

**Table 4. MR Estimates for the Effect of Anthropometric Measures on MS Severity**

Exposure	No. of SNPs	IVW			MR-Egger		Weighted median		pleiotropy assessment					MVMR-IVW		
		$\beta$ (95%CI)	pval	FDR	$\beta$ (95%CI)	pval	$\beta$ (95%CI)	pval	Q	Q pval	$I^2$ (%)	MR-Egger intercept	MR-Egger intercept pval	No. of SNPs	OR (95%CI)	pval
Whole body fat mass	168	0.35 (0.13,0.57)	<b>1.74E-03</b>	<b>6.09E-03</b>	0.8 (-0.34,1.94)	1.72E-01	0.4 (-0.22,1.02)	2.03E-01	51.305	1	0	-0.0095	0.414	141	0.25 (0.01,0.5)	<b>0.04</b>
Leg fat mass (right)	152	0.48 (0.18,0.77)	<b>1.55E-03</b>	<b>6.09E-03</b>	0.99 (-0.44,2.43)	1.76E-01	0.43 (-0.38,1.24)	2.95E-01	51.714	1	0	-0.0092	0.451	124	0.28 (-0.004,0.57)	<b>0.05</b>
Leg fat mass (left)	155	0.47 (0.17,0.76)	<b>2.10E-03</b>	<b>6.31E-03</b>	0.89 (-0.55,2.33)	2.28E-01	0.47 (-0.35,1.3)	2.60E-01	53.21	1	0	-0.0074	0.539	147	0.32 (0.02,0.62)	<b>0.04</b>
Arm fat mass (left)	165	0.37 (0.15,0.59)	<b>7.86E-04</b>	<b>6.09E-03</b>	0.74 (-0.36,1.83)	1.89E-01	0.38 (-0.26,1.02)	2.43E-01	48.231	1	0	-0.0079	0.483	165	0.26 (0.04,0.48)	<b>0.02</b>
Arm fat mass (right)	162	0.3 (0.08,0.52)	<b>7.18E-03</b>	<b>1.89E-02</b>	0.8 (-0.31,1.92)	1.58E-01	0.35 (-0.28,0.99)	2.73E-01	47.483	1	0	-0.0109	0.342	162	0.2 (-0.03,0.42)	0.08
Trunk fat mass	176	0.35 (0.14,0.56)	<b>1.24E-03</b>	<b>6.09E-03</b>	0.73 (-0.37,1.84)	1.95E-01	0.42 (-0.16,1)	1.55E-01	55.081	1	0	-0.0084	0.469	93	0.31 (0.06,0.56)	<b>0.01</b>
BMI	168	0.36 (0.14,0.57)	<b>1.04E-03</b>	<b>6.09E-03</b>	0.92 (-0.11,1.96)	8.23E-02	0.34 (-0.3,0.97)	2.95E-01	50.741	1	0	-0.0127	0.25	168	0.28 (0.06,0.51)	<b>0.01</b>
Weight	168	0.36 (0.14,0.57)	<b>1.04E-03</b>	<b>6.09E-03</b>	0.92 (-0.11,1.96)	8.23E-02	0.34 (-0.3,0.98)	3.01E-01	50.741	1	0	-0.0127	0.25	127	0.26 (0.02,0.49)	<b>0.03</b>
Whole body fat percentage	156	0.18 (-0.11,0.48)	2.24E-01	4.71E-01	0.49 (-1.41,2.38)	6.16E-01	0.42 (-0.35,1.19)	2.88E-01	45.049	1	0	-0.0047	0.743			
Arm fat percentage (left)	151	0.15 (-0.15,0.46)	3.33E-01	5.83E-01	1.04 (-0.68,2.76)	2.39E-01	0.26 (-0.59,1.12)	5.47E-01	45.712	1	0	-0.0141	0.288			
Arm fat percentage (right)	147	0.08 (-0.22,0.38)	6.20E-01	7.73E-01	0.92 (-0.84,2.69)	3.08E-01	0.13 (-0.72,0.98)	7.65E-01	41.891	1	0	-0.0135	0.325			
Leg fat percentage (right)	149	0.1 (-0.26,0.46)	5.79E-01	7.73E-01	0.58 (-1.98,3.14)	6.56E-01	0.25 (-0.77,1.28)	6.29E-01	37.58	1	0	-0.006	0.702			
Leg fat percentage (left)	144	0.02 (-0.34,0.39)	8.98E-01	9.03E-01	0.28 (-2.29,2.85)	8.29E-01	0.21 (-0.85,1.27)	7.02E-01	35.909	1	0	-0.0032	0.836			
Trunk fat percentage	148	0.27 (0.01,0.52)	<b>4.36E-02</b>	1.02E-01	0.22 (-1.37,1.82)	7.83E-01	0.52 (-0.14,1.17)	1.21E-01	45.232	1	0	0.0008	0.958			
Whole body non-fat mass	242	-0.11 (-0.39,0.17)	4.44E-01	6.66E-01	0.09 (-1.07,1.25)	8.78E-01	-0.37 (-1.027)	2.55E-01	94.515	1	0	-0.0033	0.717			
Arm non-fat mass (right)	218	-0.07 (-0.37,0.22)	6.26E-01	7.73E-01	0.3 (-1.06,1.65)	6.68E-01	-0.26 (-0.95,0.43)	4.62E-01	79.801	1	0	-0.0057	0.565			
Arm non-fat mass (left)	228	-0.02 (-0.31,0.28)	9.03E-01	9.03E-01	0.25 (-1.06,1.56)	7.10E-01	-0.1 (-0.81,0.62)	7.91E-01	87.229	1	0	-0.0042	0.668			
Leg non-fat mass (left)	217	0.06 (-0.24,0.36)	6.90E-01	8.05E-01	0.59 (-0.66,1.85)	3.54E-01	-0.05 (-0.74,0.63)	8.77E-01	85.704	1	0	-0.0087	0.369			
Leg non-fat mass (right)	227	0.02 (-0.27,0.31)	8.87E-01	9.03E-01	0.28 (-0.96,1.52)	6.59E-01	-0.12 (-0.82,0.57)	7.28E-01	90.03	1	0	-0.0042	0.661			
Trunk non-fat mass	243	-0.13 (-0.41,0.15)	3.61E-01	5.83E-01	-0.13 (-1.29,1.03)	8.26E-01	-0.36 (-1.01,0.29)	2.80E-01	100.419	1	0	0	0.999			
Height	401	-0.08 (-0.26,0.09)	3.54E-01	5.83E-01	-0.39 (-0.98,0.21)	2.04E-01	-0.11 (-0.5,0.27)	5.63E-01	196.563	1	0	0.0069	0.272			

CI: confidence interval; OR: odds ratio; BMI: body mass index; IVW: inverse variance-weighted (multiplicative random effects); No. of SNPs: number of single-nucleotide polymorphisms that included in the analysis;  $\beta$ : beta coefficient; 95% CI: confidence interval; FDR: false discovery rate; Q: cochrans Q test; Q pval: Cochran's Q test p value;  $I^2$  (%): expresses the level of heterogeneity as a percentage; MR-Egger intercept pval: MR-Egger intercept p value; MVMR: multivariable Mendelian randomisation. Bold values indicate a significance level is set at IVW FDR $\leq$ 0.05.