Supplementary Table 1. Observed diagnosis-specific sickness absence days by alcohol use in each cohort. The highest mean on each row is bolded.

HeSSup					
Mean days of sickness absence per person-years	Persistent abstainers n=989 (9%)	Persistent low-risk n=8360 (78%)	Former at-risk n=440 (4%)	Persistent at-risk n=356 (3%)	New at-risk n=522 (5%)
Mental	1.79	1.31	1.02	**2.47**	1.91
Circulatory diseases	0.33	0.30	**0.50**	0.45	0.35
Musculoskeletal	3.16	2.36	2.85	**3.36**	2.58
Digestive	0.24	0.19	0.21	**0.39**	0.15
Respiratory	**0.29**	0.20	**0.29**	0.18	0.20
Injury or poisoning	0.75	0.84	0.95	**1.24**	1.07
Whitehall II					
Mean days of sickness absence per person-years	Persistent abstainers n=453 (12%)	Persistent low-risk n=2810 (75%)	Former at-risk n=159 (4%)	Persistent at-risk n=182 (5%)	New at-risk n=126 (3%)
Mental	1.65	0.99	2.05	**3.21**	1.07
Circulatory diseases	**0.74**	0.17	0.003	0.49	0.21
Musculoskeletal	**2.03**	0.79	0.27	0.66	0.28
Digestive	0.66	0.19	**0.42**	0.13	0.18
Respiratory	**3.17**	1.47	1.33	2.02	1.18
Injury or poisoning	**1.39**	0.47	1.05	0.73	0.12
GAZEL					
Mean days of sickness absence per person-years	Persistent abstainers n=570 (7%)	Persistent low-risk n=5578 (69%)	Former at-risk n=508 (6%)	Persistent at-risk n=958 (12%)	New at-risk n=493 (6%)
Mental	**2.14**	1.25	1.29	1.15	1.01
Circulatory diseases	0.45	0.64	0.74	**0.96**	0.76
Musculoskeletal	**2.59**	1.39	2.02	1.96	1.75
Digestive	0.44	0.43	0.45	**0.58**	0.38
Respiratory	0.29	0.41	0.47	0.41	**0.52**
Injury or poisoning	1.13	1.24	0.98	1.74	**1.88**
FPS					
Mean days of sickness absence per person-years	Persistent abstainers n=2532 (10%)	Persistent low-risk n=18786 (75%)	Former at-risk n=1021 (4%)	Persistent at-risk n=1384 (6%)	New at-risk n=1293 (5%)
Mental	**2.45**	1.67	2.14	2.28	2.33
Circulatory diseases	0.65	0.50	**0.76**	0.41	0.33
Musculoskeletal	**3.47**	1.65	2.15	2.20	2.20
Digestive	0.45	**0.51**	0.41	**0.51**	0.39
Respiratory	**0.63**	0.52	0.54	0.51	0.57
Injury or poisoning	1.82	1.29	1.32	1.82	**2.31**

Supplementary Table 2. Adjusted* rate ratios (95% Cis) for the association between alcohol use and diagnosis of sickness absence. Pooled data (n=47 520).

	Abstainers n=4730 (10%)		Low-risk n=36 733 (75%)		Former at-risk n=2211 (4%)		Persistent at-risk n=2984 (6%)		New at-risk n=2539 (5%)	
	RR	95% CI	RR	95% CI	RR	95% CI	RR	95% CI	RR	95% CI
Mental	1.60	1.46-1.76	1		1.02	0.96-1.09	1.21	0.91-1.60	1.26	1.08-1.47
Musculoskeletal	1.16	1.07-1.25	1		1.21	1.07-1.36	0.94	0.73-1.20	1.04	0.95-1.13
Circulatory	1.24	1.08-1.44	1		1.34	1.16-1.54	1.16	0.58-2.30	1.40	0.95-2.05
Digestive	1.31	1.13-1.52	1		1.46	1.12-1.90	1.34	0.98-1.82	0.90	0.87-0.94
Respiratory	1.45	1.11-1.90	1		0.96	0.83-1.11	0.96	0.86-1.07	1.05	0.70-1.57
Injury/poisoning	0.97	0.88-1.07	1		1.18	0.99-1.41	1.42	1.18-1.71	1.53	1.30-1.81

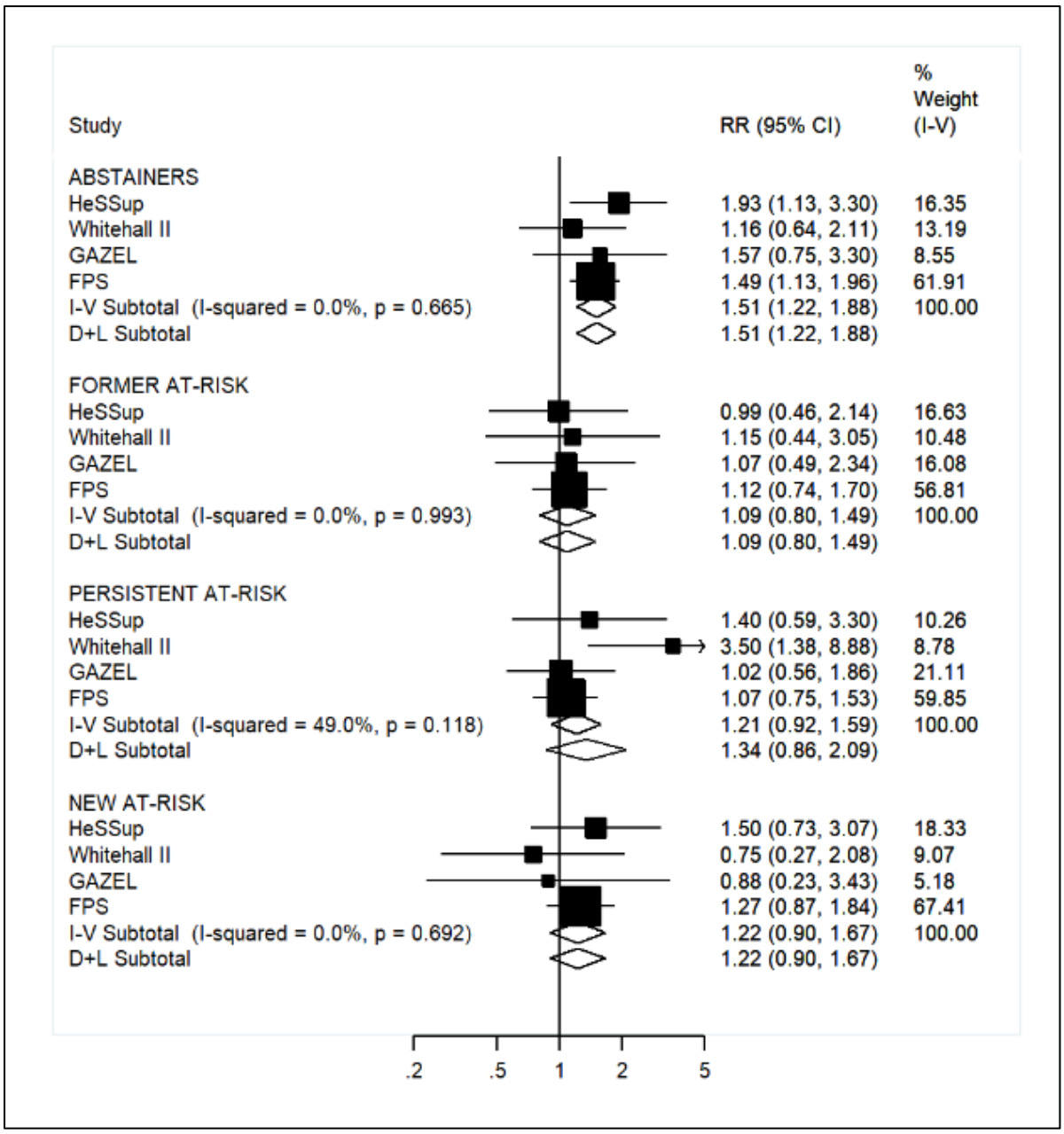
* Adjusted for age, socioeconomic status, smoking, and body mass index. GEE modelling (negative binomial distribution): repeated subject = cohort; type of correlation structure = independent.

Supplementary Table 3. Adjusted* rate ratios (95% Cis) for the association between alcohol use and diagnosis of sickness absence. Pooled data (n=47 520).

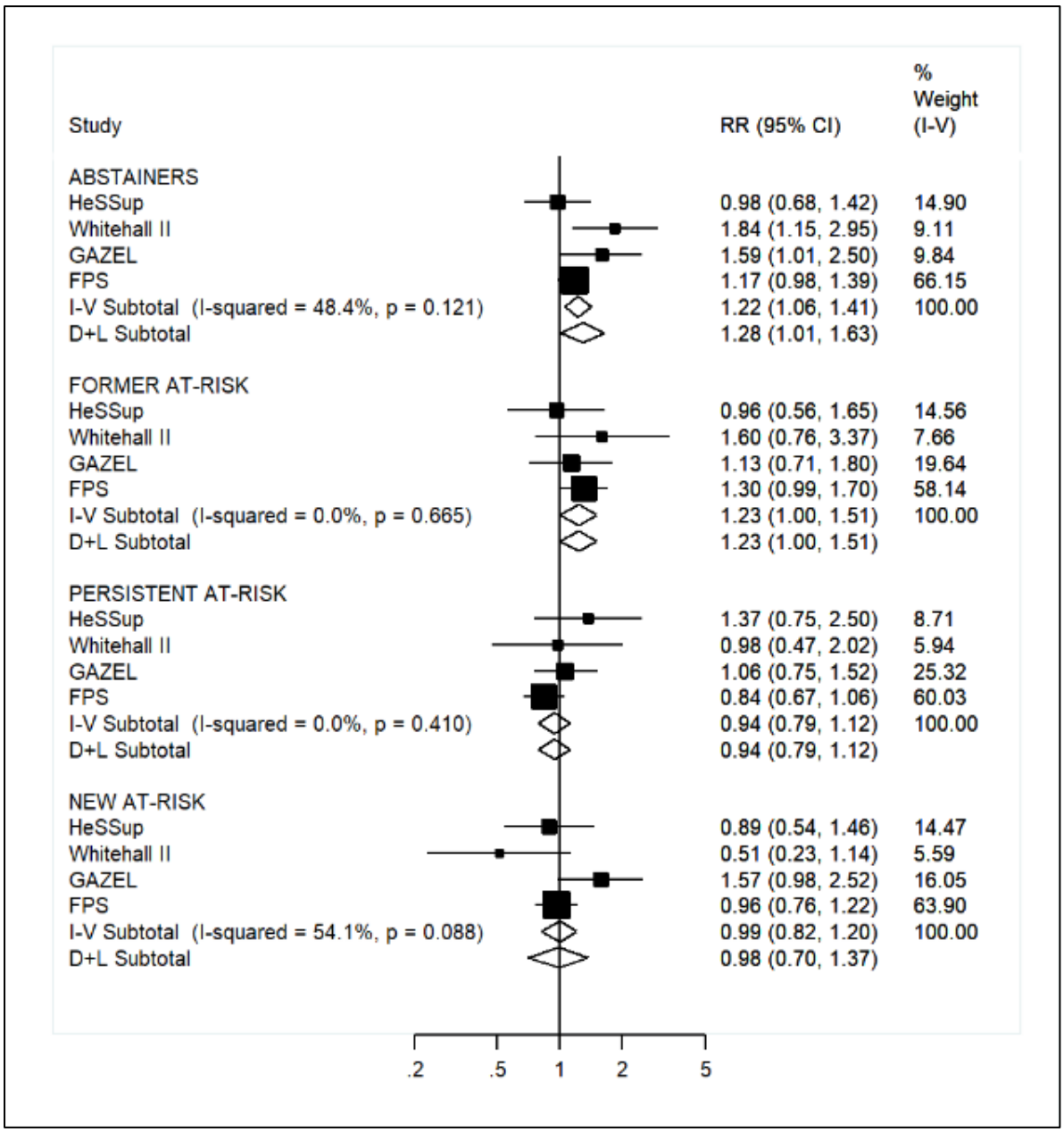
	Abstainers n=4730 (10%)		Low-risk n=36 733 (75%)	At-risk** n=6057 (15%)	
	RR	95% CI	RR (Referent)	RR	95% CI
Mental	1.58	1.27-1.96	1	1.16	0.97-1.39
Musculoskeletal	1.24	1.07-1.20	1	1.07	0.95-1.20
Circulatory	1.39	0.99-1.97	1	1.21	0.92-1.60
Digestive	1.38	1.04-1.82	1	1.16	0.93-1.45
Respiratory	1.35	1.13-1.62	1	0.97	0.84-1.12
Injury or poisoning	1.03	0.83-1.26	1	1.32	1.12-1.55

* Adjusted for age, socioeconomic status, smoking, and body mass index, and cohort

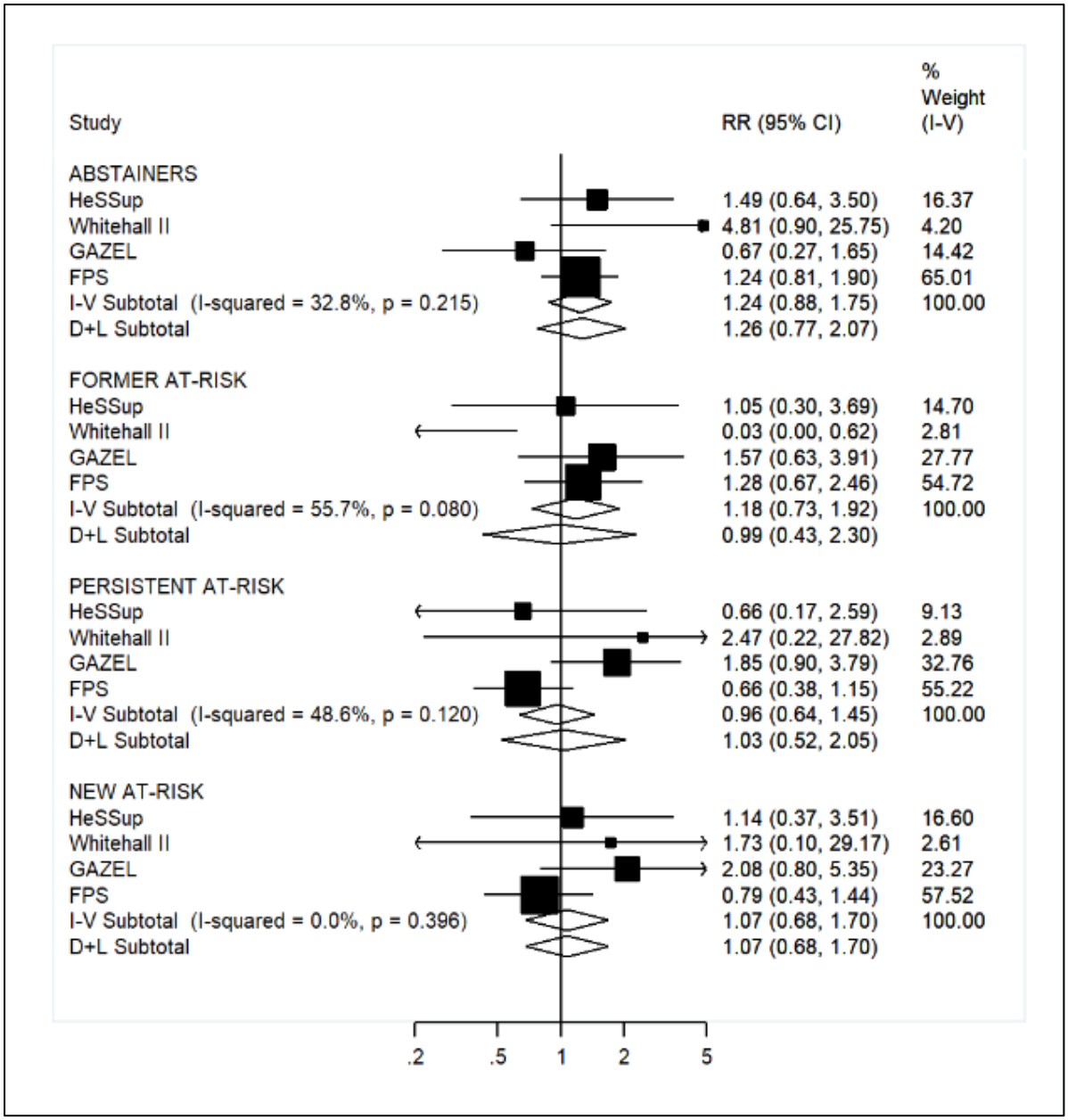
** At-risk drinking either at T1, T2, or both



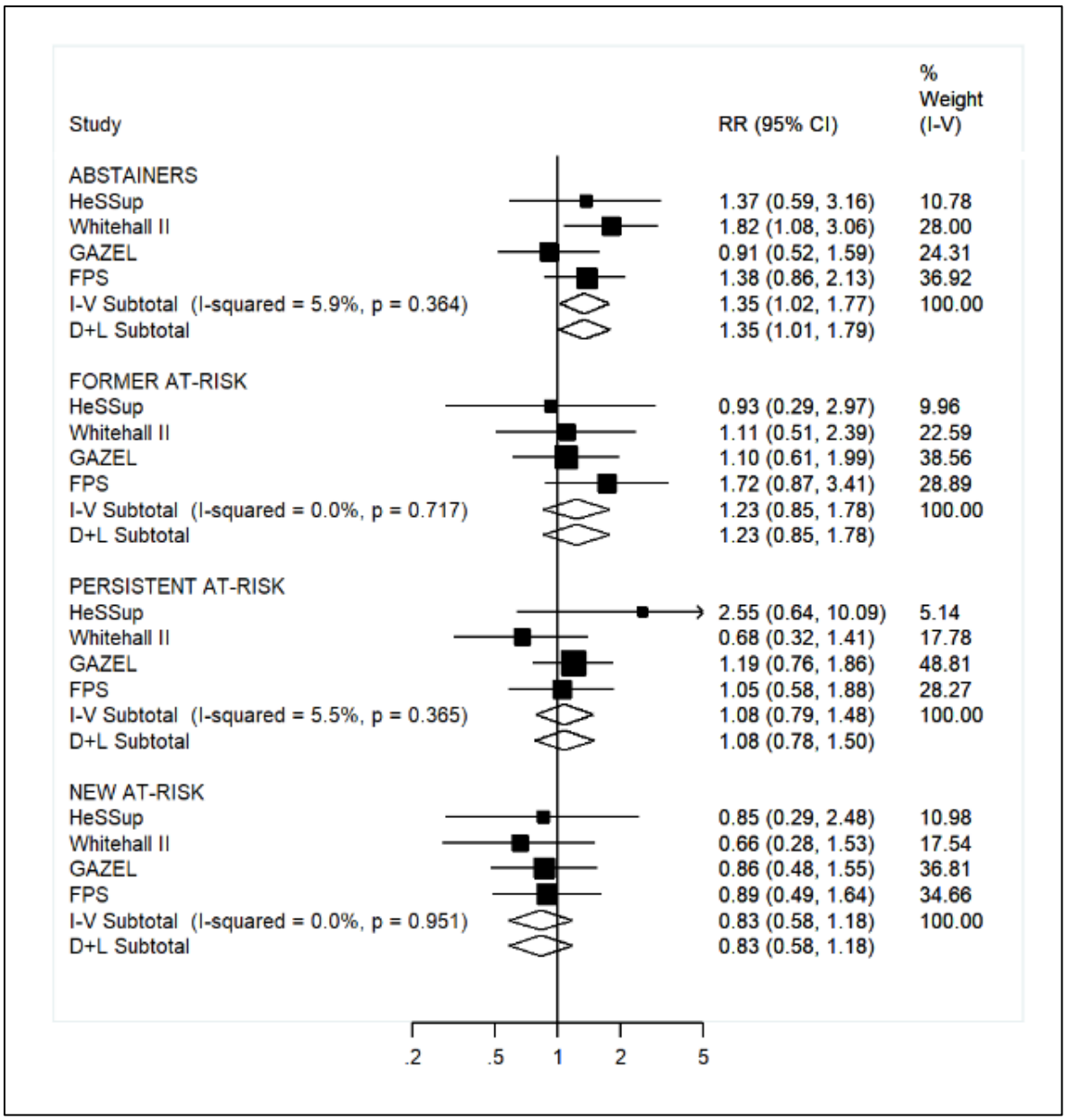
Supplementary Figure 1. Rate ratios (95% CIs) for the association between alcohol use and sickness absence due to mental disorders in each study cohort **(n=47 520)**. Abstainers, former, persistent, and new at-risk drinkers are compared to low-risk drinkers. Adjusted for age, socioeconomic status, smoking, and body mass index. I-V = Fixed effects model; D+L = Random effects model.



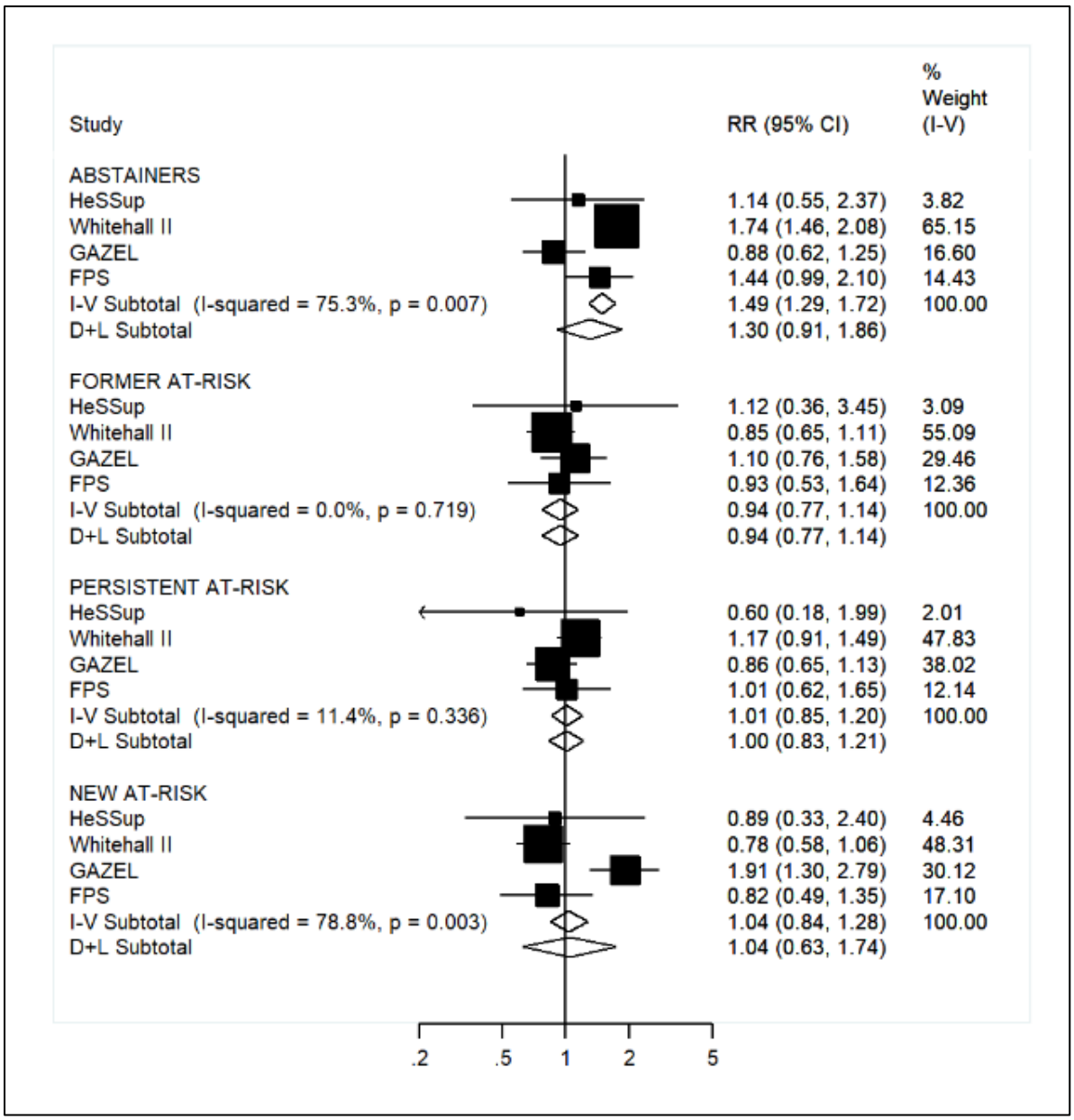
Supplementary Figure 2. Rate ratios (95% CIs) for the association between alcohol use and sickness absence due to musculoskeletal disorders in each study cohort **(n=47 520)**. Abstainers, former, persistent, and new at-risk drinkers are compared to low-risk drinkers. Adjusted for age, socioeconomic status, smoking, and body mass index. I-V = Fixed effects model; D+L = Random effects model.



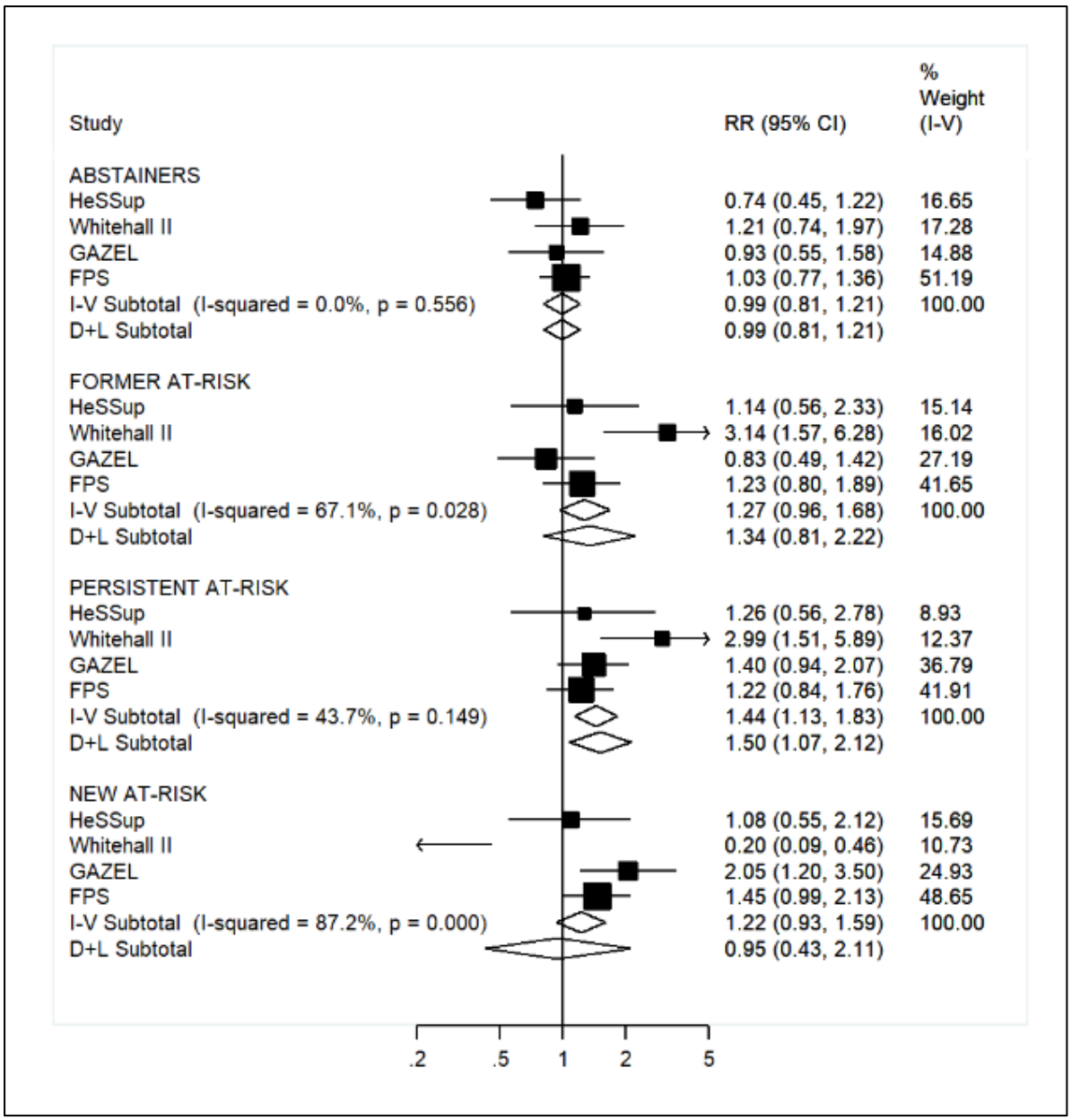
Supplementary Figure 3. Rate ratios (95% CIs) for the association between alcohol use and sickness absence due to diseases of the circulatory system in each study cohort **(n=47 520)**. Abstainers, former, persistent, and new at-risk drinkers are compared to low-risk drinkers. Adjusted for age, socioeconomic status, smoking, and body mass index. I-V = Fixed effects model; D+L = Random effects model.



Supplementary Figure 4. Rate ratios (95% CIs) for the association between alcohol use and sickness absence due to diseases of the digestive system in each study cohort **(n=47 520)**. Abstainers, former, persistent, and new at-risk drinkers are compared to low-risk drinkers. Adjusted for age, socioeconomic status, smoking, and body mass index. I-V = Fixed effects model; D+L = Random effects model.



Supplementary Figure 5. Rate ratios (95% CIs) for the association between alcohol use and sickness absence due to diseases of the respiratory system in each study cohort **(n=47 520)**. Abstainers, former, persistent, and new at-risk drinkers are compared to low-risk drinkers. Adjusted for age, socioeconomic status, smoking, and body mass index. I-V = Fixed effects model; D+L = Random effects model.



Supplementary Figure 6. Rate ratios (95% CIs) for the association between alcohol use and sickness absence due to injury/poisoning in each study cohort **(n=47 520)**. Abstainers, former, persistent, and new at-risk drinkers are compared to low-risk drinkers. Adjusted for age, socioeconomic status, smoking, and body mass index. I-V = Fixed effects model; D+L = Random effects model.