Table S1. Two Way Analysis of Variance report for the blood parameters included in PCA before body weight normalisation

	Sex-gender	Smoke effect	Sex-gender x smoke
Age (y)	F value: 1.121	F value: 3.538	F value: 1.518
	P value: 0.291	P value: 0.062	P value: 0.220
Weight (Kg)	F value: 134.460	F value: 0.690	F value: 5.813
	P value: < 0.001	P value: 0.407	P value: 0.017
BMI (Kg/m^2)	F value: 30,041	F value: 0.687	F value: 5.012
	P value: < 0.001	P value: 0.408	P value: 0.027
Glycaemia (mg dl^{-1})	F value: 6.604	F value: 3.282	F value: 0.081
	P value: 0.011	P value: 0.072	P value: 0.775
TChol (mg dl^{-1})	F value: 4.413	F value: 1.277	F value: 3.381
	P value: 0.037	P value: 0.260	P value: 0.068
LDL (mg dl^{-1})	F value: 2.245	F value: 4.699	F value: 3.702
	P value: 0.136	P value: 0.032	P value: 0.056
HDL (mg dl^{-1})	F value: 15.784	F value: 0.427	F value: 0.103
	P value: < 0.001	P value: 0.514	P value: 0.749
HDL/LDL	F value: 0.0000208	F value: 4.173	F value: 4.019
	P value: 0.996	P value: 0.043	P value: 0.047
TG (mg dl^{-1})	F value: 4.476	F value: 3.114	F value: 2.018
	P value: 0.036	P value: 0.079	P value: 0.157
Cr (mg ml^{-1})	F value: 164.186	F value: 0.500	F value: 1.426
	P value: < 0.001	P value: 0.480	P value: 0.234
CrCl (mg min^{-1})	F value: 21.52	F value: 0.099	F value: 2.000
	P value: < 0.001	P value: 0.753	P value: 0.159
Urea (mg dl^{-1})	F value: 19.493	F value: 1.956	F value: 0.453
	P value: < 0.001	P value: 0.164	P value: 0.502
Uric Acid (mg dl^{-1})	F value: 78.952	F value: 0.757	F value: 4.227
	P value: < 0.001	P value: 0.385	P value: 0.041
AST (U l^{-1})	F value: 16.842	F value: 1.117	F value: 1.982
	P value: < 0.001	P value: 0.292	P value: 0.161
ALT (U l^{-1})	F value: 24.143	F value: 2.400	F value: 7.385
	P value: < 0.001	P value: 0.123	P value: 0.007
γ-GT (U l^{-1})	F value: 18.562	F value: 0.818	F value: 1.704
	P value: < 0.001	P value: 0.367	P value: 0.194
Bilirubin (mg dl^{-1})	F value: 3.578	F value: 1.541	F value: 0.0266
	P value: 0.060	P value: 0.216	P value: 0.871
Alkaline Phosphatase (U l^{-1})	F value: 6.214	F value: 0.267	F value: 4.579
	P value: 0.014	P value: 0.606	P value: 0.034
Na$^+$ (mEq l^{-1})	F value: 24,393	F value: 1.188	F value: 0.0111
	P value: < 0.001	P value: 0.277	P value: 0.916
K$^+$ (mEq l^{-1})	F value: 3.335	F value: 0.717	F value: 0.163
	P value: 0.070	P value: 0.398	P value: 0.687
Ca^{2+} (mg dl^{-1})	F value: 0.794	F value: 0.239	F value: 3.173
	P value: 0.374	P value: 0.626	P value: 0.077
Sideremia (μg l^{-1})	F value: 2.260	F value: 0.291	F value: 1.909
	P value: 0.135	P value: 0.590	P value: 0.169
TSH (μUI ml^{-1})	F value: 0.512	F value: 0.130	F value: 0.305
	P value: 0.475	P value: 0.719	P value: 0.581

RBC (10^{12} l^{-1})	F value: 68.836 P value: < 0.001	F value: 2.082 P value: 0.151	F value: 0.000298 P value: 0.986
Hb (g dl^{-1})	F value: 68.385 P value: < 0.001	F value: 0.0168 P value: 0.897	F value: 4.579 P value: 0.031
Haematocrit (%)	F value: 75.543 P value: < 0.001	F value: 0.150 P value:0.699	F value: 2.433 P value: 0.121
MCV (fl)	F value: 3.504 P value: 0.063	F value: 2.045 P value:0.155	F value: 0.324 P value: 0.570
WBC (10^9 l^{-1})	F value: 3.503 P value: 0.063	F value: 14.802 P value: < 0.001	F value: 0.169 P value: 0.681
Neutrophils (10^3 μl^{-1})	F value: 1.820 P value: 0.179	F value: 8.358 P value: 0.004	F value: 0.0168 P value: 0.897
Lymphocytes (10^3 μl^{-1})	F value: 0.541 P value: 0.463	F value: 7.282 P value: 0.008	F value: 0.771 P value: 0.381
Monocytes (10^3 μl^{-1})	F value: 17.437 P value: < 0.001	F value: 7.204 P value: 0.008	F value: 0.468 P value: 0.495
Eosinophils (10^3 μl^{-1})	F value: 5.525 P value: 0.020	F value: 8.356 P value: 0.004	F value: 2.527 P value: 0.114
Basophils (10^3 μl^{-1})	F value: 3.601 P value: 0.060	F value: 3.387 P value: 0.068	F value: 0.0557 P value: 0.814
PLT (10^9 l^{-1})	F value: 19.408 P value: < 0.001	F value: 1.312 P value: 0.254	F value: 7.634 P value: 0.006

For each parameter the degree of freedom was 1, the F value and the P value are reported.

Table S2. Two Way Analysis of Variance report for the blood parameters included in PCA after body weight normalisation

	Sex-gender	Smoke effect	Sex-gender x smoke
Glycaemia (mg dl^{-1})	F value: 52.064 P value: < 0.001	F value: 1.421 P value: 0.235	F value: 4.630 P value: 0.033
TChol (mg dl^{-1})	F value: 115.273 P value: < 0.001	F value: 0.535 P value: 0.465	F value: 0.00005 P value: 0.994
LDL (mg dl^{-1})	F value: 69.336 P value: < 0.001	F value: 3.329 P value: 0.070	F value: 0.241 P value: 0.624
HDL (mg dl^{-1})	F value: 97.257 P value: < 0.001	F value: 0.171 P value: 0.680	F value:2.691 P value: 0.103
HDL/LDL	F value: 14.576 P value: < 0.001	F value: 2.722 P value: 0.101	F value: 6.194 P value: 0.014
TG (mg dl^{-1})	F value: 3.695 P value: 0.056	F value: 5.237 P value: 0.023	F value: 2.031 P value: 0.156
Cr (mg ml^{-1})	F value: 1.295 P value:0.257	F value: 0.0337 P value: 0.855	F value: 2.023 P value: 0.157
Urea (mg dl^{-1})	F value: 2.912 P value: 0.090	F value: 0.923 P value: 0.338	F value: 0.497 P value: 0.482
Uric Acid (mg dl^{-1})	F value: 3.518 P value: 0.062	F value: 0.059 P value: 0.807	F value: 0.516 P value: 0.474
AST (U l^{-1})	F value: 0.002 P value: 0.960	F value: 0.294 P value: 0.588	F value: 0.095 P value: 0.759
ALT (U l^{-1})	F value: 5.005 P value: 0.027	F value: 1.239 P value: 0.267	F value: 4.437 P value: 0.037

Smoking influence on male and female phenotypes

| Parameter			
γ-GT (U l^{-1})	F value: 3.474	F value: 3.978	F value: 0.162
	P value: 0.064	P value: 0.048	P value: 0.679
Bilirubin (mg dl^{-1})	F value: 1.040	F value: 1.066	F value: 0.871
	P value: 0.309	P value: 0.303	P value: 0.352
Alkaline Phosphatase (U l^{-1})	F value: 13.479	F value: 0.007	F value: 0.286
	P value: < 0.001	P value: 0.933	P value: 0.593
Na$^+$ (mEq l^{-1})	F value: 118.773	F value: 0.141	F value: 5.689
	P value: < 0.001	P value: 0.708	P value: 0.018
K$^+$ (mEq l^{-1})	F value: 89.214	F value: 0.540	F value: 3.713
	P value: < 0.001	P value: 0.464	P value: 0.056
Ca^{2+} (mg dl^{-1})	F value: 106.933	F value: 0.157	F value: 2.438
	P value: < 0.001	P value: 0.692	P value: 0.120
Sideremia (µg l^{-1})	F value: 4.310	F value: 0.008	F value: 0.349
	P value: 0.04	P value: 0.929	P value: 0.556
TSH (µUI ml^{-1})	F value: 5.054	F value: 0.060	F value: 1.094
	P value: 0.026	P value: 0.806	P value: 0.297
RBC (10^{12} l^{-1})	F value: 17.620	F value: 0.251	F value: 3.718
	P value: < 0.001	P value: 0.617	P value: 0.056
Hb (g dl^{-1})	F value: 35.310	F value: 0.294	F value: 0.600
	P value: < 0.001	P value: 0.589	P value: 0.440
Haematocrit (%)	F value: 45.684	F value: 0.076	F value: 1.807
	P value: < 0.001	P value: 0.783	P value: 0.181
MCV (fl)	F value: 114.848	F value: 1.638	F value: 1.484
	P value: < 0.001	P value: 0.202	P value: 0.225
WBC (10^9 l^{-1})	F value: 24.970	F value: 13.641	F value: 0.127
	P value: < 0.001	P value: < 0.001	P value: 0.723
Neutrophils (10^3 $µl^{-1}$)	F value: 14.350	F value: 7.867	F value: 0.473
	P value: < 0.001	P value: 0.006	P value: 0.492
Lymphocytes (10^3 $µl^{-1}$)	F value: 21.215	F value: 8.010	F value: 0.065
	P value: < 0.001	P value: 0.005	P value: 0.799
Monocytes (10^3 $µl^{-1}$)	F value: 1.894	F value: 8.122	F value: 0.004
	P value: 0.171	P value: 0.005	P value: 0.951
Eosinophils (10^3 $µl^{-1}$)	F value: 0.765	F value: 7.989	F value: 2.614
	P value: 0.383	P value: 0.005	P value: 0.108
Basophils (10^3 $µl^{-1}$)	F value: 0.376	F value: 3.746	F value: 0.107
	P value: 0.541	P value: 0.055	P value: 0.744
PLT (10^9 l^{-1})	F value: 98.399	F value: 1.558	F value: 1.203
	P value: < 0.001	P value: 0.214	P value: 0.274

For each parameter the degree of freedom was 1, the F value and the P value are reported.
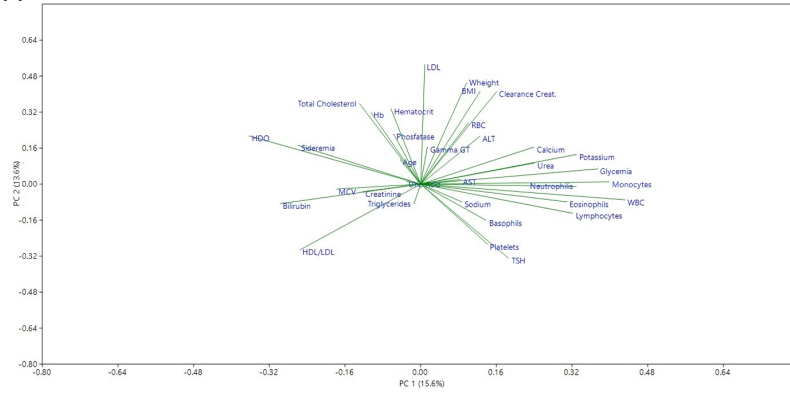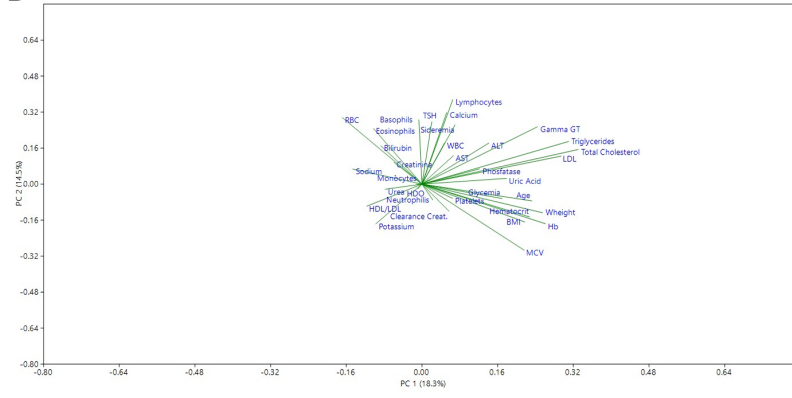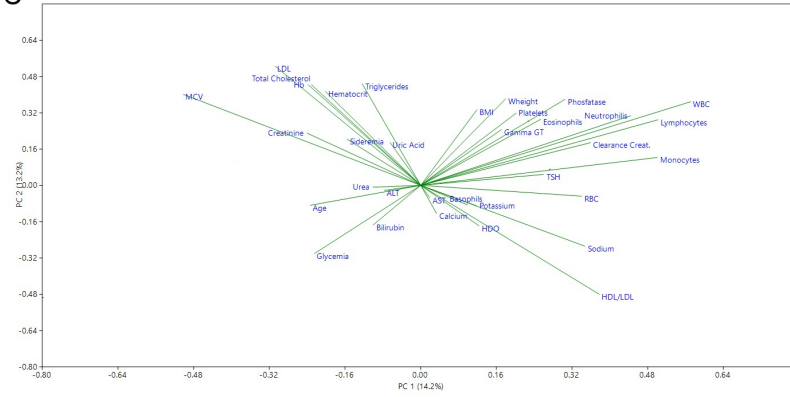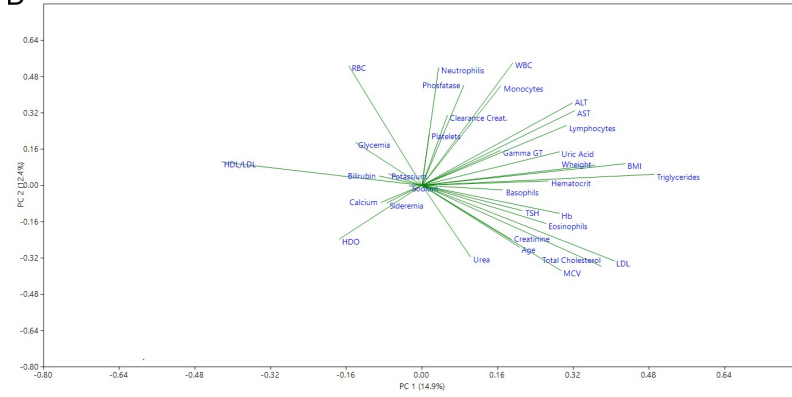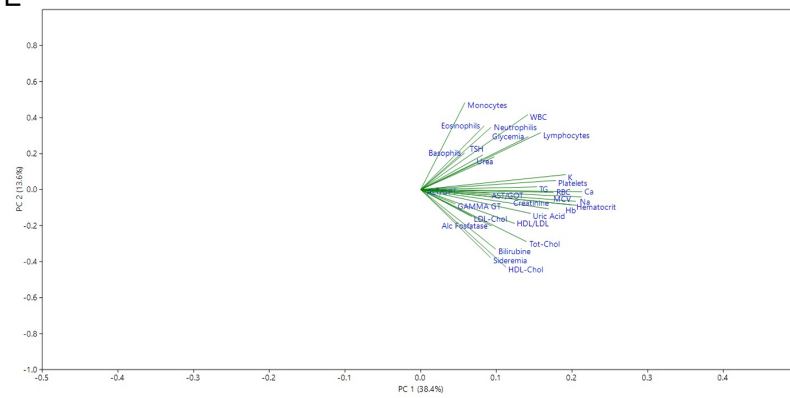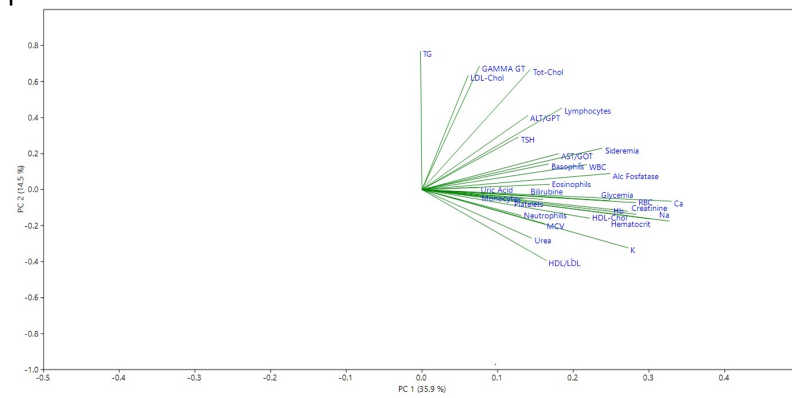
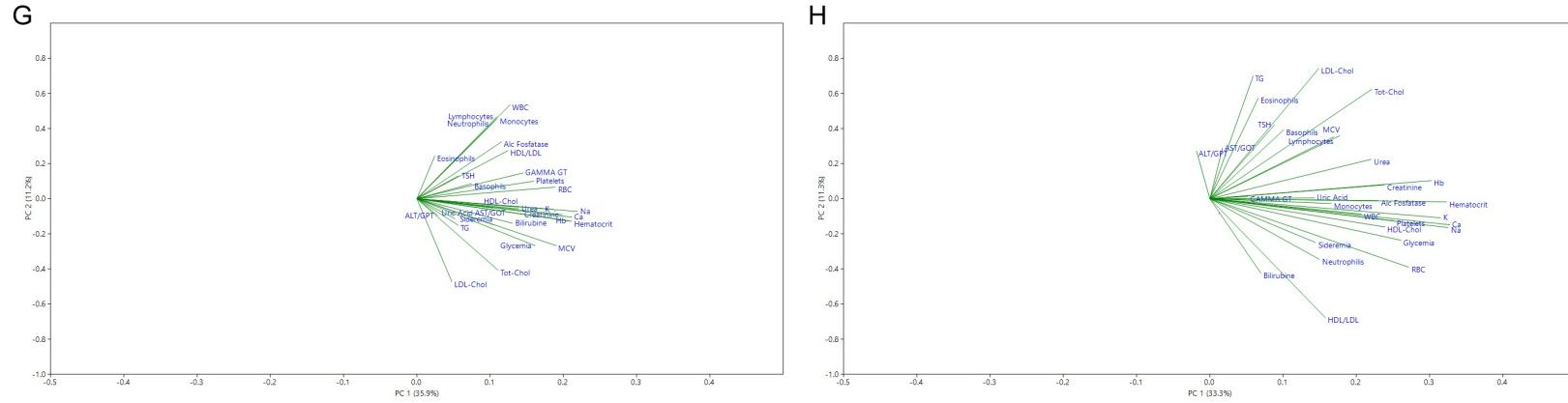# Smoking influence on male and female phenotypes

Figure S1. (A-D) Loading plots indicating the score of each observation on the first 2 principal components, as well as the contributing effect of each variable when the female (A) and male (B) smokers and non-smoker women (C) and men (D) were analyzed. (E-H) Loading plots indicating the score of each observation on the first 2 principal components, as well as the contributing effect of each variable when the weight normalized dataset is used. (E) Smoker women, (F) Smoker men, (G) Non-smoker women, (H) Non-smoker men.