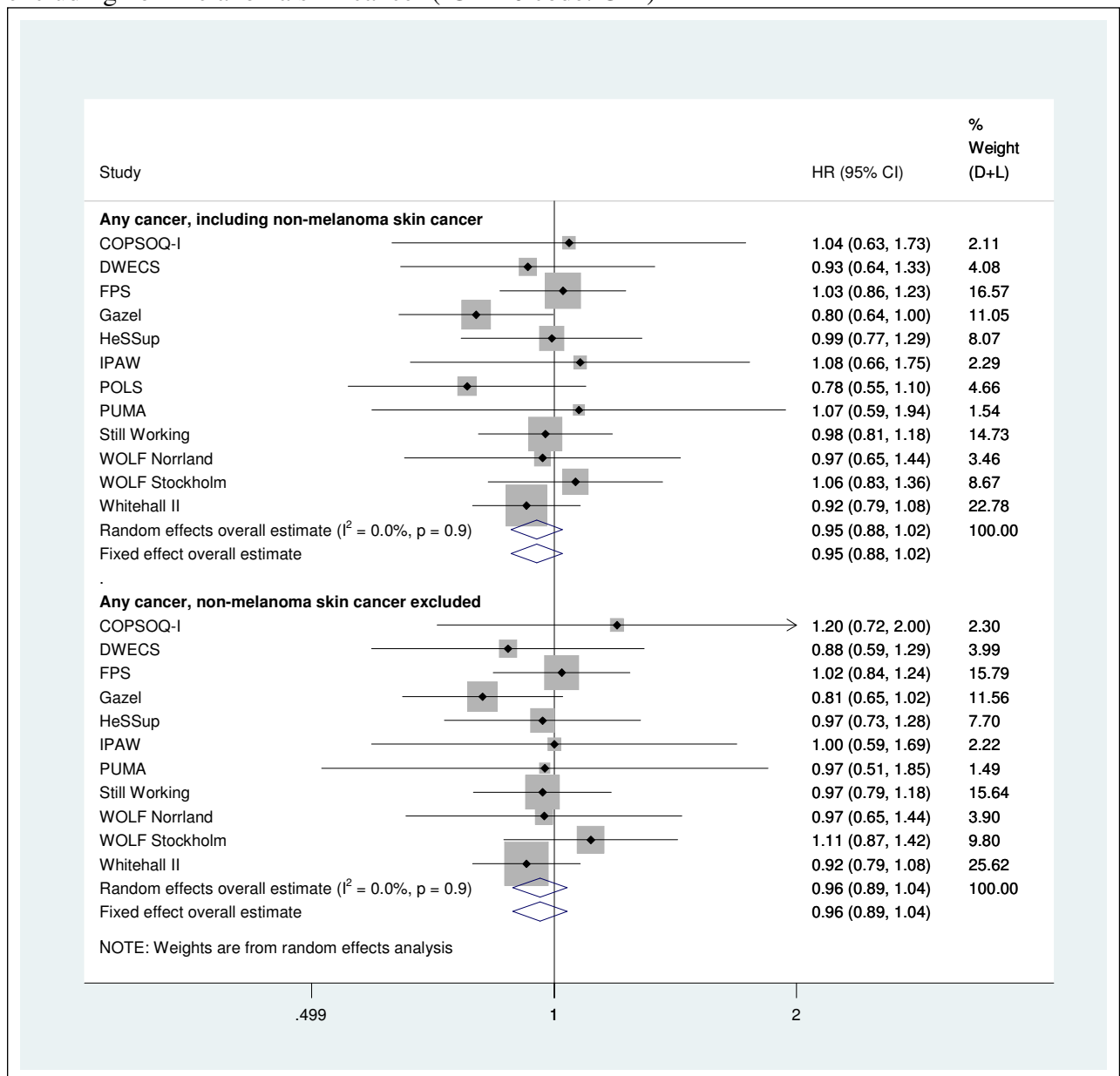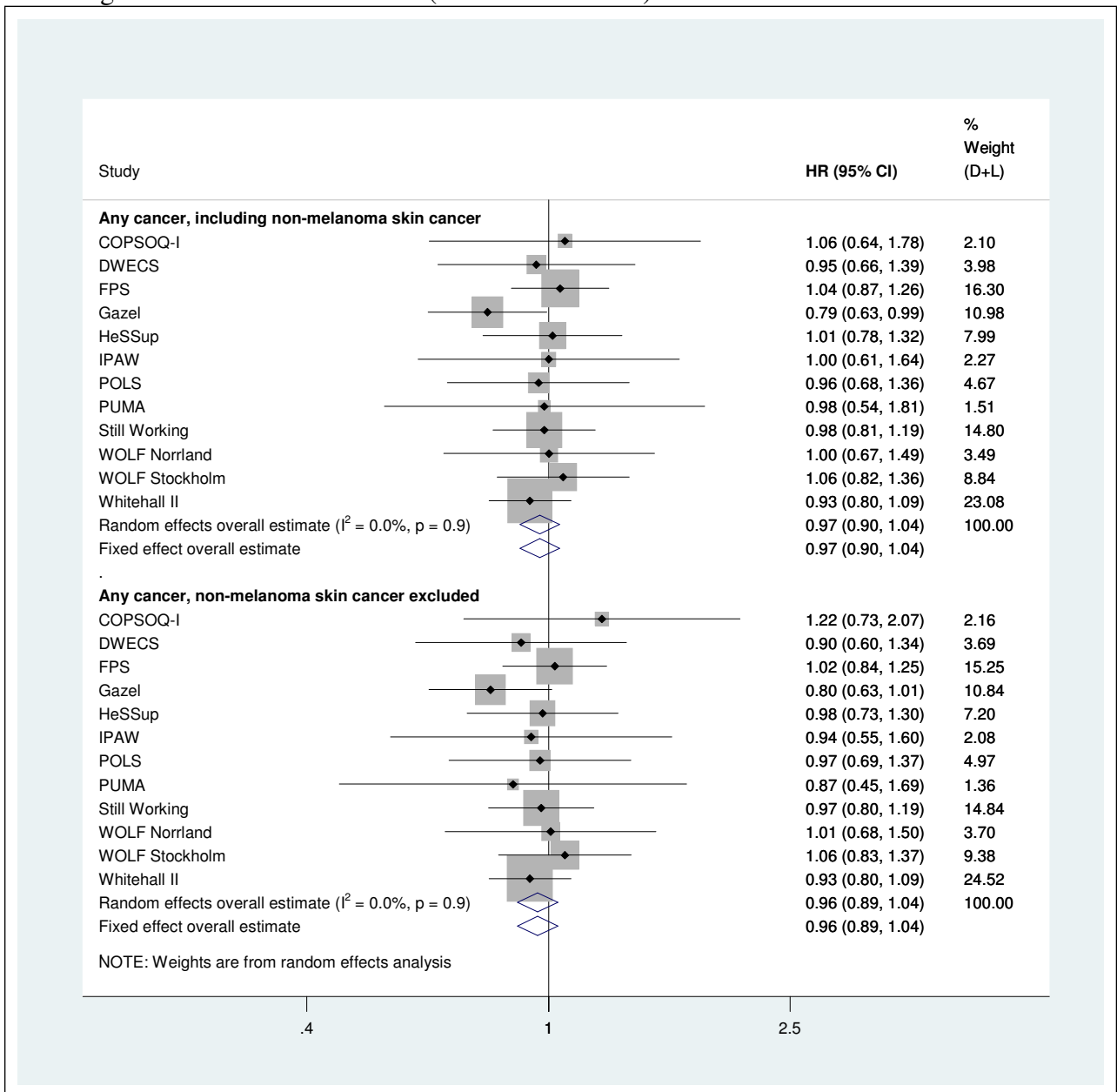## Appendix 4. Meta-analyses [posted as supplied by author]

Figure S2. Age and sex-adjusted associations of job strain and overall cancer risk, including and excluding non-melanoma skin cancer (ICD-10 code: C44)

Study	HR (95% CI)	% Weight (D+L)
Any cancer, including non-melanoma skin cancer		
COPSOQ-I	1.04 (0.63, 1.73)	2.11
DWECS	0.93 (0.64, 1.33)	4.08
FPS	1.03 (0.86, 1.23)	16.57
Gazel	0.80 (0.64, 1.00)	11.05
HeSSup	0.99 (0.77, 1.29)	8.07
IPAW	1.08 (0.66, 1.75)	2.29
POLS	0.78 (0.55, 1.10)	4.66
PUMA	1.07 (0.59, 1.94)	1.54
Still Working	0.98 (0.81, 1.18)	14.73
WOLF Norrland	0.97 (0.65, 1.44)	3.46
WOLF Stockholm	1.06 (0.83, 1.36)	8.67
Whitehall II	0.92 (0.79, 1.08)	22.78
Random effects overall estimate (I^2 = 0.0%, p = 0.9)	0.95 (0.88, 1.02)	100.00
Fixed effect overall estimate	0.95 (0.88, 1.02)	
.		
Any cancer, non-melanoma skin cancer excluded		
COPSOQ-I	1.20 (0.72, 2.00)	2.30
DWECS	0.88 (0.59, 1.29)	3.99
FPS	1.02 (0.84, 1.24)	15.79
Gazel	0.81 (0.65, 1.02)	11.56
HeSSup	0.97 (0.73, 1.28)	7.70
IPAW	1.00 (0.59, 1.69)	2.22
PUMA	0.97 (0.51, 1.85)	1.49
Still Working	0.97 (0.79, 1.18)	15.64
WOLF Norrland	0.97 (0.65, 1.44)	3.90
WOLF Stockholm	1.11 (0.87, 1.42)	9.80
Whitehall II	0.92 (0.79, 1.08)	25.62
Random effects overall estimate (I^2 = 0.0%, p = 0.9)	0.96 (0.89, 1.04)	100.00
Fixed effect overall estimate	0.96 (0.89, 1.04)	

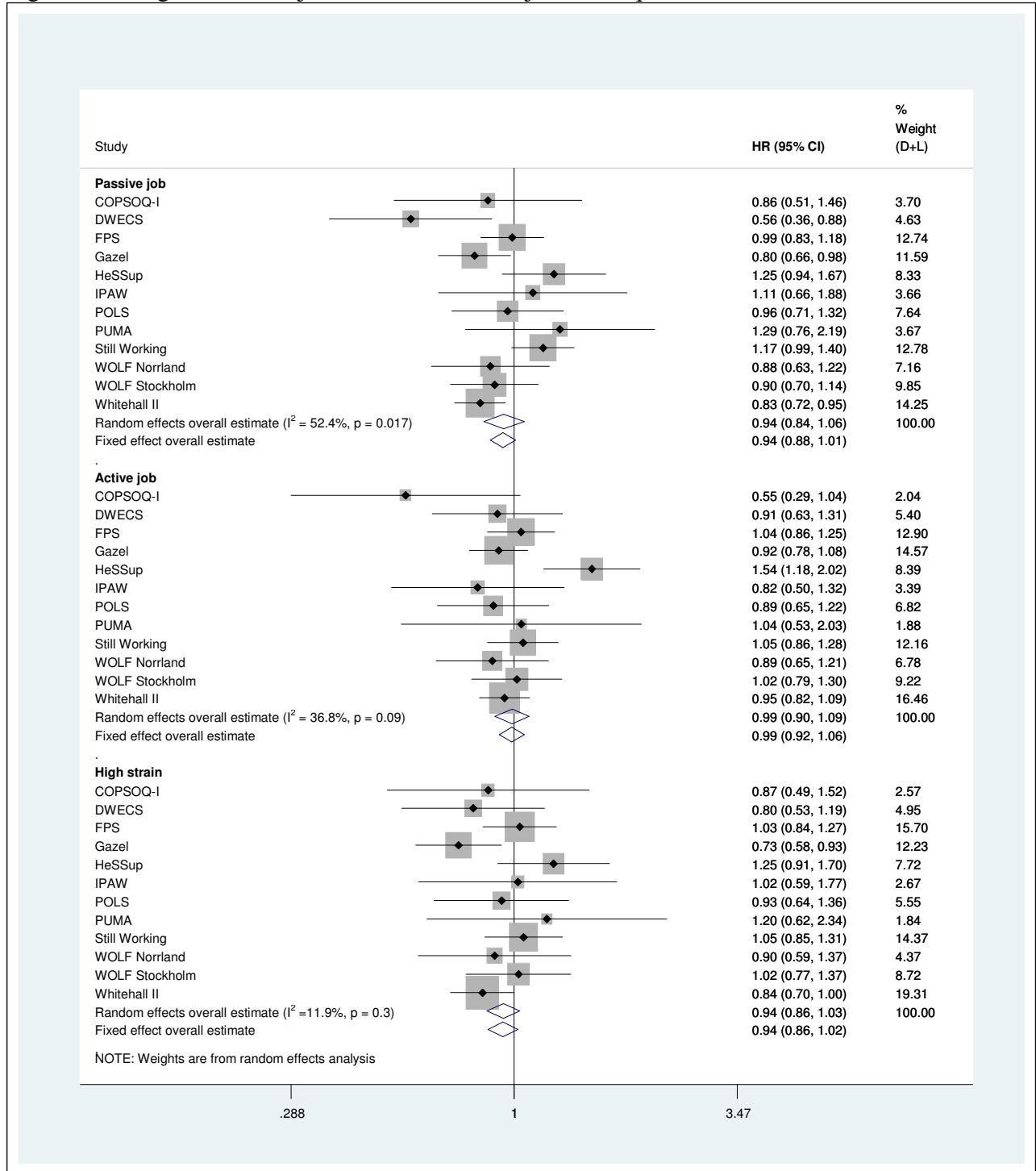NOTE: Weights are from random effects analysis

.499   1   2

HR: hazard ratio, D+L: Der Simonian and Laird

Figure S3. Multivariable-adjusted associations of job strain and overall cancer risk, including and excluding non-melanoma skin cancer (ICD-10 code: C44)

Study	HR (95% CI)	% Weight (D+L)
Any cancer, including non-melanoma skin cancer		
COPSOQ-I	1.06 (0.64, 1.78)	2.10
DWECS	0.95 (0.66, 1.39)	3.98
FPS	1.04 (0.87, 1.26)	16.30
Gazel	0.79 (0.63, 0.99)	10.98
HeSSup	1.01 (0.78, 1.32)	7.99
IPAW	1.00 (0.61, 1.64)	2.27
POLS	0.96 (0.68, 1.36)	4.67
PUMA	0.98 (0.54, 1.81)	1.51
Still Working	0.98 (0.81, 1.19)	14.80
WOLF Norrland	1.00 (0.67, 1.49)	3.49
WOLF Stockholm	1.06 (0.82, 1.36)	8.84
Whitehall II	0.93 (0.80, 1.09)	23.08
Random effects overall estimate (I^2 = 0.0%, p = 0.9)	0.97 (0.90, 1.04)	100.00
Fixed effect overall estimate	0.97 (0.90, 1.04)	
.		
Any cancer, non-melanoma skin cancer excluded		
COPSOQ-I	1.22 (0.73, 2.07)	2.16
DWECS	0.90 (0.60, 1.34)	3.69
FPS	1.02 (0.84, 1.25)	15.25
Gazel	0.80 (0.63, 1.01)	10.84
HeSSup	0.98 (0.73, 1.30)	7.20
IPAW	0.94 (0.55, 1.60)	2.08
POLS	0.97 (0.69, 1.37)	4.97
PUMA	0.87 (0.45, 1.69)	1.36
Still Working	0.97 (0.80, 1.19)	14.84
WOLF Norrland	1.01 (0.68, 1.50)	3.70
WOLF Stockholm	1.06 (0.83, 1.37)	9.38
Whitehall II	0.93 (0.80, 1.09)	24.52
Random effects overall estimate (I^2 = 0.0%, p = 0.9)	0.96 (0.89, 1.04)	100.00
Fixed effect overall estimate	0.96 (0.89, 1.04)	

NOTE: Weights are from random effects analysis

.4   1   2.5
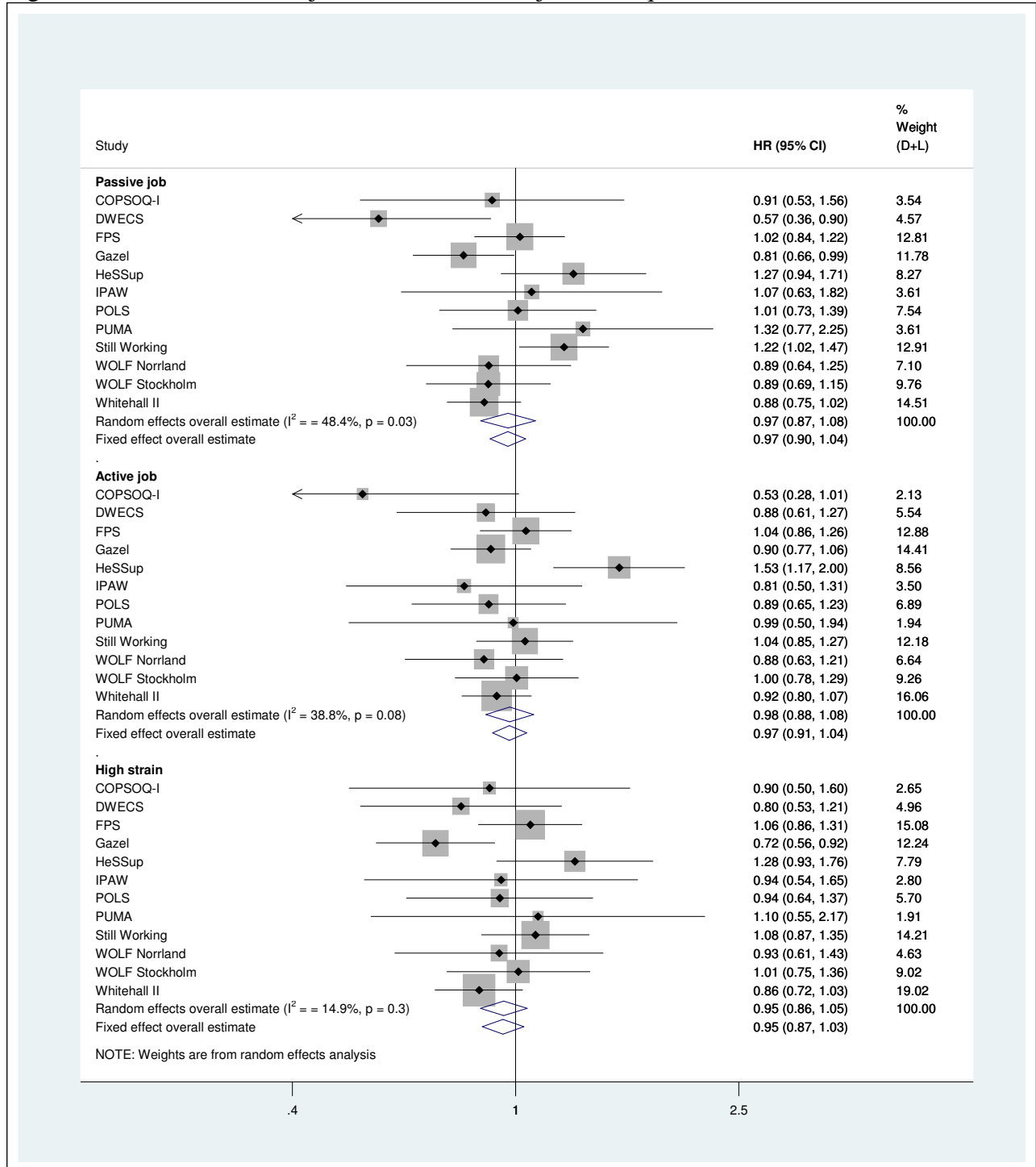
HR: hazard ratio, D+L: Der Simonian and Laird

Figure S4A. Age and sex-adjusted associations of job strain quadrants with overall cancer risk

Study	HR (95% CI)	% Weight (D+L)
Passive job		
COPSOQ-I	0.86 (0.51, 1.46)	3.70
DWECS	0.56 (0.36, 0.88)	4.63
FPS	0.99 (0.83, 1.18)	12.74
Gazel	0.80 (0.66, 0.98)	11.59
HeSSup	1.25 (0.94, 1.67)	8.33
IPAW	1.11 (0.66, 1.88)	3.66
POLS	0.96 (0.71, 1.32)	7.64
PUMA	1.29 (0.76, 2.19)	3.67
Still Working	1.17 (0.99, 1.40)	12.78
WOLF Norrland	0.88 (0.63, 1.22)	7.16
WOLF Stockholm	0.90 (0.70, 1.14)	9.85
Whitehall II	0.83 (0.72, 0.95)	14.25
Random effects overall estimate (I^2 = 52.4%, p = 0.017)	0.94 (0.84, 1.06)	100.00
Fixed effect overall estimate	0.94 (0.88, 1.01)	
.		
Active job		
COPSOQ-I	0.55 (0.29, 1.04)	2.04
DWECS	0.91 (0.63, 1.31)	5.40
FPS	1.04 (0.86, 1.25)	12.90
Gazel	0.92 (0.78, 1.08)	14.57
HeSSup	1.54 (1.18, 2.02)	8.39
IPAW	0.82 (0.50, 1.32)	3.39
POLS	0.89 (0.65, 1.22)	6.82
PUMA	1.04 (0.53, 2.03)	1.88
Still Working	1.05 (0.86, 1.28)	12.16
WOLF Norrland	0.89 (0.65, 1.21)	6.78
WOLF Stockholm	1.02 (0.79, 1.30)	9.22
Whitehall II	0.95 (0.82, 1.09)	16.46
Random effects overall estimate (I^2 = 36.8%, p = 0.09)	0.99 (0.90, 1.09)	100.00
Fixed effect overall estimate	0.99 (0.92, 1.06)	
.		
High strain		
COPSOQ-I	0.87 (0.49, 1.52)	2.57
DWECS	0.80 (0.53, 1.19)	4.95
FPS	1.03 (0.84, 1.27)	15.70
Gazel	0.73 (0.58, 0.93)	12.23
HeSSup	1.25 (0.91, 1.70)	7.72
IPAW	1.02 (0.59, 1.77)	2.67
POLS	0.93 (0.64, 1.36)	5.55
PUMA	1.20 (0.62, 2.34)	1.84
Still Working	1.05 (0.85, 1.31)	14.37
WOLF Norrland	0.90 (0.59, 1.37)	4.37
WOLF Stockholm	1.02 (0.77, 1.37)	8.72
Whitehall II	0.84 (0.70, 1.00)	19.31
Random effects overall estimate (I^2 =11.9%, p = 0.3)	0.94 (0.86, 1.03)	100.00
Fixed effect overall estimate	0.94 (0.86, 1.02)	

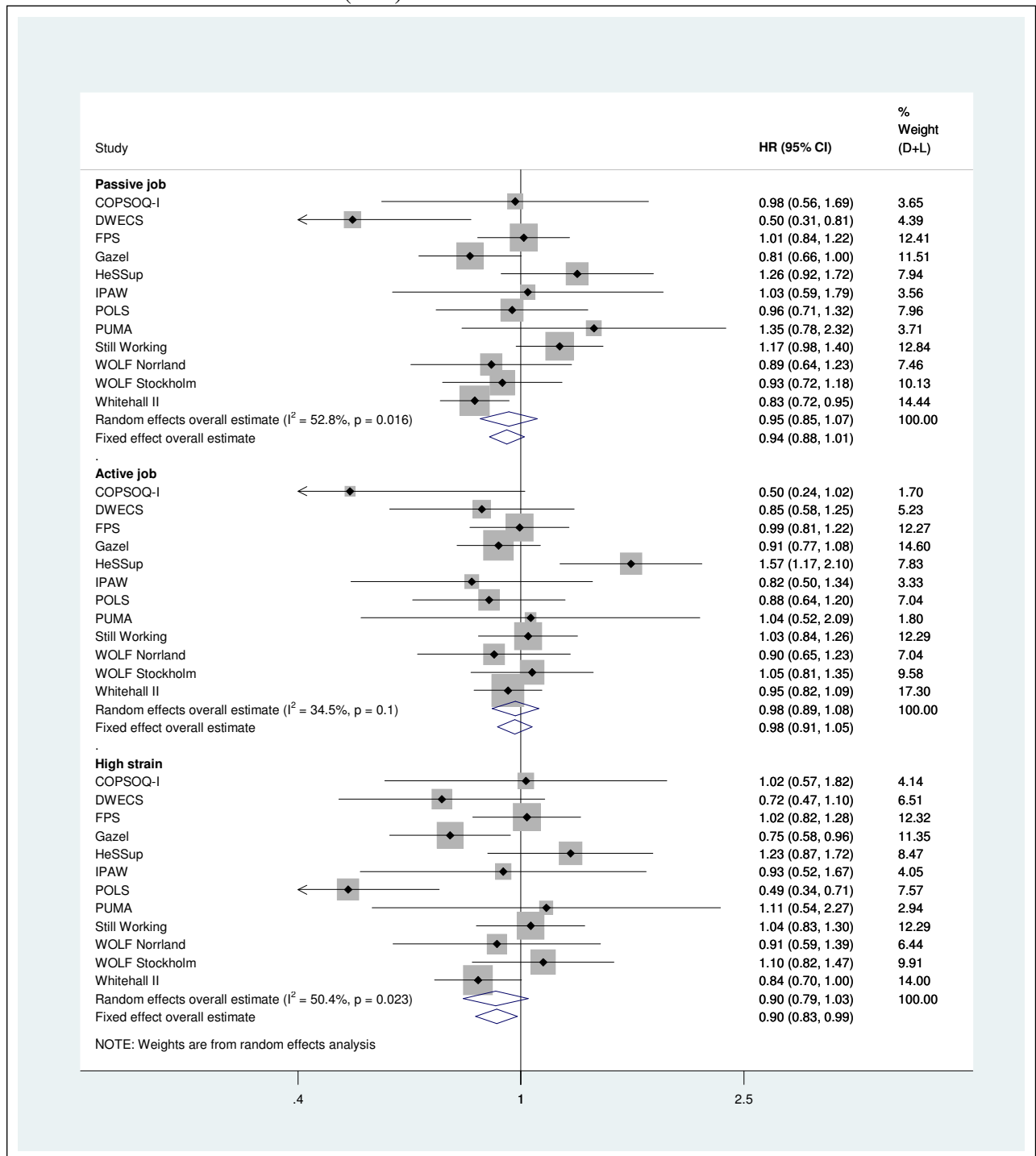NOTE: Weights are from random effects analysis

.288   1   3.47

HR: hazard ratio, D+L: Der Simonian and Laird

Figure S4B. Multivariable-adjusted associations of job strain quadrants with overall cancer risk

Study	HR (95% CI)	% Weight (D+L)
Passive job		
COPSOQ-I	0.91 (0.53, 1.56)	3.54
DWECS	0.57 (0.36, 0.90)	4.57
FPS	1.02 (0.84, 1.22)	12.81
Gazel	0.81 (0.66, 0.99)	11.78
HeSSup	1.27 (0.94, 1.71)	8.27
IPAW	1.07 (0.63, 1.82)	3.61
POLS	1.01 (0.73, 1.39)	7.54
PUMA	1.32 (0.77, 2.25)	3.61
Still Working	1.22 (1.02, 1.47)	12.91
WOLF Norrland	0.89 (0.64, 1.25)	7.10
WOLF Stockholm	0.89 (0.69, 1.15)	9.76
Whitehall II	0.88 (0.75, 1.02)	14.51
Random effects overall estimate (I^2 = 48.4%, p = 0.03)	0.97 (0.87, 1.08)	100.00
Fixed effect overall estimate	0.97 (0.90, 1.04)	
Active job		
COPSOQ-I	0.53 (0.28, 1.01)	2.13
DWECS	0.88 (0.61, 1.27)	5.54
FPS	1.04 (0.86, 1.26)	12.88
Gazel	0.90 (0.77, 1.06)	14.41
HeSSup	1.53 (1.17, 2.00)	8.56
IPAW	0.81 (0.50, 1.31)	3.50
POLS	0.89 (0.65, 1.23)	6.89
PUMA	0.99 (0.50, 1.94)	1.94
Still Working	1.04 (0.85, 1.27)	12.18
WOLF Norrland	0.88 (0.63, 1.21)	6.64
WOLF Stockholm	1.00 (0.78, 1.29)	9.26
Whitehall II	0.92 (0.80, 1.07)	16.06
Random effects overall estimate (I^2 = 38.8%, p = 0.08)	0.98 (0.88, 1.08)	100.00
Fixed effect overall estimate	0.97 (0.91, 1.04)	
High strain		
COPSOQ-I	0.90 (0.50, 1.60)	2.65
DWECS	0.80 (0.53, 1.21)	4.96
FPS	1.06 (0.86, 1.31)	15.08
Gazel	0.72 (0.56, 0.92)	12.24
HeSSup	1.28 (0.93, 1.76)	7.79
IPAW	0.94 (0.54, 1.65)	2.80
POLS	0.94 (0.64, 1.37)	5.70
PUMA	1.10 (0.55, 2.17)	1.91
Still Working	1.08 (0.87, 1.35)	14.21
WOLF Norrland	0.93 (0.61, 1.43)	4.63
WOLF Stockholm	1.01 (0.75, 1.36)	9.02
Whitehall II	0.86 (0.72, 1.03)	19.02
Random effects overall estimate (I^2 = 14.9%, p = 0.3)	0.95 (0.86, 1.05)	100.00
Fixed effect overall estimate	0.95 (0.87, 1.03)	

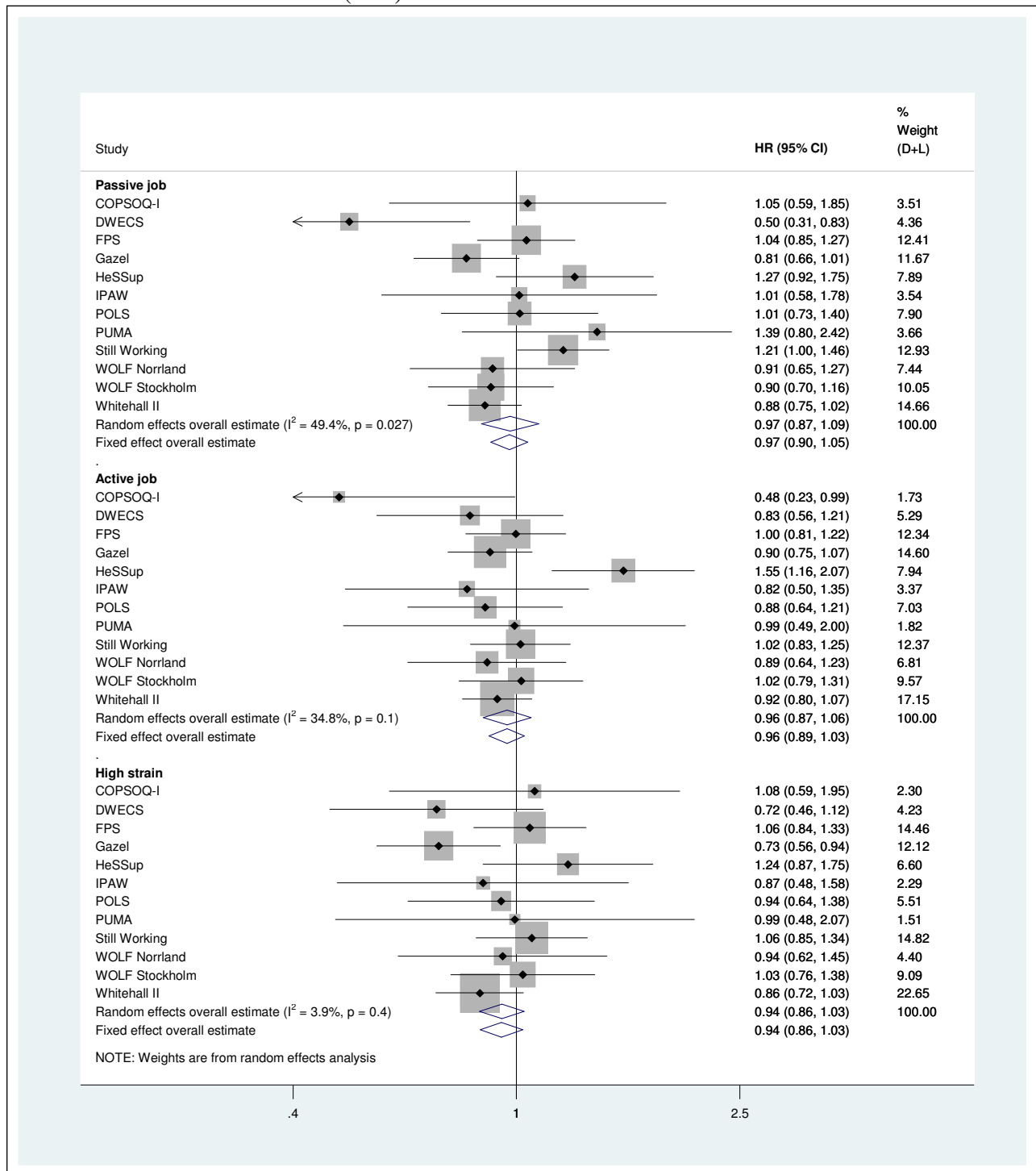NOTE: Weights are from random effects analysis

.4   1   2.5

HR: hazard ratio, D+L: Der Simonian and Laird

Figure S5A. Age and sex-adjusted associations of job strain quadrants with overall cancer risk, with non-melanoma skin cancer (C44) excluded

Study	HR (95% CI)	% Weight (D+L)
Passive job		
COPSOQ-I	0.98 (0.56, 1.69)	3.65
DWECS	0.50 (0.31, 0.81)	4.39
FPS	1.01 (0.84, 1.22)	12.41
Gazel	0.81 (0.66, 1.00)	11.51
HeSSup	1.26 (0.92, 1.72)	7.94
IPAW	1.03 (0.59, 1.79)	3.56
POLS	0.96 (0.71, 1.32)	7.96
PUMA	1.35 (0.78, 2.32)	3.71
Still Working	1.17 (0.98, 1.40)	12.84
WOLF Norrland	0.89 (0.64, 1.23)	7.46
WOLF Stockholm	0.93 (0.72, 1.18)	10.13
Whitehall II	0.83 (0.72, 0.95)	14.44
Random effects overall estimate (I^2 = 52.8%, p = 0.016)	0.95 (0.85, 1.07)	100.00
Fixed effect overall estimate	0.94 (0.88, 1.01)	
.		
Active job		
COPSOQ-I	0.50 (0.24, 1.02)	1.70
DWECS	0.85 (0.58, 1.25)	5.23
FPS	0.99 (0.81, 1.22)	12.27
Gazel	0.91 (0.77, 1.08)	14.60
HeSSup	1.57 (1.17, 2.10)	7.83
IPAW	0.82 (0.50, 1.34)	3.33
POLS	0.88 (0.64, 1.20)	7.04
PUMA	1.04 (0.52, 2.09)	1.80
Still Working	1.03 (0.84, 1.26)	12.29
WOLF Norrland	0.90 (0.65, 1.23)	7.04
WOLF Stockholm	1.05 (0.81, 1.35)	9.58
Whitehall II	0.95 (0.82, 1.09)	17.30
Random effects overall estimate (I^2 = 34.5%, p = 0.1)	0.98 (0.89, 1.08)	100.00
Fixed effect overall estimate	0.98 (0.91, 1.05)	
.		
High strain		
COPSOQ-I	1.02 (0.57, 1.82)	4.14
DWECS	0.72 (0.47, 1.10)	6.51
FPS	1.02 (0.82, 1.28)	12.32
Gazel	0.75 (0.58, 0.96)	11.35
HeSSup	1.23 (0.87, 1.72)	8.47
IPAW	0.93 (0.52, 1.67)	4.05
POLS	0.49 (0.34, 0.71)	7.57
PUMA	1.11 (0.54, 2.27)	2.94
Still Working	1.04 (0.83, 1.30)	12.29
WOLF Norrland	0.91 (0.59, 1.39)	6.44
WOLF Stockholm	1.10 (0.82, 1.47)	9.91
Whitehall II	0.84 (0.70, 1.00)	14.00
Random effects overall estimate (I^2 = 50.4%, p = 0.023)	0.90 (0.79, 1.03)	100.00
Fixed effect overall estimate	0.90 (0.83, 0.99)	

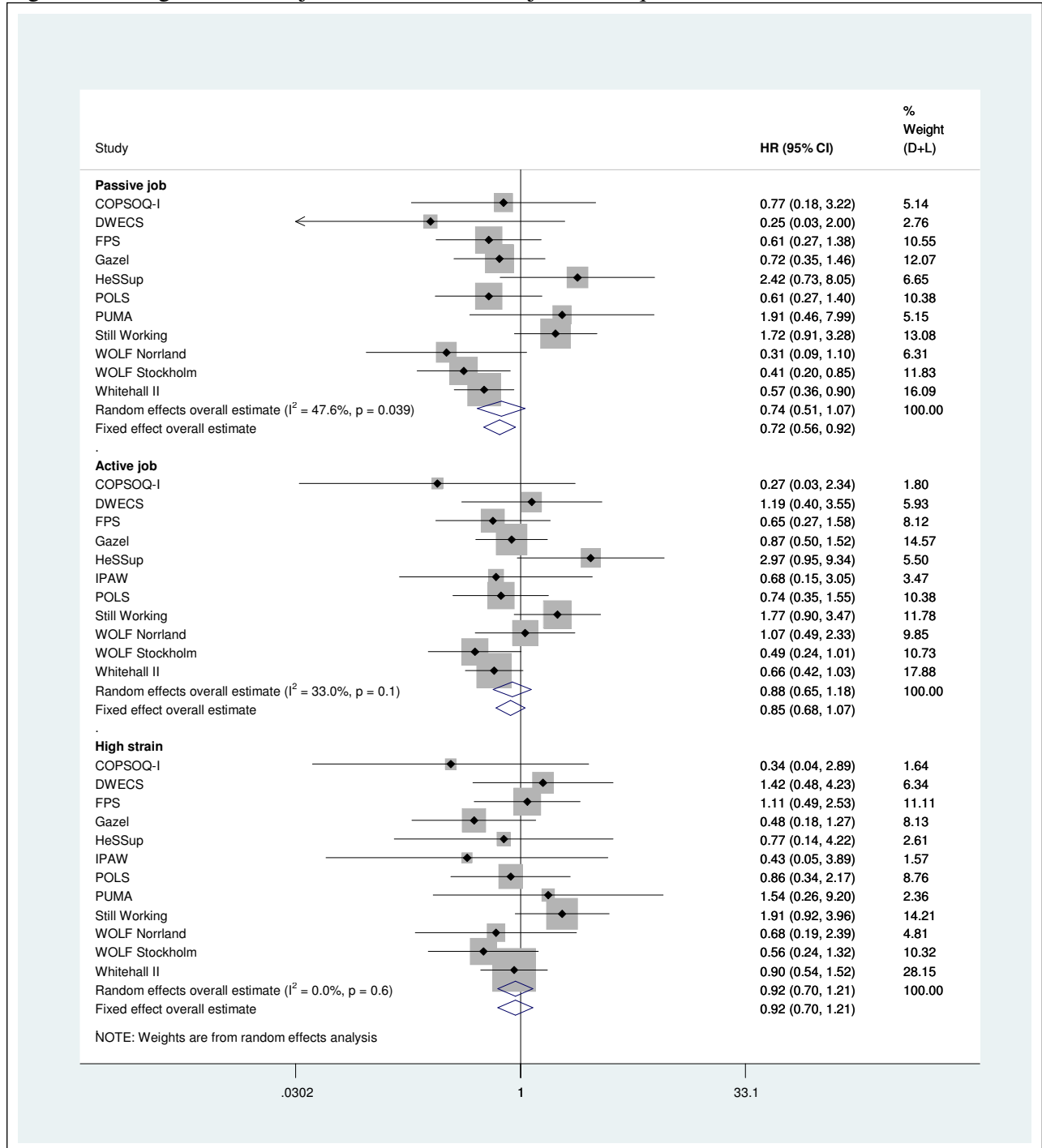NOTE: Weights are from random effects analysis

HR: hazard ratio, D+L: Der Simonian and Laird

Figure S5B. Multivariable-adjusted associations of job strain quadrants with overall cancer risk, with non-melanoma skin cancer (C44) excluded
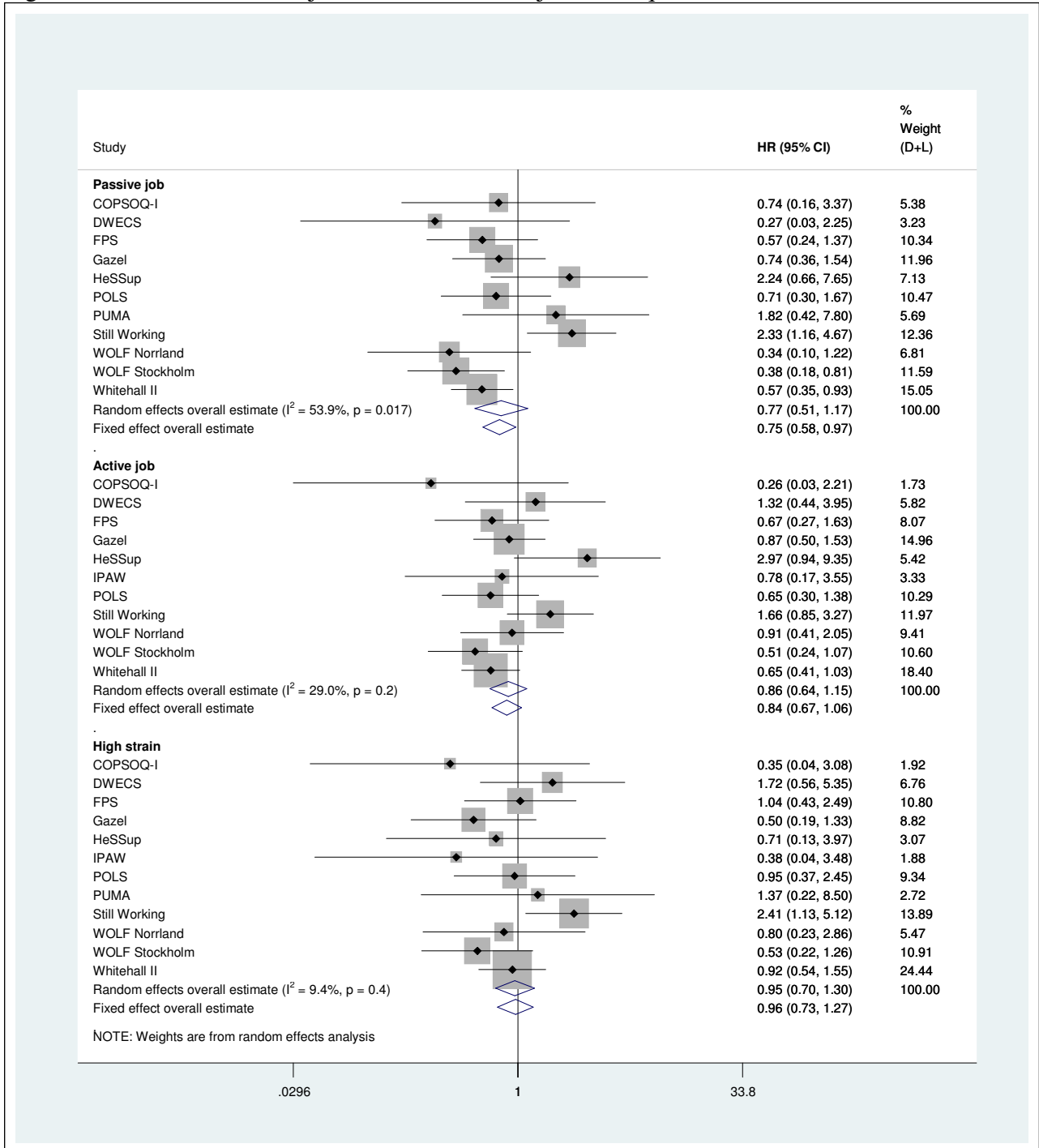

HR: hazard ratio, D+L: Der Simonian and Laird

Figure S6A. Age and sex-adjusted associations of job strain quadrants with colorectal cancer risk
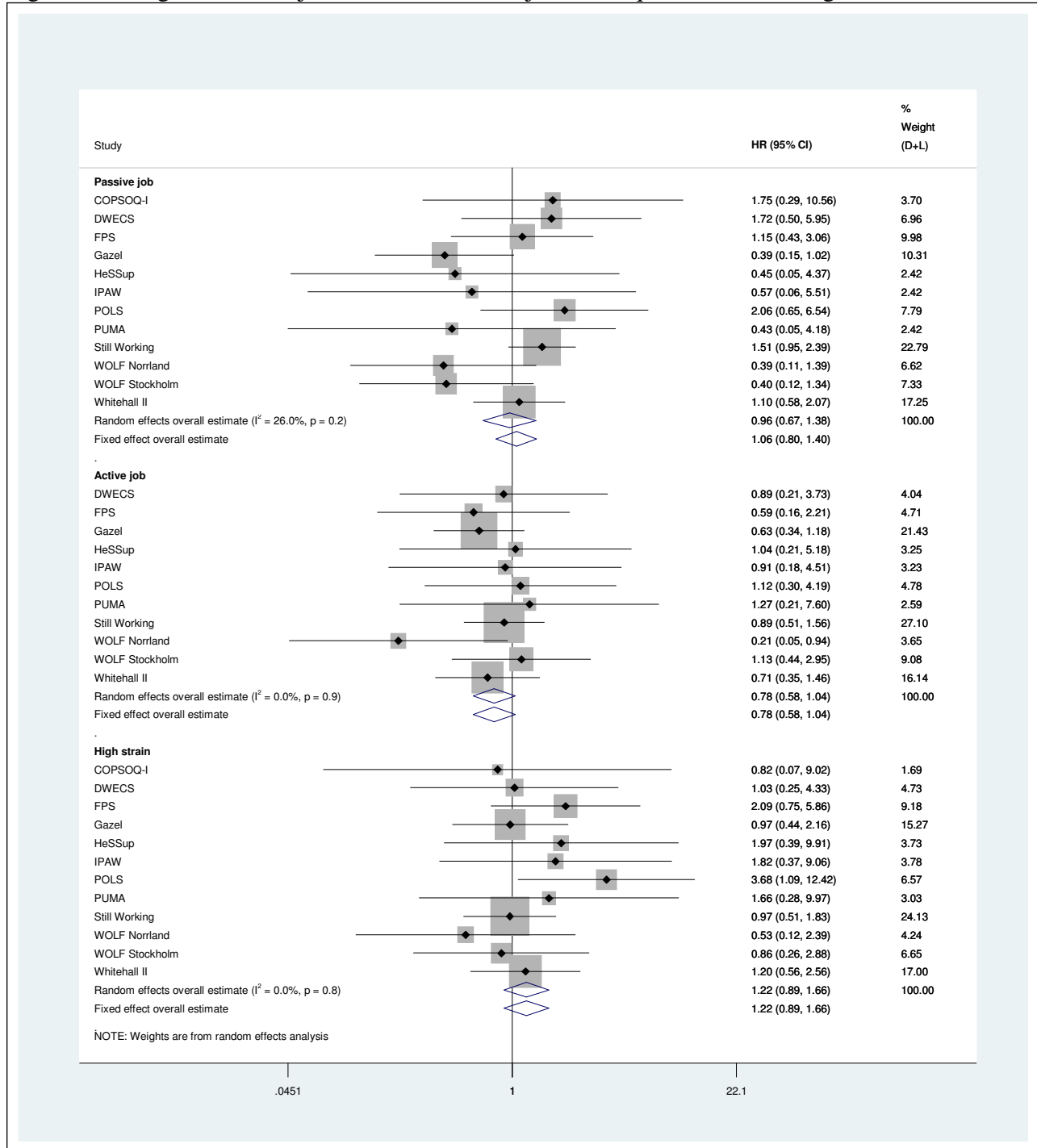
Study	HR (95% CI)	% Weight (D+L)
Passive job		
COPSOQ-I	0.77 (0.18, 3.22)	5.14
DWECS	0.25 (0.03, 2.00)	2.76
FPS	0.61 (0.27, 1.38)	10.55
Gazel	0.72 (0.35, 1.46)	12.07
HeSSup	2.42 (0.73, 8.05)	6.65
POLS	0.61 (0.27, 1.40)	10.38
PUMA	1.91 (0.46, 7.99)	5.15
Still Working	1.72 (0.91, 3.28)	13.08
WOLF Norrland	0.31 (0.09, 1.10)	6.31
WOLF Stockholm	0.41 (0.20, 0.85)	11.83
Whitehall II	0.57 (0.36, 0.90)	16.09
Random effects overall estimate (I^2 = 47.6%, p = 0.039)	0.74 (0.51, 1.07)	100.00
Fixed effect overall estimate	0.72 (0.56, 0.92)	
.		
Active job		
COPSOQ-I	0.27 (0.03, 2.34)	1.80
DWECS	1.19 (0.40, 3.55)	5.93
FPS	0.65 (0.27, 1.58)	8.12
Gazel	0.87 (0.50, 1.52)	14.57
HeSSup	2.97 (0.95, 9.34)	5.50
IPAW	0.68 (0.15, 3.05)	3.47
POLS	0.74 (0.35, 1.55)	10.38
Still Working	1.77 (0.90, 3.47)	11.78
WOLF Norrland	1.07 (0.49, 2.33)	9.85
WOLF Stockholm	0.49 (0.24, 1.01)	10.73
Whitehall II	0.66 (0.42, 1.03)	17.88
Random effects overall estimate (I^2 = 33.0%, p = 0.1)	0.88 (0.65, 1.18)	100.00
Fixed effect overall estimate	0.85 (0.68, 1.07)	
.		
High strain		
COPSOQ-I	0.34 (0.04, 2.89)	1.64
DWECS	1.42 (0.48, 4.23)	6.34
FPS	1.11 (0.49, 2.53)	11.11
Gazel	0.48 (0.18, 1.27)	8.13
HeSSup	0.77 (0.14, 4.22)	2.61
IPAW	0.43 (0.05, 3.89)	1.57
POLS	0.86 (0.34, 2.17)	8.76
PUMA	1.54 (0.26, 9.20)	2.36
Still Working	1.91 (0.92, 3.96)	14.21
WOLF Norrland	0.68 (0.19, 2.39)	4.81
WOLF Stockholm	0.56 (0.24, 1.32)	10.32
Whitehall II	0.90 (0.54, 1.52)	28.15
Random effects overall estimate (I^2 = 0.0%, p = 0.6)	0.92 (0.70, 1.21)	100.00
Fixed effect overall estimate	0.92 (0.70, 1.21)	

NOTE: Weights are from random effects analysis

.0302   1   33.1

HR: hazard ratio, D+L: Der Simonian and Laird

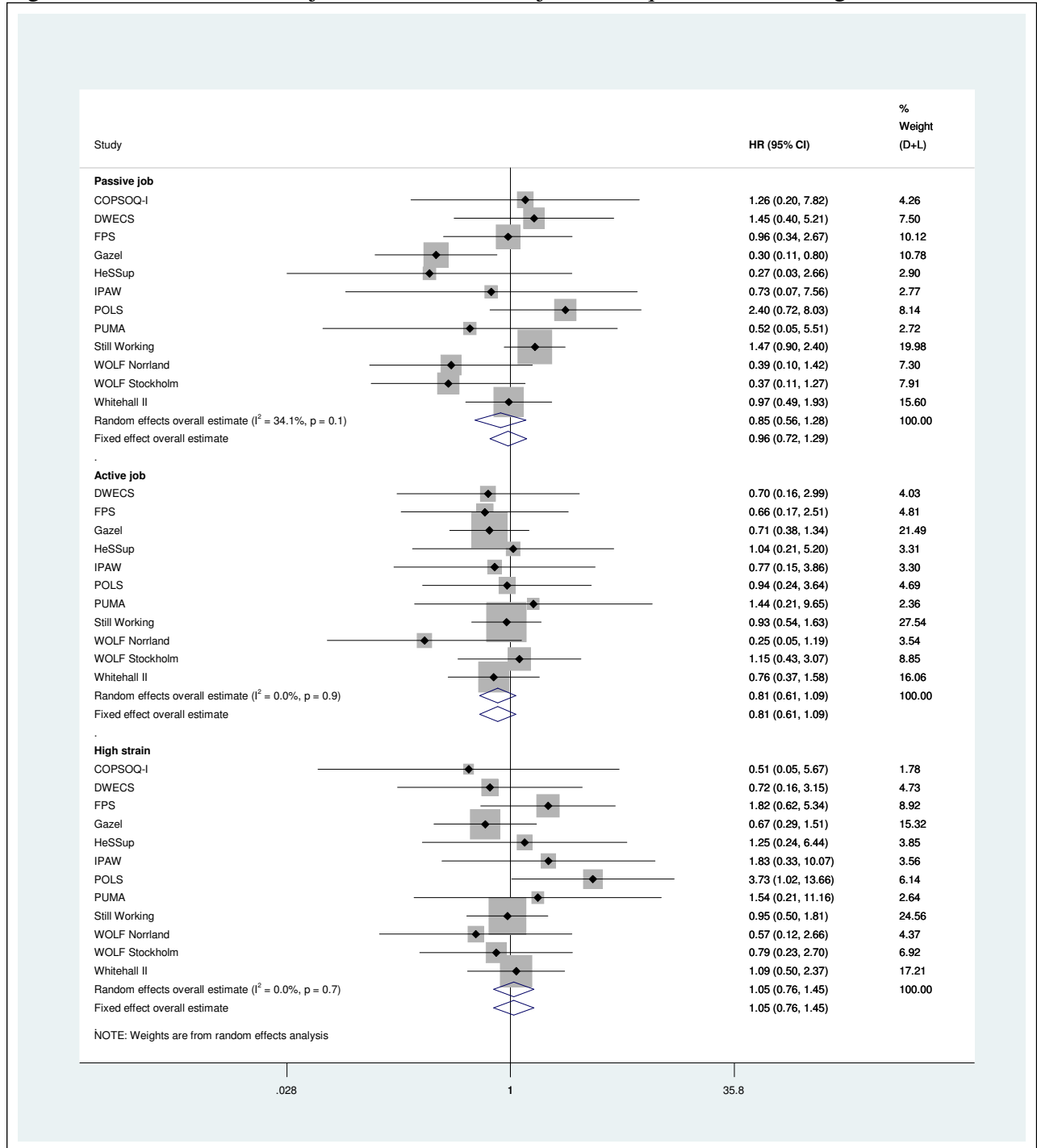Figure S6B. Multivariable-adjusted associations of job strain quadrants with colorectal cancer risk

Study	HR (95% CI)	% Weight (D+L)
Passive job		
COPSOQ-I	0.74 (0.16, 3.37)	5.38
DWECS	0.27 (0.03, 2.25)	3.23
FPS	0.57 (0.24, 1.37)	10.34
Gazel	0.74 (0.36, 1.54)	11.96
HeSSup	2.24 (0.66, 7.65)	7.13
POLS	0.71 (0.30, 1.67)	10.47
PUMA	1.82 (0.42, 7.80)	5.69
Still Working	2.33 (1.16, 4.67)	12.36
WOLF Norrland	0.34 (0.10, 1.22)	6.81
WOLF Stockholm	0.38 (0.18, 0.81)	11.59
Whitehall II	0.57 (0.35, 0.93)	15.05
Random effects overall estimate (I^2 = 53.9%, p = 0.017)	0.77 (0.51, 1.17)	100.00
Fixed effect overall estimate	0.75 (0.58, 0.97)	
.		
Active job		
COPSOQ-I	0.26 (0.03, 2.21)	1.73
DWECS	1.32 (0.44, 3.95)	5.82
FPS	0.67 (0.27, 1.63)	8.07
Gazel	0.87 (0.50, 1.53)	14.96
HeSSup	2.97 (0.94, 9.35)	5.42
IPAW	0.78 (0.17, 3.55)	3.33
POLS	0.65 (0.30, 1.38)	10.29
Still Working	1.66 (0.85, 3.27)	11.97
WOLF Norrland	0.91 (0.41, 2.05)	9.41
WOLF Stockholm	0.51 (0.24, 1.07)	10.60
Whitehall II	0.65 (0.41, 1.03)	18.40
Random effects overall estimate (I^2 = 29.0%, p = 0.2)	0.86 (0.64, 1.15)	100.00
Fixed effect overall estimate	0.84 (0.67, 1.06)	
.		
High strain		
COPSOQ-I	0.35 (0.04, 3.08)	1.92
DWECS	1.72 (0.56, 5.35)	6.76
FPS	1.04 (0.43, 2.49)	10.80
Gazel	0.50 (0.19, 1.33)	8.82
HeSSup	0.71 (0.13, 3.97)	3.07
IPAW	0.38 (0.04, 3.48)	1.88
POLS	0.95 (0.37, 2.45)	9.34
PUMA	1.37 (0.22, 8.50)	2.72
Still Working	2.41 (1.13, 5.12)	13.89
WOLF Norrland	0.80 (0.23, 2.86)	5.47
WOLF Stockholm	0.53 (0.22, 1.26)	10.91
Whitehall II	0.92 (0.54, 1.55)	24.44
Random effects overall estimate (I^2 = 9.4%, p = 0.4)	0.95 (0.70, 1.30)	100.00
Fixed effect overall estimate	0.96 (0.73, 1.27)	

NOTE: Weights are from random effects analysis

.0296   1   33.8

HR: hazard ratio, D+L: Der Simonian and Laird

Figure S7A. Age and sex-adjusted associations of job strain quadrants with lung cancer risk

Study	HR (95% CI)	% Weight (D+L)
Passive job		
COPSOQ-I	1.75 (0.29, 10.56)	3.70
DWECS	1.72 (0.50, 5.95)	6.96
FPS	1.15 (0.43, 3.06)	9.98
Gazel	0.39 (0.15, 1.02)	10.31
HeSSup	0.45 (0.05, 4.37)	2.42
IPAW	0.57 (0.06, 5.51)	2.42
POLS	2.06 (0.65, 6.54)	7.79
PUMA	0.43 (0.05, 4.18)	2.42
Still Working	1.51 (0.95, 2.39)	22.79
WOLF Norrland	0.39 (0.11, 1.39)	6.62
WOLF Stockholm	0.40 (0.12, 1.34)	7.33
Whitehall II	1.10 (0.58, 2.07)	17.25
Random effects overall estimate (I^2 = 26.0%, p = 0.2)	0.96 (0.67, 1.38)	100.00
Fixed effect overall estimate	1.06 (0.80, 1.40)	
.		
Active job		
DWECS	0.89 (0.21, 3.73)	4.04
FPS	0.59 (0.16, 2.21)	4.71
Gazel	0.63 (0.34, 1.18)	21.43
HeSSup	1.04 (0.21, 5.18)	3.25
IPAW	0.91 (0.18, 4.51)	3.23
POLS	1.12 (0.30, 4.19)	4.78
PUMA	1.27 (0.21, 7.60)	2.59
Still Working	0.89 (0.51, 1.56)	27.10
WOLF Norrland	0.21 (0.05, 0.94)	3.65
WOLF Stockholm	1.13 (0.44, 2.95)	9.08
Whitehall II	0.71 (0.35, 1.46)	16.14
Random effects overall estimate (I^2 = 0.0%, p = 0.9)	0.78 (0.58, 1.04)	100.00
Fixed effect overall estimate	0.78 (0.58, 1.04)	
.		
High strain		
COPSOQ-I	0.82 (0.07, 9.02)	1.69
DWECS	1.03 (0.25, 4.33)	4.73
FPS	2.09 (0.75, 5.86)	9.18
Gazel	0.97 (0.44, 2.16)	15.27
HeSSup	1.97 (0.39, 9.91)	3.73
IPAW	1.82 (0.37, 9.06)	3.78
POLS	3.68 (1.09, 12.42)	6.57
PUMA	1.66 (0.28, 9.97)	3.03
Still Working	0.97 (0.51, 1.83)	24.13
WOLF Norrland	0.53 (0.12, 2.39)	4.24
WOLF Stockholm	0.86 (0.26, 2.88)	6.65
Whitehall II	1.20 (0.56, 2.56)	17.00
Random effects overall estimate (I^2 = 0.0%, p = 0.8)	1.22 (0.89, 1.66)	100.00
Fixed effect overall estimate	1.22 (0.89, 1.66)	

NOTE: Weights are from random effects analysis

.0451   1   22.1
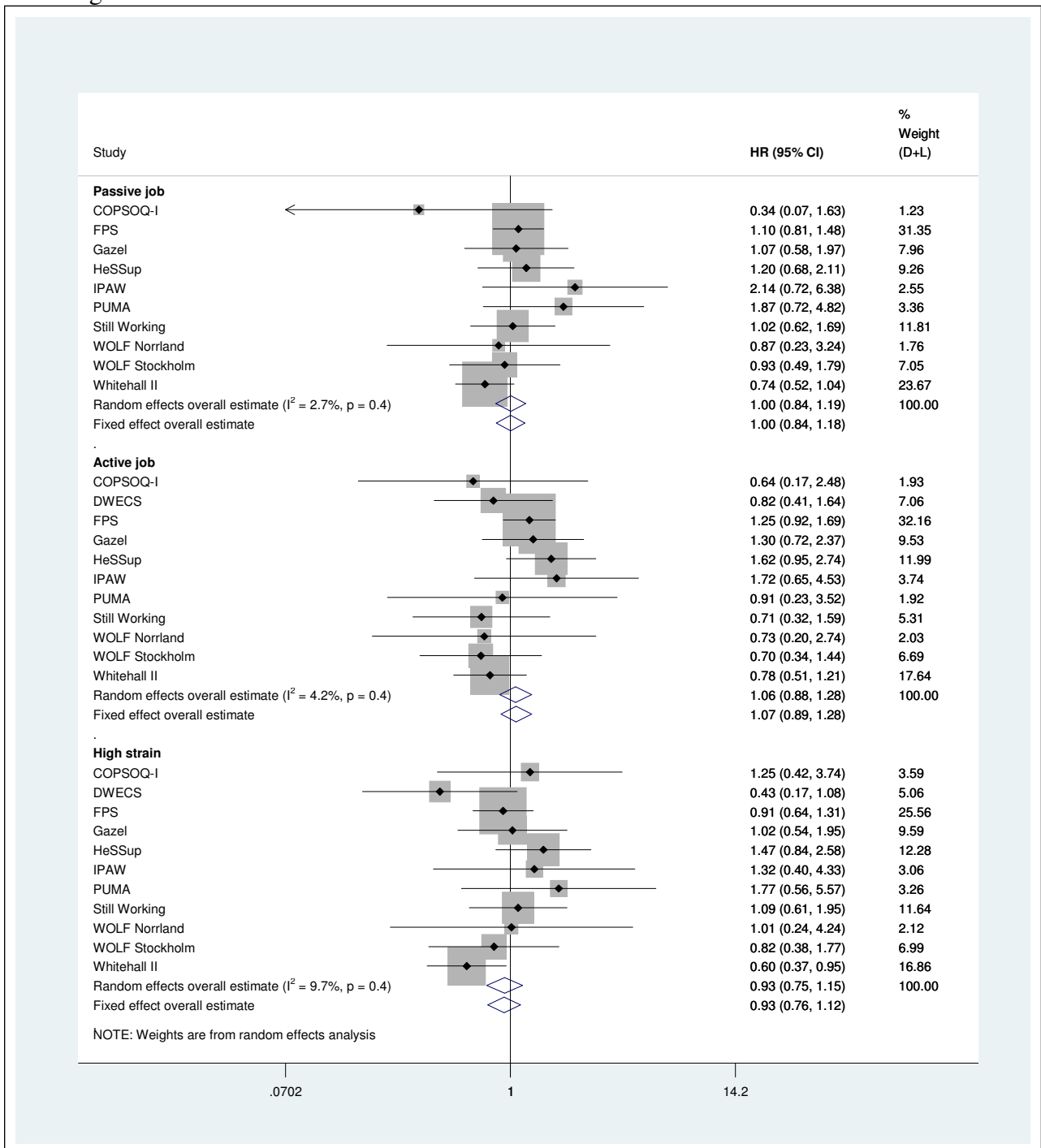
HR: hazard ratio, D+L: Der Simonian and Laird

Figure S7B. Multivariable-adjusted associations of job strain quadrants with lung cancer risk

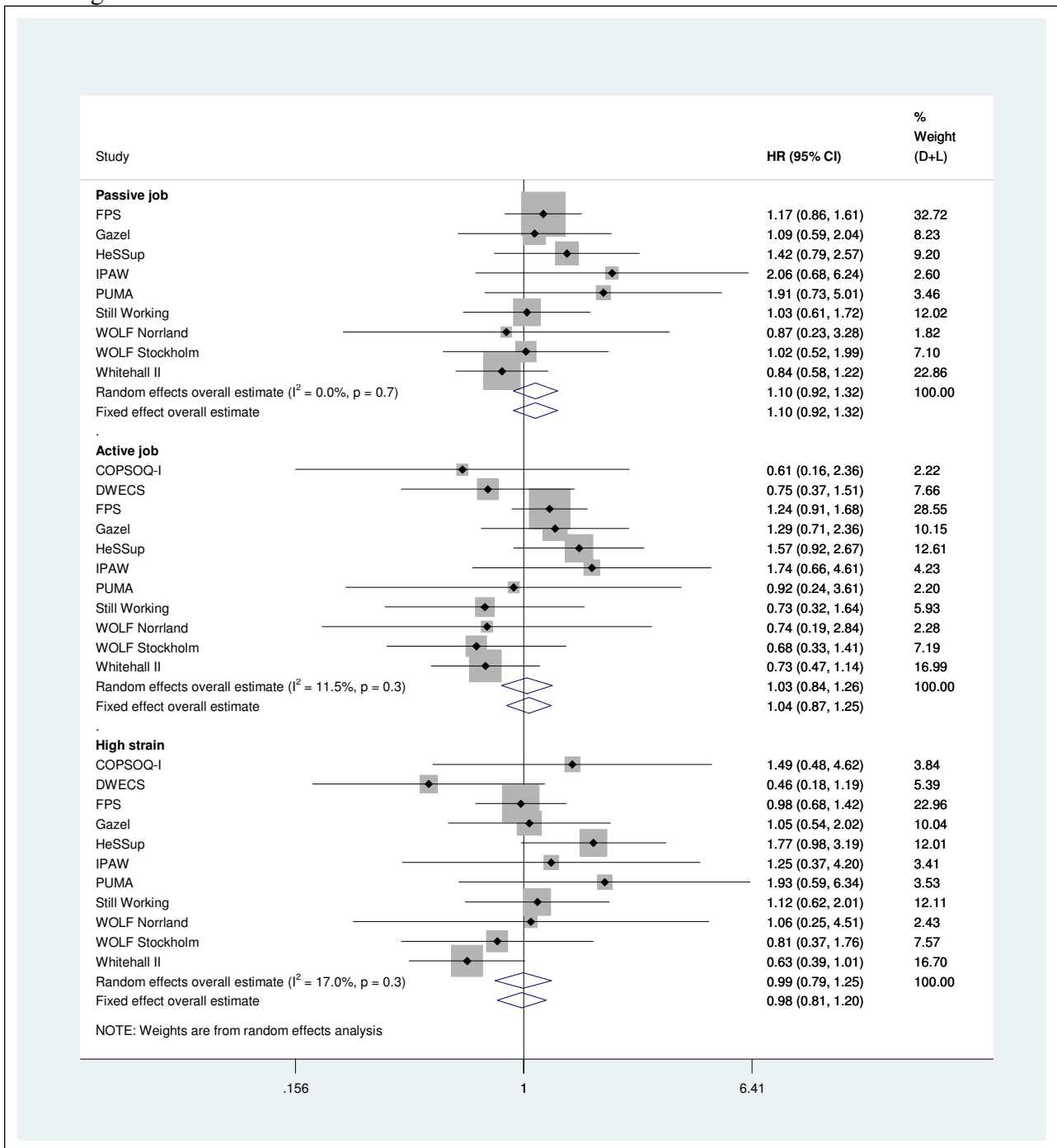| Study	HR (95% CI)	% Weight (D+L)
Passive job		
COPSOQ-I	1.26 (0.20, 7.82)	4.26
DWECS	1.45 (0.40, 5.21)	7.50
FPS	0.96 (0.34, 2.67)	10.12
Gazel	0.30 (0.11, 0.80)	10.78
HeSSup	0.27 (0.03, 2.66)	2.90
IPAW	0.73 (0.07, 7.56)	2.77
POLS	2.40 (0.72, 8.03)	8.14
PUMA	0.52 (0.05, 5.51)	2.72
Still Working	1.47 (0.90, 2.40)	19.98
WOLF Norrland	0.39 (0.10, 1.42)	7.30
WOLF Stockholm	0.37 (0.11, 1.27)	7.91
Whitehall II	0.97 (0.49, 1.93)	15.60
Random effects overall estimate (I^2 = 34.1%, p = 0.1)	0.85 (0.56, 1.28)	100.00
Fixed effect overall estimate	0.96 (0.72, 1.29)	
.		
Active job		
DWECS	0.70 (0.16, 2.99)	4.03
FPS	0.66 (0.17, 2.51)	4.81
Gazel	0.71 (0.38, 1.34)	21.49
HeSSup	1.04 (0.21, 5.20)	3.31
IPAW	0.77 (0.15, 3.86)	3.30
POLS	0.94 (0.24, 3.64)	4.69
PUMA	1.44 (0.21, 9.65)	2.36
Still Working	0.93 (0.54, 1.63)	27.54
WOLF Norrland	0.25 (0.05, 1.19)	3.54
WOLF Stockholm	1.15 (0.43, 3.07)	8.85
Whitehall II	0.76 (0.37, 1.58)	16.06
Random effects overall estimate (I^2 = 0.0%, p = 0.9)	0.81 (0.61, 1.09)	100.00
Fixed effect overall estimate	0.81 (0.61, 1.09)	
.		
High strain		
COPSOQ-I	0.51 (0.05, 5.67)	1.78
DWECS	0.72 (0.16, 3.15)	4.73
FPS	1.82 (0.62, 5.34)	8.92
Gazel	0.67 (0.29, 1.51)	15.32
HeSSup	1.25 (0.24, 6.44)	3.85
IPAW	1.83 (0.33, 10.07)	3.56
POLS	3.73 (1.02, 13.66)	6.14
PUMA	1.54 (0.21, 11.16)	2.64
Still Working	0.95 (0.50, 1.81)	24.56
WOLF Norrland	0.57 (0.12, 2.66)	4.37
WOLF Stockholm	0.79 (0.23, 2.70)	6.92
Whitehall II	1.09 (0.50, 2.37)	17.21
Random effects overall estimate (I^2 = 0.0%, p = 0.7)	1.05 (0.76, 1.45)	100.00
Fixed effect overall estimate	1.05 (0.76, 1.45)	

NOTE: Weights are from random effects analysis

.028   1   35.8

HR: hazard ratio, D+L: Der Simonian and Laird

Figure S8A. Age and sex-adjusted associations of job strain quadrants with breast cancer risk, including all studies
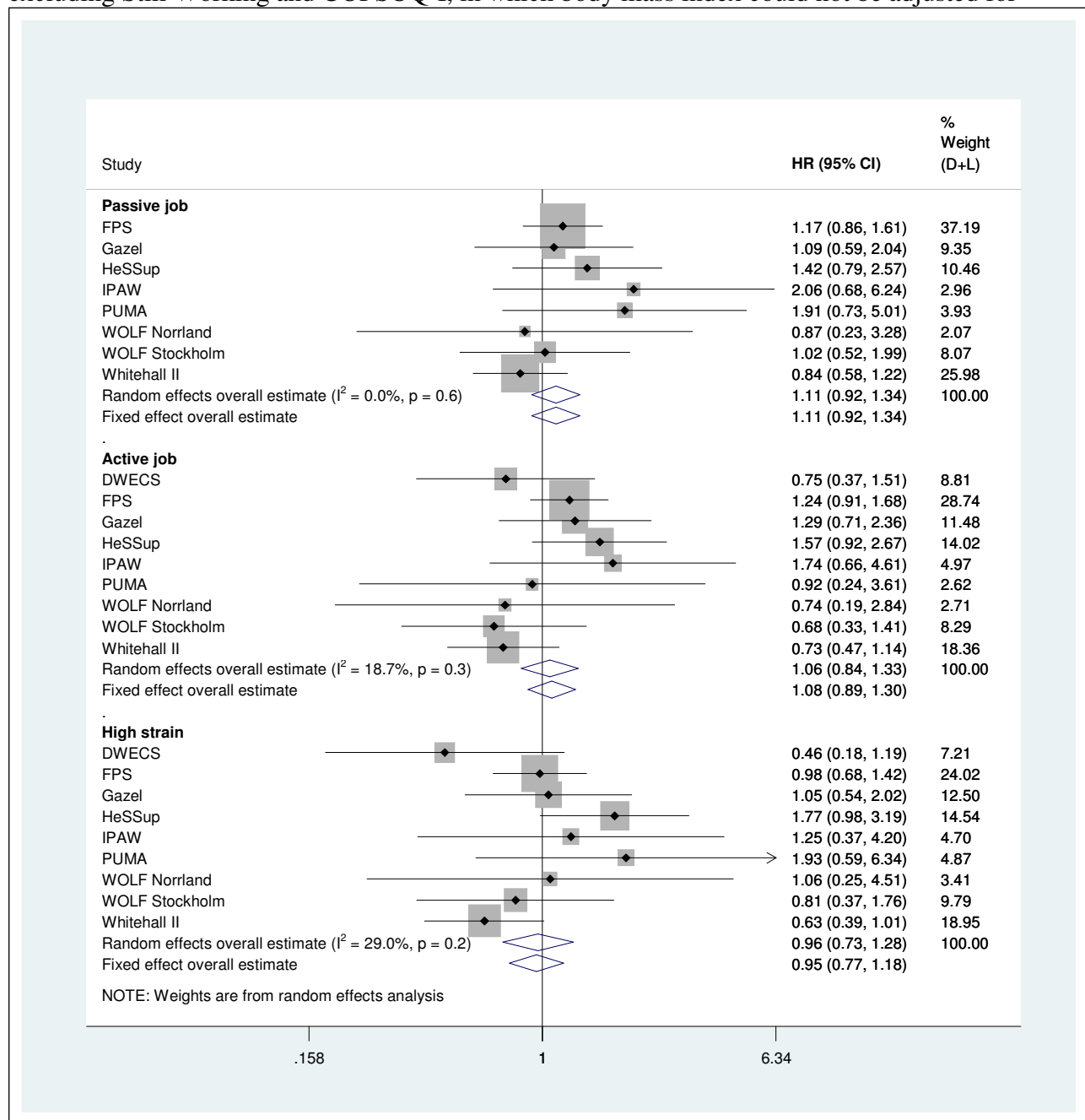

Study	HR (95% CI)	% Weight (D+L)
Passive job		
COPSOQ-I	0.34 (0.07, 1.63)	1.23
FPS	1.10 (0.81, 1.48)	31.35
Gazel	1.07 (0.58, 1.97)	7.96
HeSSup	1.20 (0.68, 2.11)	9.26
IPAW	2.14 (0.72, 6.38)	2.55
PUMA	1.87 (0.72, 4.82)	3.36
Still Working	1.02 (0.62, 1.69)	11.81
WOLF Norrland	0.87 (0.23, 3.24)	1.76
WOLF Stockholm	0.93 (0.49, 1.79)	7.05
Whitehall II	0.74 (0.52, 1.04)	23.67
Random effects overall estimate (I^2 = 2.7%, p = 0.4)	1.00 (0.84, 1.19)	100.00
Fixed effect overall estimate	1.00 (0.84, 1.18)	
.		
Active job		
COPSOQ-I	0.64 (0.17, 2.48)	1.93
DWECS	0.82 (0.41, 1.64)	7.06
FPS	1.25 (0.92, 1.69)	32.16
Gazel	1.30 (0.72, 2.37)	9.53
HeSSup	1.62 (0.95, 2.74)	11.99
IPAW	1.72 (0.65, 4.53)	3.74
PUMA	0.91 (0.23, 3.52)	1.92
Still Working	0.71 (0.32, 1.59)	5.31
WOLF Norrland	0.73 (0.20, 2.74)	2.03
WOLF Stockholm	0.70 (0.34, 1.44)	6.69
Whitehall II	0.78 (0.51, 1.21)	17.64
Random effects overall estimate (I^2 = 4.2%, p = 0.4)	1.06 (0.88, 1.28)	100.00
Fixed effect overall estimate	1.07 (0.89, 1.28)	
.		
High strain		
COPSOQ-I	1.25 (0.42, 3.74)	3.59
DWECS	0.43 (0.17, 1.08)	5.06
FPS	0.91 (0.64, 1.31)	25.56
Gazel	1.02 (0.54, 1.95)	9.59
HeSSup	1.47 (0.84, 2.58)	12.28
IPAW	1.32 (0.40, 4.33)	3.06
PUMA	1.77 (0.56, 5.57)	3.26
Still Working	1.09 (0.61, 1.95)	11.64
WOLF Norrland	1.01 (0.24, 4.24)	2.12
WOLF Stockholm	0.82 (0.38, 1.77)	6.99
Whitehall II	0.60 (0.37, 0.95)	16.86
Random effects overall estimate (I^2 = 9.7%, p = 0.4)	0.93 (0.75, 1.15)	100.00
Fixed effect overall estimate	0.93 (0.76, 1.12)	

NOTE: Weights are from random effects analysis

.0702   1   14.2

HR: hazard ratio, D+L: Der Simonian and Laird

Figure S8B. Multivariable-adjusted associations of job strain quadrants with breast cancer risk, including all studies

HR: hazard ratio, D+L: Der Simonian and Laird

Figure S8C. Multivariable-adjusted associations of job strain quadrants with breast cancer risk, excluding Still Working and COPSOQ-I, in which body mass index could not be adjusted for
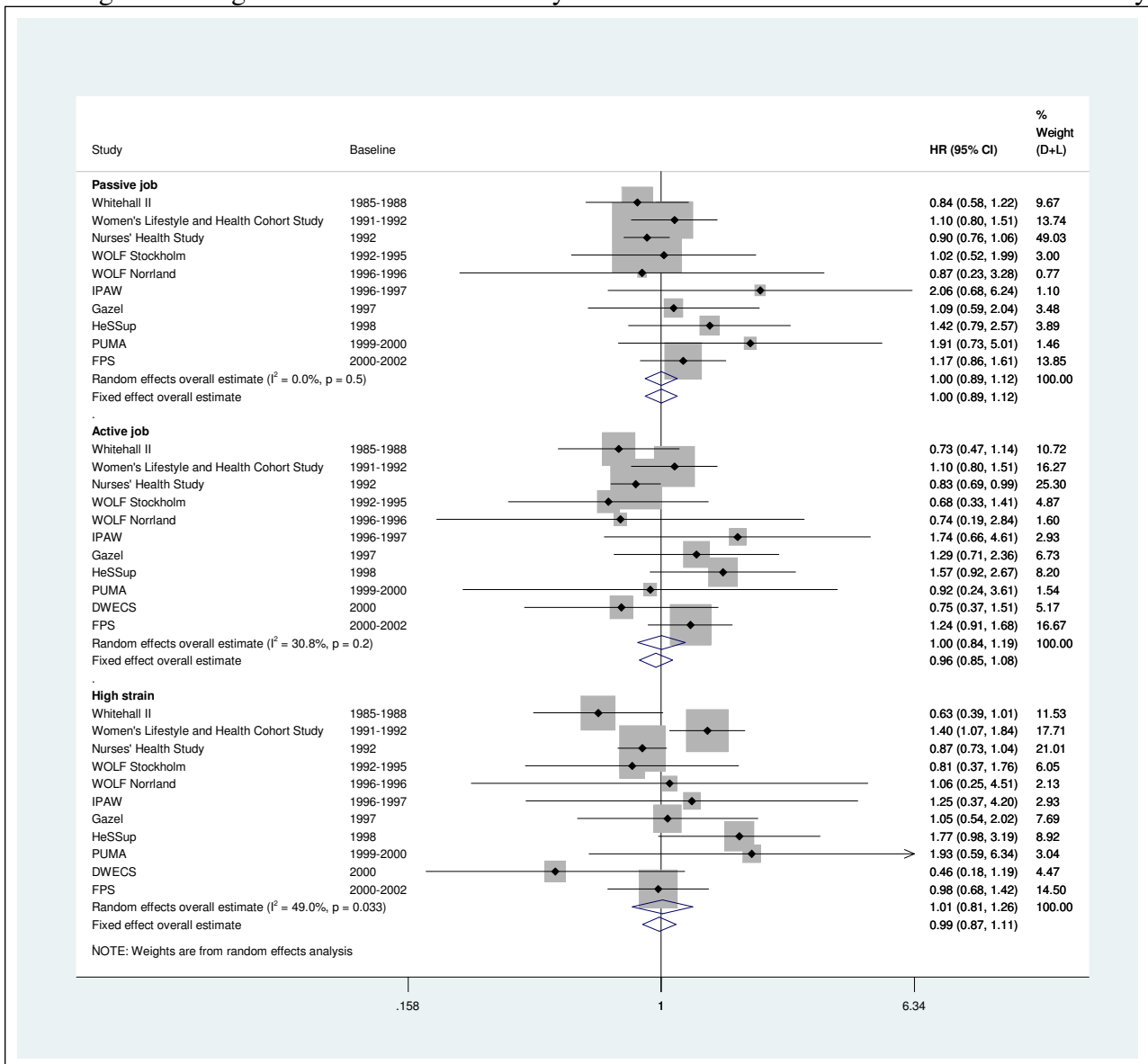
Study	HR (95% CI)	% Weight (D+L)
Passive job		
FPS	1.17 (0.86, 1.61)	37.19
Gazel	1.09 (0.59, 2.04)	9.35
HeSSup	1.42 (0.79, 2.57)	10.46
IPAW	2.06 (0.68, 6.24)	2.96
PUMA	1.91 (0.73, 5.01)	3.93
WOLF Norrland	0.87 (0.23, 3.28)	2.07
WOLF Stockholm	1.02 (0.52, 1.99)	8.07
Whitehall II	0.84 (0.58, 1.22)	25.98
Random effects overall estimate (I^2 = 0.0%, p = 0.6)	1.11 (0.92, 1.34)	100.00
Fixed effect overall estimate	1.11 (0.92, 1.34)	
.		
Active job		
DWECS	0.75 (0.37, 1.51)	8.81
FPS	1.24 (0.91, 1.68)	28.74
Gazel	1.29 (0.71, 2.36)	11.48
HeSSup	1.57 (0.92, 2.67)	14.02
IPAW	1.74 (0.66, 4.61)	4.97
PUMA	0.92 (0.24, 3.61)	2.62
WOLF Norrland	0.74 (0.19, 2.84)	2.71
WOLF Stockholm	0.68 (0.33, 1.41)	8.29
Whitehall II	0.73 (0.47, 1.14)	18.36
Random effects overall estimate (I^2 = 18.7%, p = 0.3)	1.06 (0.84, 1.33)	100.00
Fixed effect overall estimate	1.08 (0.89, 1.30)	
.		
High strain		
DWECS	0.46 (0.18, 1.19)	7.21
FPS	0.98 (0.68, 1.42)	24.02
Gazel	1.05 (0.54, 2.02)	12.50
HeSSup	1.77 (0.98, 3.19)	14.54
IPAW	1.25 (0.37, 4.20)	4.70
PUMA	1.93 (0.59, 6.34)	4.87
WOLF Norrland	1.06 (0.25, 4.51)	3.41
WOLF Stockholm	0.81 (0.37, 1.76)	9.79
Whitehall II	0.63 (0.39, 1.01)	18.95
Random effects overall estimate (I^2 = 29.0%, p = 0.2)	0.96 (0.73, 1.28)	100.00
Fixed effect overall estimate	0.95 (0.77, 1.18)	

NOTE: Weights are from random effects analysis

.158   1   6.34

HR: hazard ratio, D+L: Der Simonian and Laird

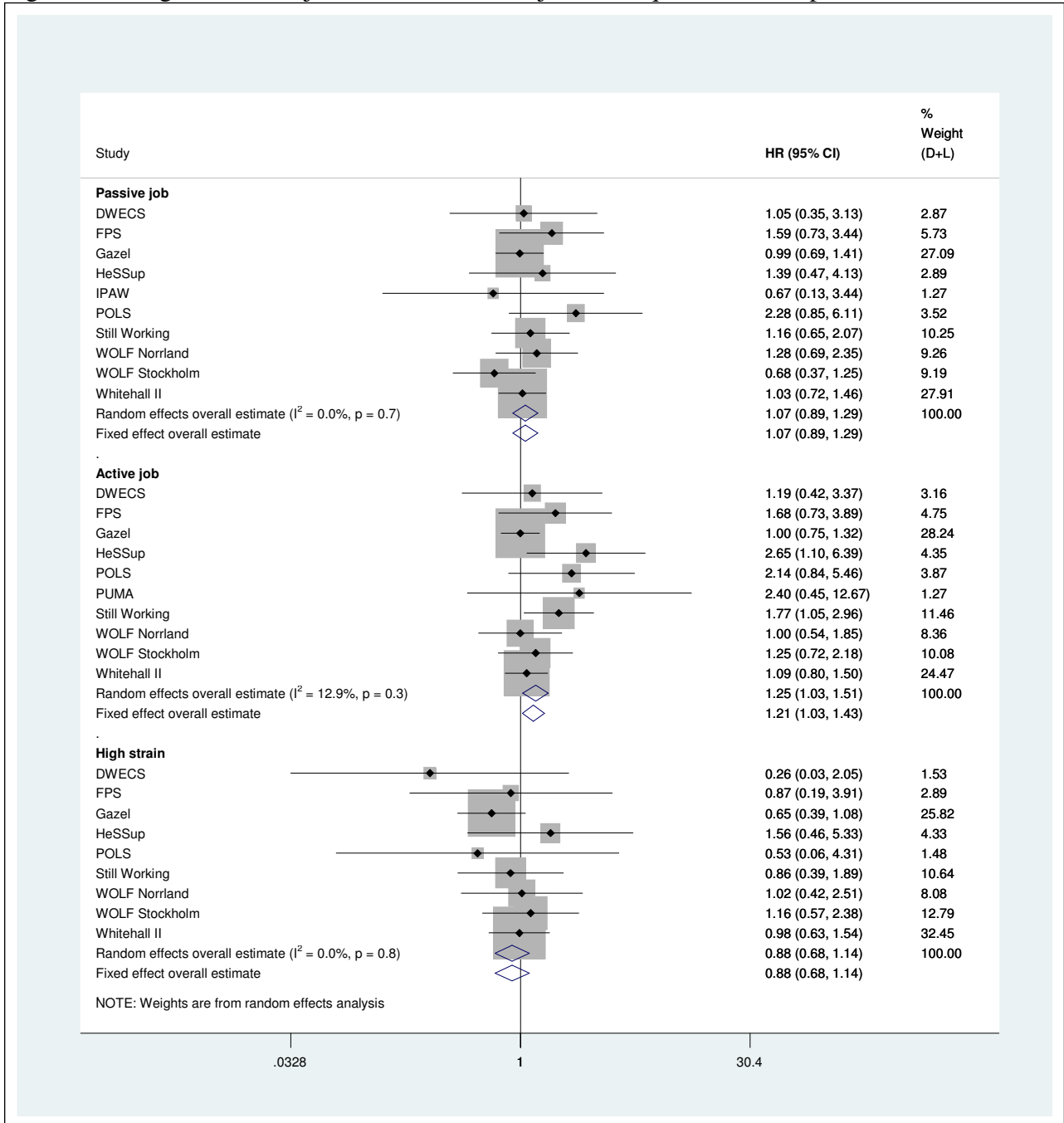**Previous studies of job strain and incident breast cancer**

Figure S8D shows the associations of work-related stress and breast cancer risk from our analysis and previously published findings from three large studies. Two previous prospective studies of job strain and breast cancer risk were identified from a systematic review by Antonova and colleagues [1]. Multivariable-adjusted analyses using data from large prospective cohort studies carried out in the US and Sweden had inconsistent findings. In the Nurses' Health Study (n= 37 562, n incident breast cancer=1030), job strain was not associated with breast cancer risk [2]. In the Women's Lifestyle and Health Cohort Study (n=20 042, n incident breast cancer=468), however, high job strain was associated with a slight increase in breast cancer risk [3]. Breast cancer was ascertained from registry data in Women's Lifestyle and Health Cohort Study [3] and from registry data and medical records review in Nurses' Health Study [2]. In the Women's Lifestyle and Health Cohort Study [3], incident breast cancer cases diagnosed during the first year of follow-up were excluded but in Nurses' Health Study analyses included all incident breast cancer cases in the analyses. Combining the findings of these studies and ours did not markedly change our overall association estimates.

Figure S8D. Multivariable-adjusted associations of job strain quadrants with breast cancer risk, including the findings from the Women's Lifestyle and Health Cohort and the Nurses' Health Study

Study	Baseline	HR (95% CI)	% Weight (D+L)
Passive job			
Whitehall II	1985-1988	0.84 (0.58, 1.22)	9.67
Women's Lifestyle and Health Cohort Study	1991-1992	1.10 (0.80, 1.51)	13.74
Nurses' Health Study	1992	0.90 (0.76, 1.06)	49.03
WOLF Stockholm	1992-1995	1.02 (0.52, 1.99)	3.00
WOLF Norrland	1996-1996	0.87 (0.23, 3.28)	0.77
IPAW	1996-1997	2.06 (0.68, 6.24)	1.10
Gazel	1997	1.09 (0.59, 2.04)	3.48
HeSSup	1998	1.42 (0.79, 2.57)	3.89
PUMA	1999-2000	1.91 (0.73, 5.01)	1.46
FPS	2000-2002	1.17 (0.86, 1.61)	13.85
Random effects overall estimate (I^2 = 0.0%, p = 0.5)		1.00 (0.89, 1.12)	100.00
Fixed effect overall estimate		1.00 (0.89, 1.12)	
.			
Active job			
Whitehall II	1985-1988	0.73 (0.47, 1.14)	10.72
Women's Lifestyle and Health Cohort Study	1991-1992	1.10 (0.80, 1.51)	16.27
Nurses' Health Study	1992	0.83 (0.69, 0.99)	25.30
WOLF Stockholm	1992-1995	0.68 (0.33, 1.41)	4.87
WOLF Norrland	1996-1996	0.74 (0.19, 2.84)	1.60
IPAW	1996-1997	1.74 (0.66, 4.61)	2.93
Gazel	1997	1.29 (0.71, 2.36)	6.73
HeSSup	1998	1.57 (0.92, 2.67)	8.20
PUMA	1999-2000	0.92 (0.24, 3.61)	1.54
DWECS	2000	0.75 (0.37, 1.51)	5.17
FPS	2000-2002	1.24 (0.91, 1.68)	16.67
Random effects overall estimate (I^2 = 30.8%, p = 0.2)		1.00 (0.84, 1.19)	100.00
Fixed effect overall estimate		0.96 (0.85, 1.08)	
.			
High strain			
Whitehall II	1985-1988	0.63 (0.39, 1.01)	11.53
Women's Lifestyle and Health Cohort Study	1991-1992	1.40 (1.07, 1.84)	17.71
Nurses' Health Study	1992	0.87 (0.73, 1.04)	21.01
WOLF Stockholm	1992-1995	0.81 (0.37, 1.76)	6.05
WOLF Norrland	1996-1996	1.06 (0.25, 4.51)	2.13
IPAW	1996-1997	1.25 (0.37, 4.20)	2.93
Gazel	1997	1.05 (0.54, 2.02)	7.69
HeSSup	1998	1.77 (0.98, 3.19)	8.92
PUMA	1999-2000	1.93 (0.59, 6.34)	3.04
DWECS	2000	0.46 (0.18, 1.19)	4.47
FPS	2000-2002	0.98 (0.68, 1.42)	14.50
Random effects overall estimate (I^2 = 49.0%, p = 0.033)		1.01 (0.81, 1.26)	100.00
Fixed effect overall estimate		0.99 (0.87, 1.11)	

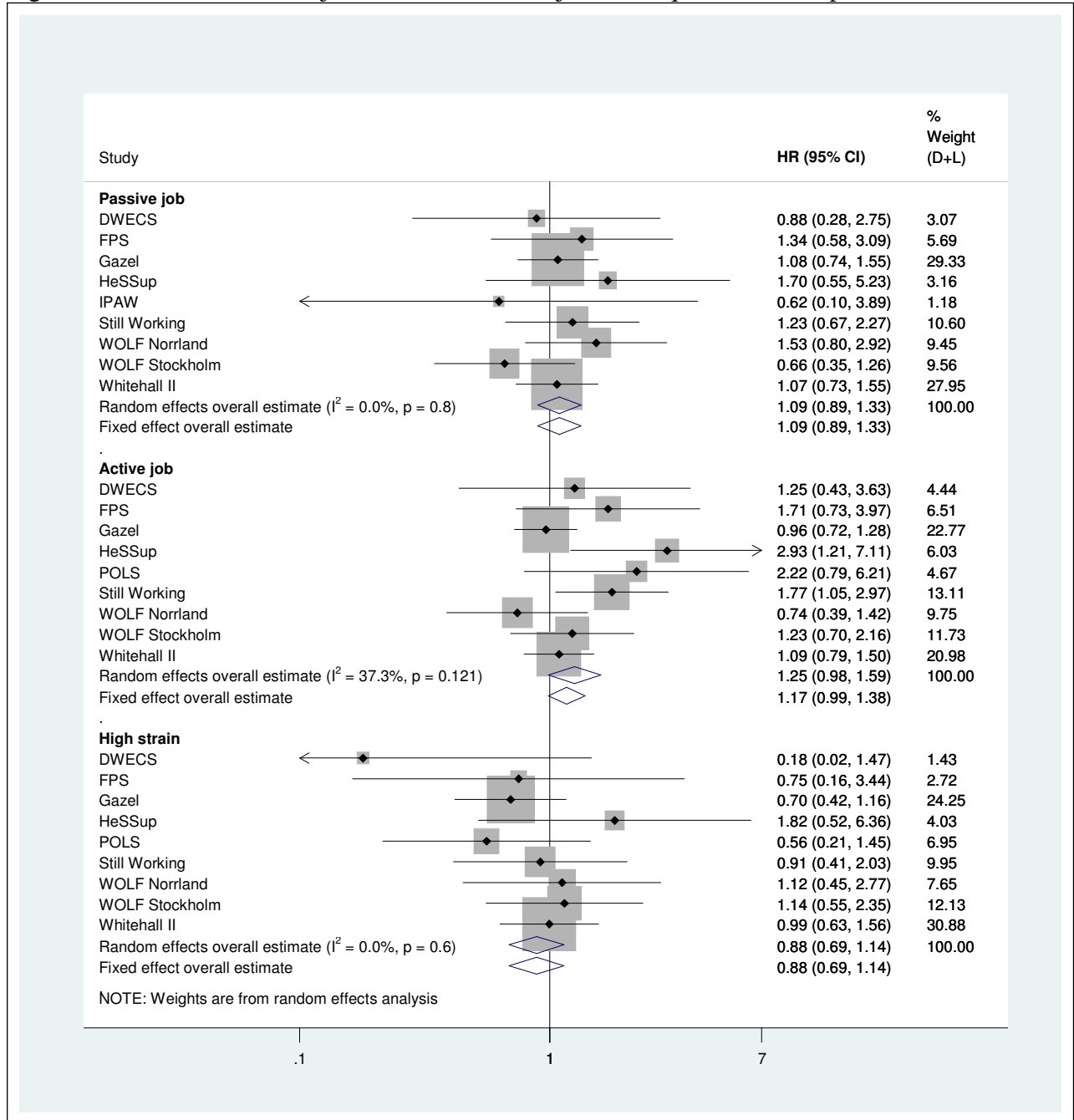NOTE: Weights are from random effects analysis

.158   1   6.34

HR: hazard ratio, D+L: Der Simonian and Laird

Figure S9A. Age and sex-adjusted associations of job strain quadrants with prostate cancer risk

Study	HR (95% CI)	% Weight (D+L)
Passive job		
DWECS	1.05 (0.35, 3.13)	2.87
FPS	1.59 (0.73, 3.44)	5.73
Gazel	0.99 (0.69, 1.41)	27.09
HeSSup	1.39 (0.47, 4.13)	2.89
IPAW	0.67 (0.13, 3.44)	1.27
POLS	2.28 (0.85, 6.11)	3.52
Still Working	1.16 (0.65, 2.07)	10.25
WOLF Norrland	1.28 (0.69, 2.35)	9.26
WOLF Stockholm	0.68 (0.37, 1.25)	9.19
Whitehall II	1.03 (0.72, 1.46)	27.91
Random effects overall estimate (I^2 = 0.0%, p = 0.7)	1.07 (0.89, 1.29)	100.00
Fixed effect overall estimate	1.07 (0.89, 1.29)	
.		
Active job		
DWECS	1.19 (0.42, 3.37)	3.16
FPS	1.68 (0.73, 3.89)	4.75
Gazel	1.00 (0.75, 1.32)	28.24
HeSSup	2.65 (1.10, 6.39)	4.35
POLS	2.14 (0.84, 5.46)	3.87
PUMA	2.40 (0.45, 12.67)	1.27
Still Working	1.77 (1.05, 2.96)	11.46
WOLF Norrland	1.00 (0.54, 1.85)	8.36
WOLF Stockholm	1.25 (0.72, 2.18)	10.08
Whitehall II	1.09 (0.80, 1.50)	24.47
Random effects overall estimate (I^2 = 12.9%, p = 0.3)	1.25 (1.03, 1.51)	100.00
Fixed effect overall estimate	1.21 (1.03, 1.43)	
.		
High strain		
DWECS	0.26 (0.03, 2.05)	1.53
FPS	0.87 (0.19, 3.91)	2.89
Gazel	0.65 (0.39, 1.08)	25.82
HeSSup	1.56 (0.46, 5.33)	4.33
POLS	0.53 (0.06, 4.31)	1.48
Still Working	0.86 (0.39, 1.89)	10.64
WOLF Norrland	1.02 (0.42, 2.51)	8.08
WOLF Stockholm	1.16 (0.57, 2.38)	12.79
Whitehall II	0.98 (0.63, 1.54)	32.45
Random effects overall estimate (I^2 = 0.0%, p = 0.8)	0.88 (0.68, 1.14)	100.00
Fixed effect overall estimate	0.88 (0.68, 1.14)	

NOTE: Weights are from random effects analysis

.0328   1   30.4

HR: hazard ratio, D+L: Der Simonian and Laird

Figure S9B. Multivariable-adjusted associations of job strain quadrants with prostate cancer risk

Study	HR (95% CI)	% Weight (D+L)
Passive job		
DWECS	0.88 (0.28, 2.75)	3.07
FPS	1.34 (0.58, 3.09)	5.69
Gazel	1.08 (0.74, 1.55)	29.33
HeSSup	1.70 (0.55, 5.23)	3.16
IPAW	0.62 (0.10, 3.89)	1.18
Still Working	1.23 (0.67, 2.27)	10.60
WOLF Norrland	1.53 (0.80, 2.92)	9.45
WOLF Stockholm	0.66 (0.35, 1.26)	9.56
Whitehall II	1.07 (0.73, 1.55)	27.95
Random effects overall estimate (I^2 = 0.0%, p = 0.8)	1.09 (0.89, 1.33)	100.00
Fixed effect overall estimate	1.09 (0.89, 1.33)	
.		
Active job		
DWECS	1.25 (0.43, 3.63)	4.44
FPS	1.71 (0.73, 3.97)	6.51
Gazel	0.96 (0.72, 1.28)	22.77
HeSSup	2.93 (1.21, 7.11)	6.03
POLS	2.22 (0.79, 6.21)	4.67
Still Working	1.77 (1.05, 2.97)	13.11
WOLF Norrland	0.74 (0.39, 1.42)	9.75
WOLF Stockholm	1.23 (0.70, 2.16)	11.73
Whitehall II	1.09 (0.79, 1.50)	20.98
Random effects overall estimate (I^2 = 37.3%, p = 0.121)	1.25 (0.98, 1.59)	100.00
Fixed effect overall estimate	1.17 (0.99, 1.38)	
.		
High strain		
DWECS	0.18 (0.02, 1.47)	1.43
FPS	0.75 (0.16, 3.44)	2.72
Gazel	0.70 (0.42, 1.16)	24.25
HeSSup	1.82 (0.52, 6.36)	4.03
POLS	0.56 (0.21, 1.45)	6.95
Still Working	0.91 (0.41, 2.03)	9.95
WOLF Norrland	1.12 (0.45, 2.77)	7.65
WOLF Stockholm	1.14 (0.55, 2.35)	12.13
Whitehall II	0.99 (0.63, 1.56)	30.88
Random effects overall estimate (I^2 = 0.0%, p = 0.6)	0.88 (0.69, 1.14)	100.00
Fixed effect overall estimate	0.88 (0.69, 1.14)	

NOTE: Weights are from random effects analysis

HR: hazard ratio, D+L: Der Simonian and Laird