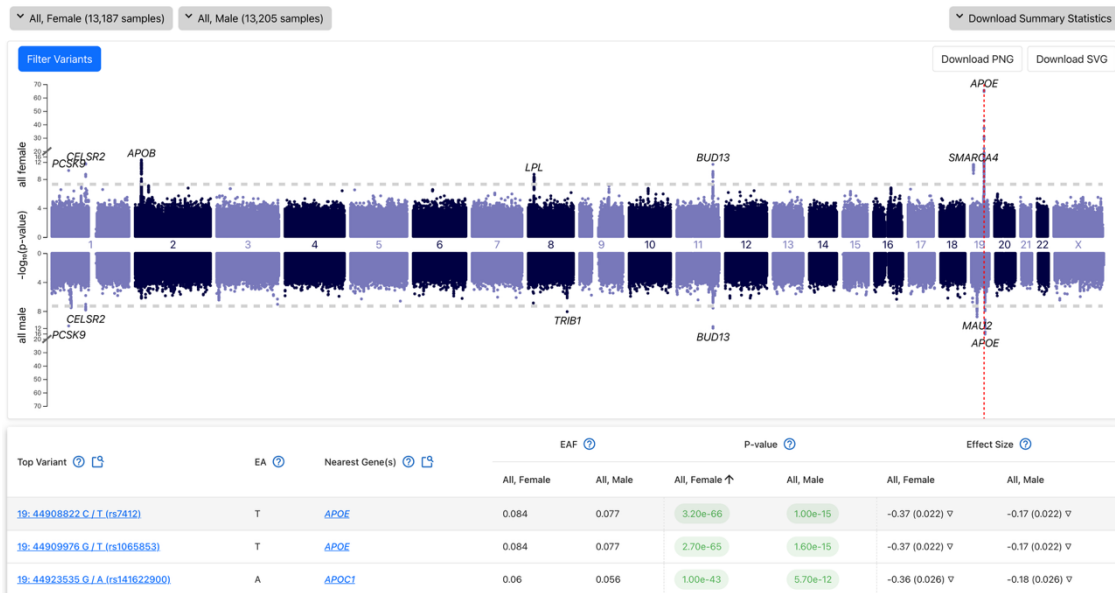
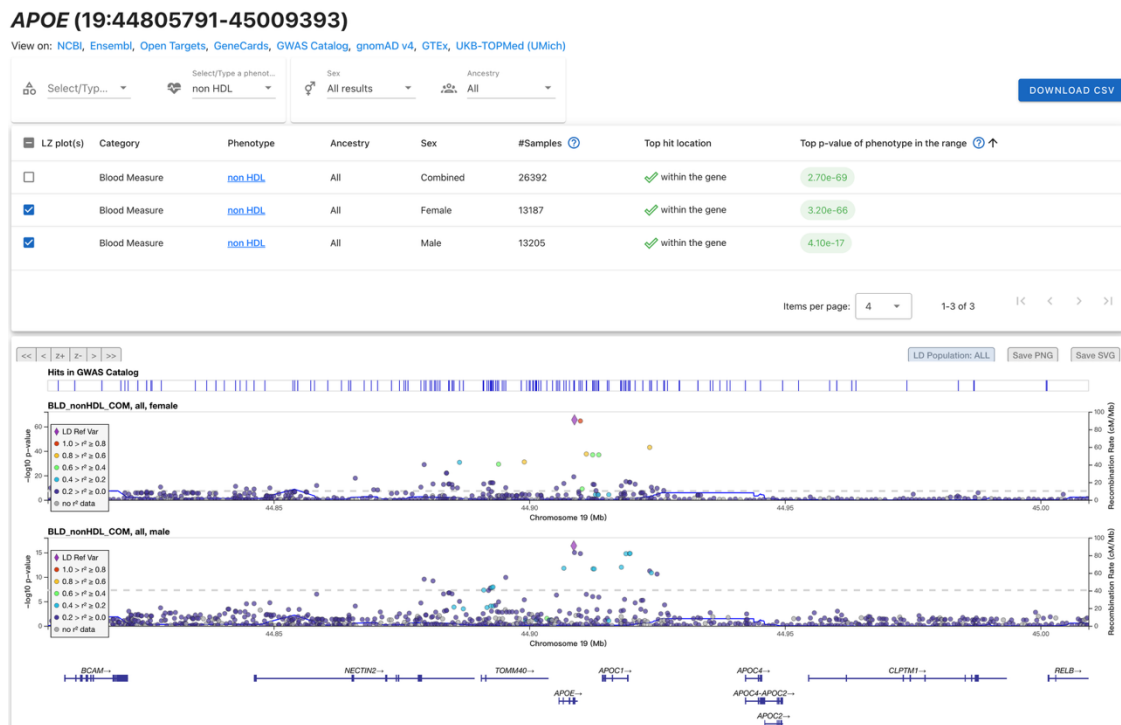


Supplementary Information

a

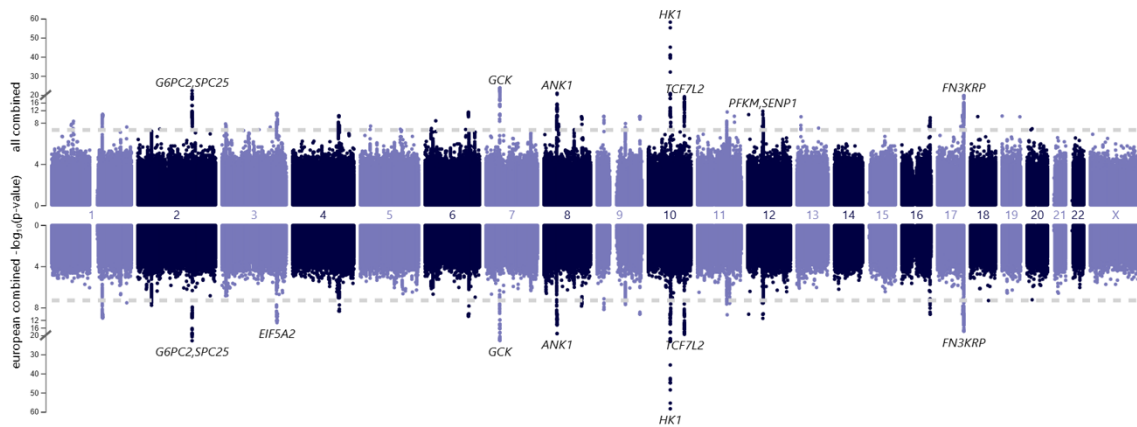


b



Supplementary Figure 1. Screenshots of interactive tables from PheWeb 2 providing detailed insights into GWAS results. (a) The dynamic GWAS table synchronized with the interactive Miami plot (Figure 1b) facilitated in-depth comparison of associations with non-high density lipoprotein (non HDL) cholesterol in blood in female-only and male-only stratifications. Among other information, the table displays side-by-side the effect allele frequencies (EAF), p-values, and effect sizes for

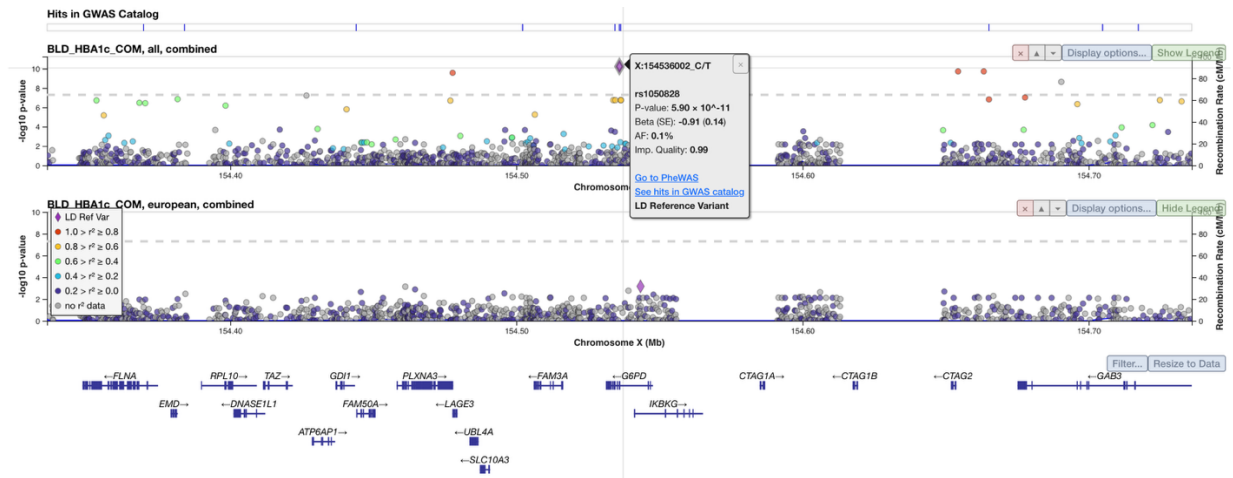
the tested genetic variants for each stratification. The table was sorted by association p-values from the female-only stratification, highlighting *APOE* as the most significant locus (lead variant rs7412 β [SE] = -0.37[0.022]; $p = 3.20 \times 10^{-66}$). The red vertical line indicated the position of the hovered variant (rs7412) in the Miami plot. **(b)** The *APOE* gene table was filtered to display GWAS results for non HDL cholesterol in all genetic ancestries. The second row indicated that the lead variant (rs7412) from the most significant locus identified in panel (a) is located within the *APOE* gene. Results from the female-only stratification are shown in the top LocusZoom plot and male-only results are on the bottom plot. Users can toggle the display of corresponding interactive LocusZoom plots (Figure 1c) using the first column of the table.



Supplementary Figure 2. Miami plot view for hemoglobin A1c GWAS. The upper portion displays GWAS results in all genetic ancestries ($N = 26,325$), whereas the lower portion displays the GWAS results in European-only stratification ($N = 24,300$).

Top Variant	EA	Nearest Gene(s)	EAF		P-value		Effect Size (SE)	
			All, Combined	European, Combined	All, Combined \uparrow	European, Combined	All, Combined	European, Combined
X:154536002 C / T (rs1050828)	T	G6PD	0.001	NA	5.90e-11	NA	-0.91 (0.14)	NA

Supplementary Figure 3. Screenshot of table of hemoglobin A1c GWAS results with side-by-side comparison of rs1050828 in all genetic ancestries and in European-only stratifications.



Supplementary Figure 4. Regional view (LocusZoom) on chromosome X with variant rs1050828 (highlighted) in all genetic ancestries (top) and European-only stratification (bottom), with known variants within the NHGRI-EBI GWAS Catalog presented on the upper track (“Hits in GWAS Catalog”), and nearby genes displayed below.