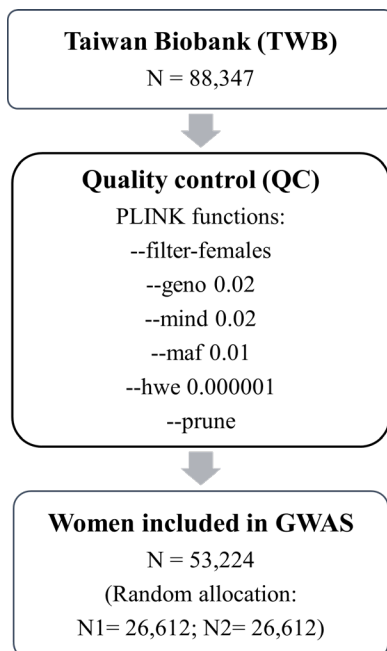


# **Supplementary Information**

<b>PLINK functions</b>	<b>Meaning</b>
--filter-males	filters out males
--geno 0.02	filters out SNPs with genotype missing rate higher than 2%
--mind 0.02	filters out samples with genotype missing rate higher than 2%
--maf 0.01	filters out SNPs with minor allele frequency (MAF)* below 0.01
--hwe 0.0000001	filters out SNPs which have Hardy-Weinberg equilibrium* exact test p-value below 1E-06
--prune	filters out samples with missing phenotypes

**Table S1.** Description of quality control procedures



**Figure S1.** Description of quality control procedures

\*Minor allele frequency (MAF): The frequency at which a less common allele occurs in a population. SNPs with very low MAF are prone to genotyping errors.

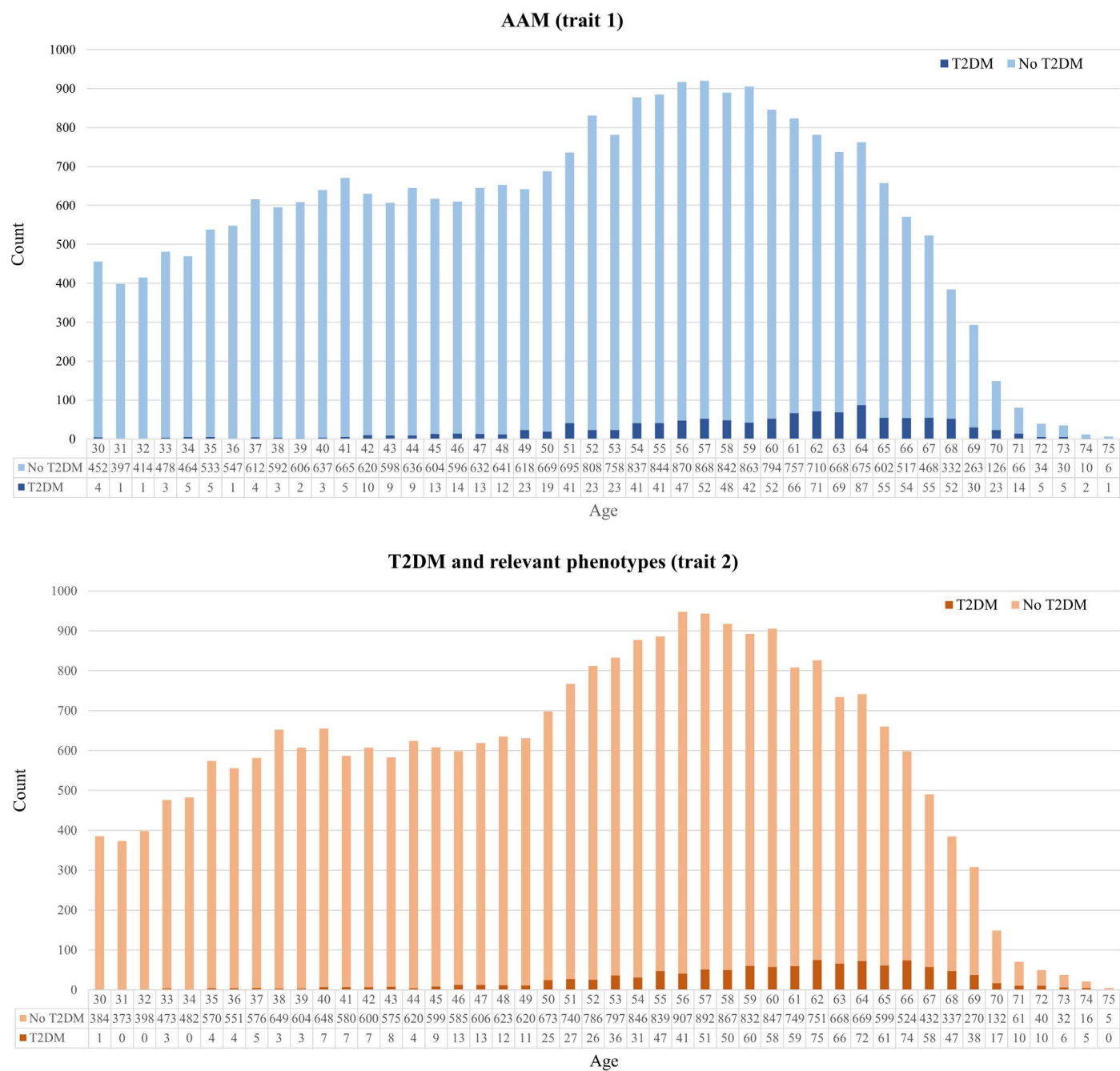
\*Hardy-Weinberg equilibrium (HWE): The frequency of genotypes in a population may be calculated using the formula  $p^2 + q^2 + 2pq = 1$ . SNPs deviating from HWE are prone to genotyping errors.

**Table S2.** General characteristics of participants in 2 datasets

Characteristics		GWAS of AAM (N = 26612)		GWAS of T2DM (N = 26612)	
		N or mean	% or SD	N or mean	% or SD
<b>Education level</b>					
Low		1509	5.67	1572	5.9
Medium		10537	39.59	10686	40.2
High		14566	54.73	14354	53.9
<b>Age</b>					
Year		50.82	10.77	51.00	10.72
Older ( $\geq 65$ )		2750	10.33	2771	10.41
<b>AAM</b>					
Year		13.26	1.47	13.26	1.47
Early ( $\leq 11$ )		2918	10.96	2917	10.96
<b>Diabetic factors</b>					
T2DM	Yes	1158	4.351	1164	4.374
BMI	kg·m <sup>-2</sup>	23.63	3.80	23.62	3.74
BMI $\geq 24.5$	Yes	9055	34.03	9171	34.46
Waistline	cm	80.79	9.75	80.74	9.71
Waistline $\geq 80$	Yes	13572	51.00	13481	50.66
BFR	%	32.10	6.40	32.08	6.37
BFR $\geq 30$	Yes	16508	62.03	16508	62.03
FBG	mg·dl <sup>-1</sup>	94.22	18.43	94.41	18.85
HbA <sub>1c</sub>	%	5.76	0.73	5.77	0.75
SBP	mmHg	117.73	18.09	118.05	18.48
DBP	mmHg	71.16	10.30	71.26	10.44
TG	mg·dl <sup>-1</sup>	105.40	77.35	104.97	73.95
Total cholesterol	mg·dl <sup>-1</sup>	198.93	36.34	198.92	36.14
HDL-C	mg·dl <sup>-1</sup>	58.49	13.37	58.44	13.37
LDL-C	mg·dl <sup>-1</sup>	120.83	31.83	120.89	32.06

Abbreviations: GWAS, genome-wide association study; N, total number; SD, standard deviation; T2DM,

type 2 diabetes mellitus; BMI, body mass index; BFR, body fat rate; FBG, fasting blood glucose; HbA<sub>1c</sub>, glycated hemoglobin A1C; SBP, systolic blood pressure; DBP, diastolic blood pressure; TG, triglyceride; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol.



**Figure S2. Risk of T2DM based on age of participants**



**Table S3.** Top 10 enriched Kyoto Encyclopedia of Genes and Genomes (KEGG) pathways

Pathway	False discovery rate
Insulin signaling pathway	1.02e-12
Glucagon signaling pathway	9.81e-09
Gastric acid secretion	2.5e-07
Phototransduction	4.51e-07
Human cytomegalovirus infection	4.51e-07
Cellular senescence	2.07e-06
RNA degradation	3.76e-06
AMPK signaling pathway	4.30e-06
Circadian entrainment	1.01e-05
Adrenergic signaling in cardiomyocytes	1.43e-05