

Table S8 Number of genes with significant coefficient changes after adjusting for estimated cell proportions

Tissue	Disorder	No. genes with significant coefficient change in the original bulk level TWAS analysis	No. significant genes from original bulk level TWAS analysis	No. significant genes(original TWAS analysis) with significant coefficient change	No. significant genes from adjusted(by estimated cell proportions) bulk level TWAS analysis	No. common significant genes	Proportion of significant genes with significant change
Frotal cortex	Anxiety	27	0	0	0	0	0
Frotal cortex	Bipolar	0	0	0	0	0	0
Frotal cortex	Depression	0	3	0	3	0	0
Frotal cortex	Psychosis	2	0	0	0	0	0
Pancreas	Prediabetes	1	0	0	0	0	0
Pancreas	T1DM	779	57	36	54	53	0.631578947
Pancreas	T2DM	235	88	8	88	87	0.090909091
Pancreas	T2DM_admission	220	135	13	133	131	0.096296296
Pancreas	T2DM_insulin	175	20	0	19	18	0
Subcutaneous adipose	CAD	19	56	1	57	56	0.017857143
Subcutaneous adipose	HTN	269	366	40	377	363	0.109289617
Subcutaneous adipose	Heart_Failure	916	52	18	47	47	0.346153846
Subcutaneous adipose	Stroke	56	0	0	0	0	0
Subcutaneous adipose	T2DM	723	176	45	164	164	0.255681818
Visceral adipose	CAD	334	30	6	28	28	0.2
Visceral adipose	Heart_Failure	849	36	15	24	23	0.416666667
Visceral adipose	HTN	359	277	43	288	274	0.155234657
Visceral adipose	Stroke	191	0	0	0	0	0
Visceral adipose	T2DM	969	118	56	105	104	0.474576271

Note: No. genes with significant coefficient change in the original bulk level TWAS analysis indicates genes with significant coefficient changes, some genes with significant coefficient changes are not associated with the target trait based on the TWAS analysis results, here significant genes indicated those that have a adjusted pvalue(FDR) ≤ 0.05