR_2	1	1.79 (1.08 to 2.97)	5.0 (2.46 to 10.2)	<0.0001	1.50 (1.22 to 1.86)
Liver disease in any position					
Number of deaths	51	71	18		
RR_1	1	1.80 (1.25 to 2.58)	4.29 (2.50 to 7.37)	<0.0001	1.52 (1.30 to 1.77)
RR_2	1	1.76 (1.22 to 2.54)	3.62 (2.07 to 6.33)	<0.0001	1.45 (1.24 to 1.70)

RR_1 adjusted for age and study
RR_2 adjusted for age, study, social class, smoking, systolic blood pressure, height, bronchitis, FEV1, angina, ischaemia on ECG and diabetes
* 1 SD BMI=3.07kg/m^2

Table 7. Liver disease mortality by alcohol consumption in men from the Main & Collaborative studies, excluding deaths in the 1st 5 years

	Units of alcohol/week						p	RR per unit increase*
	0	1 - 7	8 - 14	15 - 21	22 - 34	35+		
Number of men	3183	1738	1695	975	894	619		
Liver disease as main cause of death								
Number of deaths	9	9	6	16	18	17		
RR_1	1	1.79	1.27	6.24	7.79	11.7	<0.0001	1.03
		(0.71 to 4.53)	(0.45 to 3.58)	(2.75 to 14.2)	(3.48 to 17.4)	(5.16 to 26.4)		(1.02 to 1.03)
RR_2	1	1.67	1.16	5.54	6.84	10.1	<0.0001	1.02
		(0.66 to 4.23)	(0.41 to 3.27)	(2.42 to 12.7)	(3.01 to 15.5)	(4.37 to 23.3)		(1.01 to 1.03)
Liver disease in any position								
Number of deaths	18	18	21	23	32	28		
RR_1	1	1.75	2.18	4.45	6.74	9.22	<0.0001	1.02
		(0.91 to 3.37)	(1.16 to 4.10)	(2.40 to 8.27)	(3.77 to 12.0)	(5.07 to 16.8)		(1.02 to 1.03)
RR_2	1	1.69	2.05	3.91	5.91	7.91	<0.0001	1.02
		(0.87 to 3.26)	(1.08 to 3.85)	(2.09 to 7.30)	(3.27 to 10.7)	(4.28 to 14.6)		(1.01 to 1.03)

RR_1 adjusted for age and study
RR_2 adjusted for age, study, social class, smoking, height, bronchitis, FEV1, angina, ischaemia on ECG and diabetes
* excluding non-drinkers

Table 8. Liver disease mortality by BMI and alcohol consumption in men from the Main and Collaborative studies, excluding deaths in the 1st 5 years

	Drinking status (units/week)		
BMI category	0	1 - 14	15+
Under/Normal weight			
Number of men	1659	1879	1270
Number of deaths	6	5	16
RR_1	1	0.75 (0.23 to 2.47)	4.04 (1.57 to 10.3)
RR_2	1	0.70 (0.21 to 2.29)	3.58 (1.38 to 9.28)
Overweight			
Number of men	1347	1399	1066
Number of deaths	3	7	26
RR_1	0.69 (0.17 to 2.75)	1.49 (0.50 to 4.46)	7.86 (3.21 to 19.2)
RR_2	0.71 (0.18 to 2.86)	1.43 (0.48 to 4.28)	7.19 (2.91 to 17.8)
Obese			
Number of men	177	155	152
Number of deaths	0	3	9
RR_1	-	6.54 (1.63 to 26.2)	22.7 (8.03 to 64.5)
RR_2	-	6.16 (1.52 to 24.9)	22.1 (7.63 to 64.1)

RR_1 adjusted for age and study
RR_2 adjusted for age, study, social class, smoking, height, bronchitis, FEV1, angina, ischaemia on ECG and diabetes

Table 9. Liver disease mentioned as any cause of death by BMI and alcohol consumption in men from the Main and Collaborative studies, excluding deaths in the 1st 5 years

	Drinking status (units/week)		
BMI category	0	1 - 14	15+
Under/Normal weight			
Number of deaths	10	14	27
RR_1	1	1.24 (0.55 to 2.80)	4.04 (1.95 to 8.36)
RR_2	1	1.18 (0.52 to 2.66)	3.49 (1.67 to 7.28)
Overweight			
Number of deaths	8	20	43
RR_1	1.06 (0.42 to 2.68)	2.41 (1.12 to 5.15)	7.30 (3.66 to 14.6)
RR_2	1.07 (0.42 to 2.71)	2.31 (1.08 to 4.96)	6.50 (3.23 to 13.1)
Obese			
Number of deaths	0	5	13
RR_1	-	6.23 (2.13 to 18.3)	18.3 (7.97 to 41.9)
RR_2	-	5.51 (1.87 to 16.2)	15.6 (6.70 to 36.5)

RR_1 adjusted for age and study
RR_2 adjusted for age, study, social class, smoking, height, bronchitis, FEV1, angina, ischaemia on ECG and diabetes

Table 10. Liver disease mortality by BMI category in men from the Main and Collaborative studies, excluding deaths in the 1st 10 years

	BMI category			p	RR per SD increase in BMI*
	Under/Normal weight	Overweight	Obese		
Number of men	4476	3521	442		
Liver disease as main cause of death					
Number of deaths	26	31	11		
RR_1	1	1.64 (0.97 to 2.79)	5.59 (2.74 to 11.4)	<0.0001	1.50 (1.20 to 1.88)
RR_2	1	1.64 (0.96 to 2.79)	5.25 (2.51 to 11.0)	0.001	1.49 (1.18 to 1.87)
Liver disease in any position					
Number of deaths	47	63	16		
RR_1	1	1.76 (1.20 to 2.57)	4.30 (2.43 to 7.61)	<0.0001	1.52 (1.29 to 1.79)
RR_2	1	1.72 (1.17 to 2.53)	3.66 (2.03 to 6.61)	<0.0001	1.47 (1.24 to 1.73)

RR_1 adjusted for age and study
RR_2 adjusted for age, study, social class, smoking, systolic blood pressure, height, bronchitis, FEV1, angina, ischaemia on ECG and diabetes
* 1 SD BMI=3.07kg/m^2

Table 11. Liver disease mortality by alcohol consumption in men from the Main & Collaborative studies, excluding deaths in the 1st 10 years

	Units of alcohol/week						p	RR per unit increase*
	0	1 - 7	8 - 14	15 - 21	22 - 34	35+		
Number of men	2951	1621	1572	900	828	567		
Liver disease as main cause of death								
Number of deaths	9	9	6	13	16	15		
RR_1	1	1.76	1.25	5.01	6.84	10.2	<0.0001	1.03
		(0.70 to 4.44)	(0.44 to 3.53)	(2.13 to 11.7)	(3.01 to 15.6)	(4.44 to 23.6)		(1.02 to 1.03)
RR_2	1	1.61	1.12	4.37	5.83	8.72	<0.0001	1.02
		(0.63 to 4.07)	(0.40 to 3.17)	(1.84 to 10.3)	(2.52 to 13.5)	(3.70 to 20.6)		(1.01 to 1.03)
Liver disease in any position								
Number of deaths	17	17	20	19	29	24		
RR_1	1	1.74	2.20	3.90	6.51	8.53	<0.0001	1.02
		(0.89 to 3.42)	(1.15 to 4.20)	(2.02 to 7.53)	(3.56 to 11.9)	(4.55 to 16.0)		(1.01 to 1.03)
RR_2	1	1.67	2.03	3.35	5.57	7.20	<0.0001	1.02
		(0.85 to 3.28)	(1.06 to 3.90)	(1.72 to 6.51)	(3.01 to 10.3)	(3.78 to 13.7)		(1.01 to 1.03)

RR_1 adjusted for age and study
RR_2 adjusted for age, study, social class, smoking, height, bronchitis, FEV1, angina, ischaemia on ECG and diabetes
* excluding non-drinkers

Table 12. Liver disease mortality by BMI and alcohol consumption in men from the Main and Collaborative studies, excluding deaths in the 1st 10 years

	Drinking status (units/week)		
BMI category	0	1 - 14	15+
Under/Normal weight			
Number of men	1561	1750	1165
Number of deaths	6	5	15
RR_1	1	0.74 (0.2 2 to 2.42)	3.75 (1.45 to 9.69)
RR_2	1	0.67 (0.20 to 2.21)	3.29 (1.25 to 8.61)
Overweight			
Number of men	1230	1301	990
Number of deaths	3	7	21
RR_1	0.70 (0.17 to 2.80)	1.50 (0.50 to 4.47)	6.37 (2.56 to 15.9)
RR_2	0.73 (0.18 to 2.91)	1.40 (0.47 to 4.21)	5.67 (2.24 to 14.3)
Obese			
Number of men	160	142	140
Number of deaths	0	3	8
RR_1	-	6.72 (1.68 to 26.9)	20.6 (7.09 to 59.9)
RR_2	-	6.19 (1.52 to 25.1)	20.1 (6.72 to 59.8)

RR_1 adjusted for age and study
RR_2 adjusted for age, study, social class, smoking, height, bronchitis, FEV1, angina, ischaemia on ECG and diabetes

Table 13. Liver disease mentioned as any cause of death by BMI and alcohol consumption in men from the Main and Collaborative studies, excluding deaths in the 1st 10 years

	Drinking status (units/week)		
BMI category	0	1 - 14	15+
Under/Normal weight			
Number of deaths	9	13	25
RR_1	1	1.27 (0.54 to 2.99)	4.19 (1.95 to 9.0)
RR_2	1	1.20 (0.51 to 2.83)	3.57 (1.65 to 7.73)
Overweight			
Number of deaths	8	19	36
RR_1	1.19 (0.46 to 3.09)	2.57 (1.16 to 5.69)	6.92 (3.32 to 14.4)
RR_2	1.21 (0.47 to 3.14)	2.45 (1.10 to 5.43)	6.02 (2.86 to 12.6)
Obese			
Number of deaths	0	5	11
RR_1	-	7.12 (2.38 to 21.3)	17.9 (7.37 to 43.4)
RR_2	-	6.11 (2.03 to 18.4)	15.1 (6.12 to 37.5)

RR_1 adjusted for age and study
RR_2 adjusted for age, study, social class, smoking, height, bronchitis, FEV1, angina, ischaemia on ECG and diabetes

Comparison of height and alcohol consumption in the 2 cohorts using data from men who took part in both studies

As explained in the paper, 156 men took part in both the Main and the Collaborative studies and to avoid duplication, the analyses in the paper used only the Collaborative study data. There was thus an opportunity to compare self-reported height from the Main study in 1965-1968 with recorded height from the Collaborative study in 1970-1973, and to investigate changes in reported alcohol consumption between the two studies.

The two measures of height were highly correlated, $r=0.95$, $p<0.0001$. The self-reported height in the Main study was higher than the recorded height in the Collaborative study for these men ($n=154$ as 2 had missing data). The mean heights in the Main and Collaborative studies were 170.36 and 168.45 cm respectively. The mean difference was 1.91cm (95% confidence interval 1.56-2.26), paired t-test $p<0.0001$. Some shrinkage with ageing would be expected as the Collaborative study was conducted after the Main study.

The two measures of alcohol units/week were also highly correlated, $r=0.73$, $p<0.0001$. The reported alcohol consumption generally increased between the 2 studies. The mean consumptions for the Main and Collaborative studies were 7.31 units and 11.74 units respectively, mean difference 4.43 (95% confidence interval 2.87 – 5.99), paired t-test $p<0.0001$. Taking account of the time between the two studies, there was a mean difference of 0.57 units per year, minimum -2.38, maximum 6.