

## **Supplementary material**

**Alcohol, pattern of drinking and all-cause mortality in Russia, Belarus and Hungary: a retrospective indirect cohort study based on mortality of relatives**

**Table S1. Odds ratios of various drinking habits across categories of sex, smoking, education and marital status in the three countries**

Country	Covariates	Categories	Regular drinking		Binge drinking		Hazardous drinking		Combined*	
			OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
RUSSIA	Sex	Males	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)
		Females	0.25	(0.20-0.30)	0.28	(0.25-0.32)	0.40	(0.33-0.48)	0.25	(0.17-0.35)
	Smoking	Never smoker	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)
		Ex-Smoker	1.21	(1.03-1.42)	1.51	(1.37-1.66)	1.56	(1.33-1.84)	1.09	(0.82-1.46)
		Regular smoker	4.87	(4.33-5.48)	3.91	(3.63-2.21)	4.30	(3.81-4.85)	5.49	(4.54-6.65)
	Education	Primary or less	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)
		Secondary	0.74	(0.67-0.82)	1.10	(1.02-1.20)	0.76	(0.68-0.84)	0.68	(0.59-0.79)
		University/College	0.54	(0.48-0.60)	0.76	(0.70-0.83)	0.49	(0.44-0.55)	0.41	(0.35-0.49)
	Marital status	Single, divorced or widow	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)
		Married or cohabiting	0.36	(0.33-0.39)	0.70	(0.65-0.74)	0.36	(0.33-0.40)	0.22	(0.20-0.25)
BELARUS	Sex	Males	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)
		Females	0.15	(0.11-0.20)	0.20	(0.18-0.23)	0.21	(0.16-0.27)	0.08	(0.04-0.15)
	Smoking	Never smoker	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)
		Ex-Smoker	1.11	(0.91-1.36)	1.28	(1.16-1.42)	1.17	(0.96-1.43)	0.96	(0.70-1.33)
		Regular smoker	3.88	(3.41-4.41)	3.11	(2.88-3.34)	3.01	(2.63-3.43)	3.96	(3.23-4.84)
	Education	Primary or less	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)
		Secondary	0.75	(0.66-0.86)	1.08	(0.99-1.18)	0.65	(0.57-0.75)	0.68	(0.56-0.83)
		University/College	0.48	(0.42-0.55)	0.64	(0.58-0.70)	0.43	(0.37-0.49)	0.41	(0.33-0.51)
	Marital status	Single, divorced or widow	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)
		Married or cohabiting	0.57	(0.50-0.65)	1.02	(0.94-1.11)	0.55	(0.47-0.63)	0.40	(0.32-0.49)
HUNGARY	Sex	Males	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)
		Females	0.09	(0.08-0.11)	0.15	(0.13-0.17)	0.14	(0.12-0.17)	0.10	(0.08-0.13)
	Smoking	Never smoker	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)
		Ex-Smoker	1.63	(1.49-1.78)	1.93	(1.76-2.11)	1.80	(1.59-2.03)	1.59	(1.34-1.88)
		Regular smoker	4.33	(4.03-4.66)	3.98	(3.69-4.29)	3.99	(3.62-4.40)	4.78	(4.20-5.45)
	Education	Primary or less	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)
		Secondary	0.77	(0.72-0.83)	0.78	(0.73-0.83)	0.75	(0.67-0.81)	0.64	(0.58-0.72)
		University/College	0.45	(0.40-0.52)	0.51	(0.45-0.59)	0.38	(0.32-0.46)	0.27	(0.20-0.35)
	Marital status	Single, divorced or widow	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)	1.00	(ref.)
		Married or cohabiting	0.43	(0.40-0.46)	0.47	(0.44-0.51)	0.35	(0.32-0.38)	0.24	(0.22-0.27)

All ORs were adjusted for relationship to respondent, age, sex, smoking, education and marital status

\*Engaged in all three drinking habits (regular, binge and hazardous drinking)

**Table S2. Country-specific hazard ratios (95% CIs) for hazardous drinking pattern in relation to all-cause mortality adjusted for drinking frequency in men**

			Model 1		Model 2	
	N	Events	HR	95% CI	HR	95% CI
<b>Russia (n=17,534)</b>						
Drinking pattern						
Neither	10071	3177	1.00	[1.00,1.00]	1.00	[1.00,1.00]
Binge	4696	1766	1.10	[1.03,1.16]	1.01	[0.95,1.08]
Hazardous	426	169	1.11	[0.95,1.30]	1.08	[0.93,1.27]
Both	2341	1199	1.56	[1.44,1.69]	1.40	[1.29,1.52]
<b>Belarus (n=16,522)</b>						
Drinking pattern						
Neither	10272	3022	1.00	[1.00,1.00]	1.00	[1.00,1.00]
Binge	4631	1536	1.10	[1.03,1.18]	1.03	[0.96,1.10]
Hazardous	269	104	1.12	[0.92,1.37]	1.08	[0.88,1.31]
Both	1350	626	1.50	[1.34,1.66]	1.40	[1.26,1.56]
<b>Hungary (n=15,411)</b>						
Drinking pattern						
Neither	10115	3002	1.00	[1.00,1.00]	1.00	[1.00,1.00]
Binge	2552	899	1.20	[1.11,1.29]	1.13	[1.05,1.22]
Hazardous	478	172	1.21	[1.04,1.42]	1.17	[1.00,1.37]
Both	2266	1006	1.60	[1.47,1.73]	1.48	[1.36,1.61]

Analysis is restricted to drinkers; never drinkers and those who quit drinking were excluded.

Model 1 is adjusted for year of birth, country, relation to informant, sex and year of birth of informant, and drinking frequency.

Model 2 is additionally adjusted for marital status, education and smoking.

**Table S3. Country-specific hazard ratios (95% CIs) for hazardous drinking pattern in relation to all-cause mortality adjusted for drinking frequency in women**

			Model 1		Model 2	
	N	Events	HR	95% CI	HR	95% CI
<b>Russia (n=8,628)</b>						
Drinking pattern						
Neither	7918	1737	1.00	[1.00,1.00]	1.00	[1.00,1.00]
Binge	483	108	1.24	[1.01,1.51]	1.11	[0.90,1.35]
Hazardous	101	31	1.50	[1.05,2.14]	1.39	[0.97,1.98]
Both	126	49	2.36	[1.68,3.31]	2.04	[1.44,2.88]
<b>Belarus (n=9,177)</b>						
Drinking pattern						
Neither	8555	1494	1.00	[1.00,1.00]	1.00	[1.00,1.00]
Binge	517	94	1.13	[0.91,1.40]	1.10	[0.89,1.36]
Hazardous	46	12	1.19	[0.67,2.10]	1.13	[0.64,2.00]
Both	59	22	1.75	[1.04,2.92]	1.63	[0.98,2.71]
<b>Hungary (n=3,241)</b>						
Drinking pattern						
Neither	2757	518	1.00	[1.00,1.00]	1.00	[1.00,1.00]
Binge	253	58	1.29	[0.98,1.70]	1.21	[0.91,1.59]
Hazardous	51	15	1.24	[0.74,2.10]	1.19	[0.70,2.01]
Both	180	75	1.98	[1.50,2.62]	1.64	[1.23,2.18]

Analysis is restricted to drinkers; never drinkers and those who quit drinking were excluded.

Model 1 is adjusted for year of birth, country, relation to informant, sex and year of birth of informant, and drinking frequency.

Model 2 is additionally adjusted for marital status, education and smoking.