Supplementary Materials

Figure S1. Flow chart of the study population

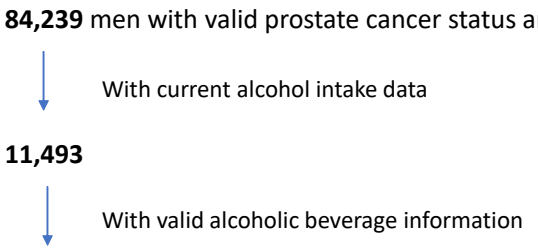

Table S1. Summary of prostate cancer (PCa) status and related information by study sites

Study site	Method of collecting alcohol data	Country	Sample size	Non-PCa N (%)		PCa N (%)	
COSM	questionnaire	Sweden[1]	3146	1028	(32.7)	2118	(67.3)
ESTHER	questionnaire	Germany[1]	385	197	(51.2)	188	(48.8)
Hamburg-Zagreb	Interview	Croatia[1]	6	0	(0)	6	(100)
KULEUVEN	Interview	Belgium[1]	6	2	(33.3)	4	(66.7)
MCC-Spain	Questionnaire	Spain[1]	833	359	(43.1)	474	(56.9)
PRAGGA	Questionnaire	Spain[1]	93	0	(0)	93	(100)
SWOG-PCPT	Questionnaire	USA	2045	1045	(51.1)	100	(48.9)
SWOG-SELECT	Questionnaire	USA	3515	2045	(58.2)	1470	(41.8)
Total	-	-	10029	4676	(46.6)	3553	(35.4)

[1]In European

Table S2. Prostate cancer risk status and other selected factors associated with intake of total alcohol and specific alcoholic beverage types

	Total alcohol				Beer intake			
	Univariate Model		Multivariable Model[1] (N=9135)		Univariate Model		Multivariable Model[1] (N=9585)	
Factor	Light/moderate	Heavy	Light/moderate	Heavy	Light/moderate	Heavy	Light/moderate	Heavy
Prostate cancer								
No	1	1	1	1	1	1	1	1
Yes	1.54 (1.39, 1.70)***	1.71 (1.49, 1.97)***	1.10 (0.99, 1.23)	1.07 (0.92, 1.24)	1.39 (1.28, 1.52)***	1.50 (1.29, 1.74)***	1.04 (0.94, 1.14)	0.98 (0.84, 1.16)
Age	0.98 (0.97, 0.98)***	0.99 (0.98, 1.00)*	0.98 (0.97, 0.98)***	0.99 (0.98, 1.00)*	0.97 (0.96, 0.97)***	0.96 (0.95, 0.97)***	0.96 (0.95, 0.96)***	0.95 (0.94, 0.96)***
BMI status[2]								
Normal/Underweight	1	1	1	1	1	1	1	1
Overweight	0.83 (0.74, 0.95)**	0.86 (0.73, 1.02)	1.07 (0.93, 1.23)	1.14 (0.95, 1.36)	0.77 (0.69, 0.85)***	0.62 (0.52, 0.73)***	0.96 (0.86, 1.08)	0.81 (0.67, 0.97)*
Obese	0.47 (0.41, 0.55)***	0.44 (0.36, 0.53)***	0.74 (0.63, 0.86)**	0.73 (0.58, 0.91)**	0.50 (0.44, 0.56)***	0.34 (0.27, 0.42)***	0.76 (0.66, 0.87)***	0.59 (0.46, 0.76)***
Smoking								
Never	1	1	1	1	1	1	1	1
Former	1.13 (1.02, 1.26)*	1.79 (1.54, 2.09)***	1.24 (1.11, 1.39)**	2.01 (1.70, 2.37)***	1.03 (0.94, 1.12)	1.75 (1.47, 2.08)***	1.14 (1.03, 1.26)*	2.06 (1.71, 2.48)***
Current	1.80 (1.48, 2.19)***	3.51 (2.76, 4.47)***	0.92 (0.74, 1.14)	1.63 (1.25, 2.14)**	1.66 (1.42, 1.93)***	3.64 (2.87, 4.61)***	0.84 (0.71, 1.00)	1.60 (1.23, 2.07)***
Region								
Europe	1	1	1	1	1	1	1	1
USA	0.10 (0.09, 0.12)***	0.06 (0.05, 0.07)***	0.10 (0.09, 0.12)***	0.06 (0.05, 0.08)***	0.16 (0.15, 0.18)***	0.08 (0.07, 0.09)***	0.15 (0.13, 0.16)***	0.07 (0.06, 0.09)***

	Wine intake				Spirits intake			
	Univariate Model		Multivariable Model[1] (N= 9332)		Univariate Model		Multivariable Model[1] (N=9403)	
Factor	Light/moderate	Heavy	Light/moderate	Heavy	Light/moderate	Heavy	Light/moderate	Heavy
Prostate cancer								
No	1	1	1	1	1	1	1	1
Yes	1.35 (1.25, 1.47)***	1.52 (1.25, 1.85)***	1.11 (1.02, 1.22)*	0.94 (0.76, 1.16)	1.27 (1.17, 1.38)***	1.07 (0.82, 1.41)	1.14 (1.04, 1.24)**	1.34 (1.01, 1.78)*
Age	0.99 (0.98, 0.99)***	1.05 (1.03, 1.06)***	0.99 (0.98, 0.99)***	1.04 (1.03, 1.06)***	0.99 (0.98, 1.00)***	1.03 (1.01, 1.05)**	0.99 (0.99, 1.00)*	1.03 (1.01, 1.06)**
BMI status[2]								
Normal/Underweight	1	1	1	1	1	1	1	1
Overweight	0.85 (0.77, 0.94)**	1.22 (0.96, 1.54)	0.97 (0.88, 1.08)	1.46 (1.13, 1.89)**	1.07 (0.97, 1.18)	1.87 (1.30, 2.69)***	1.18 (1.07, 1.30)**	1.59 (1.10, 2.30)*
Obese	0.52 (0.46, 0.59)***	0.80 (0.60, 1.07)	0.67 (0.59, 0.76)***	1.13 (0.81, 1.56)	0.90 (0.80, 1.02)	1.80 (1.18, 2.74)**	1.15 (1.01, 1.30)*	1.42 (0.92, 2.19)
Smoking								
Never	1	1	1	1	1	1	1	1
Former	1.07 (0.98, 1.17)	1.41 (1.13, 1.75)**	1.13 (1.03, 1.24)*	1.40 (1.10, 1.78)**	1.45 (1.33, 1.59)***	2.34 (1.70, 3.23)***	1.47 (1.34, 1.61)***	2.24 (1.61, 3.10)***
Current	1.06 (0.92, 1.22)	1.85 (1.37, 2.51)***	0.72 (0.62, 0.84)***	1.27 (0.91, 1.77)	2.12 (1.85, 2.43)***	2.53 (1.58, 4.04)***	1.65 (1.43, 1.91)***	3.54 (2.16, 5.80)***
Region								
Europe	1	1	1	1	1	1	1	1
USA	0.37 (0.34, 0.41)***	0.18 (0.15, 0.23)***	0.38 (0.34, 0.41)***	0.21 (0.17, 0.27)***	0.48 (0.44, 0.52)***	2.87 (1.99, 4.14)***	0.48 (0.44, 0.52)***	3.20 (2.15, 4.77)***

[1]Based on multinomial logistic models with an alcohol factor as the outcome adjusting all factors in this table; *: p<0.05, **: P<0.01, ***: P<0.001

[2]Normal/underweight (body mass index (BMI)<25), overweight (BMI: 25-29.9), and obesity (BMI≥30)

Table S3. Prostate cancer (PCa) aggressiveness status and other selected factors associated with intake of total alcohol and specific alcoholic beverage types for PCa patients

	Total alcohol intake				Beer intake			
Factor	Univariate Model		Multivariable Model[1] (N=4777)		Univariate Model		Multivariable Model[1] (n=5045)	
	Light/moderate	Heavy	Light/moderate	Heavy	Light/moderate	Heavy	Light/moderate	Heavy
PCa aggressiveness								
No	1	1	1	1	1	1	1	1
Yes	1.83 (1.43, 2.34)***	2.15 (1.61, 2.88)***	0.91 (0.69, 1.20)	0.90 (0.64, 1.26)	1.99 (1.65, 2.40)***	2.47 (1.89, 3.22)***	1.33 (1.07, 1.65)*	1.48 (1.09, 2.01)*
Age	0.98 (0.97, 0.99)***	0.99 (0.97, 1.00)	0.98 (0.97, 0.99)***	0.99 (0.97, 1.00)	0.96 (0.95, 0.97)***	0.96 (0.94, 0.97)***	0.95 (0.94, 0.96)***	0.94 (0.93, 0.96)***
BMI status[2]								
Normal/Underweight	1	1	1	1	1	1	1	1
Overweight	0.71 (0.59, 0.85)*	0.76 (0.61, 0.96)***	0.92 (0.76, 1.12)	1.00 (0.78, 1.29)	0.68 (0.59, 0.78)***	0.56 (0.45, 0.70)***	0.85 (0.72, 1.00)*	0.72 (0.56, 0.92)**
Obese	0.40 (0.33, 0.50)***	0.44 (0.33, 0.58)***	0.66 (0.52, 0.83)***	0.71 (0.52, 0.98)*	0.46 (0.38, 0.54)***	0.31 (0.23, 0.43)***	0.71 (0.59, 0.87)***	0.56 (0.40, 0.80)**
Smoking								
Never	1	1	1	1	1	1	1	1
Former	1.10 (0.94, 1.28)	1.74 (1.41, 2.15)***	1.19 (1.01, 1.41)*	1.95 (1.55, 2.46)***	0.95 (0.84, 1.08)	1.69 (1.34, 2.12)***	1.05 (0.91, 1.21)	1.97 (1.54, 2.54)***
Current	1.89 (1.42, 2.51)***	3.38 (2.41, 4.76)***	0.87 (0.63, 1.19)	1.47 (1.00, 2.14)*	1.70 (1.37, 2.10)***	3.82 (2.79, 5.23)***	0.82 (0.64,1.04)	1.59 (1.12, 2.26)**
Region								
Europe	1	1	1	1	1	1	1	1
USA	0.10 (0.08, 0.12)***	0.06 (0.04, 0.07)***	0.10 (0.08, 0.13)***	0.06 (0.05, 0.08)***	0.17 (0.15, 0.19)***	0.07 (0.06, 0.09)***	0.15 (0.13-0.17)***	0.07 (0.05, 0.09)***

	Wine intake				Spirits intake			
Factor	Univariate Model		Multivariable Model[1] (n=4874)		Univariate Model		Multivariable Model[1] (n=4945)	
	Light/moderate	Heavy	Light/moderate	Heavy	Light/moderate	Heavy	Light/moderate	Heavy
PCa aggressiveness								
No	1	1	1	1	1	1	1	1
Yes	1.18 (1.00, 1.39)*	1.24 (0.87, 1.76)	0.90 (0.75, 1.08)	0.56 (0.36, 0.86)**	1.06 (0.91, 1.24)	0.61 (0.33, 1.15)	0.88 (0.75, 1.04)	0.93 (0.48, 1.81)
Age	0.99 (0.98, 0.99)**	1.05 (1.03, 1.07)***	0.99 (0.98, 1.00)*	1.05 (1.03, 1.08)***	0.99 (0.98, 0.99)***	1.01 (0.99, 1.04)	0.98 (0.98, 1.00)**	1.02 (0.99, 1.05)
BMI status[2]								
Normal/Underweight	1	1	1	1	1	1	1	1
Overweight	0.87 (0.76, 1.00)*	1.56 (1.13, 2.16)**	1.00 (0.87, 1.15)	1.96 (1.35, 2.83)***	1.04 (0.92, 1.18)	1.37 (0.87, 2.17)	1.14 (1.00, 1.30)	1.10 (0.69, 1.75)
Obese	0.55 (0.46, 0.65)***	1.32 (0.90, 1.93)	0.71 (0.59, 0.85)***	1.79 (1.14, 2.81)*	0.95 (0.81, 1.12)	1.56 (0.91, 2.69)	1.19 (1.00, 1.41)	1.10 (0.63, 1.93)
Smoking								
Never	1	1	1	1	1	1	1	1
Former	1.01 (0.89, 1.15)	1.37 (1.03, 1.81)*	1.05 (0.92, 1.19)	1.33 (0.96, 1.84)	1.48 (1.31, 1.67)***	2.40 (1.54, 3.74)***	1.48 (1.31, 1.67)***	2.35 (1.50, 3.69)***
Current	1.11 (0.92, 1.35)	1.60 (1.07, 2.40)*	0.79 (0.64, 0.96)*	1.23 (0.77,1.95)	2.18 (1.82, 2.62)***	2.66 (1.43, 4.97)**	1.72 (1.42, 2.09)***	4.13 (2.13, 8.02)***
Region								
Europe	1	1	1	1	1	1	1	1
USA	0.40 (0.35, 0.45)***	0.21 (0.16, 0.28)***	0.39 (0.34, 0.45)***	0.24 (0.17, 0.34)***	0.53 (0.47, 0.59)***	3.51 (2.19, 5.63)***	0.50 (0.44, 0.57)***	4.10 (2.40, 7.00)***

[1]Based on multinomial logistic models with an alcohol factor as the outcome adjusting all factors in this table; *: p<0.05, **: P<0.01, ***: P<0.001

[2]Normal/underweight (body mass index (BMI)<25), overweight (BMI: 25-29.9), and obesity (BMI≥30)

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