

Supplemental Table 1. Estimated marginal means (z-score units, mean $\pm$ SE) by sex across three models

Fundus parameter domain	Parameter	M1 Female	M1 Male	M2 Female	M2 Male	M3 Female	M3 Male
Retinal vascular morphology	VFD	-0.067 $\pm$ 0.009	-0.029 $\pm$ 0.010	0.025 $\pm$ 0.009	0.077 $\pm$ 0.011	0.075 $\pm$ 0.013	0.159 $\pm$ 0.014
Retinal vascular morphology	VL	-0.084 $\pm$ 0.008	-0.019 $\pm$ 0.010	-0.009 $\pm$ 0.009	0.061 $\pm$ 0.011	0.062 $\pm$ 0.013	0.165 $\pm$ 0.014
Retinal vascular morphology	AVD	-0.026 $\pm$ 0.009	0.042 $\pm$ 0.010	-0.017 $\pm$ 0.008	0.028 $\pm$ 0.010	0.044 $\pm$ 0.012	0.042 $\pm$ 0.013
Retinal vascular morphology	AVC	0.007 $\pm$ 0.008	-0.013 $\pm$ 0.009	0.034 $\pm$ 0.011	0.030 $\pm$ 0.011	-0.055 $\pm$ 0.014	-0.047 $\pm$ 0.015
Retinal vascular morphology	VD	-0.076 $\pm$ 0.008	-0.022 $\pm$ 0.010	0.016 $\pm$ 0.009	0.083 $\pm$ 0.011	0.046 $\pm$ 0.013	0.156 $\pm$ 0.014
Retinal vascular morphology	AAD	-0.003 $\pm$ 0.009	-0.005 $\pm$ 0.010	0.019 $\pm$ 0.009	-0.003 $\pm$ 0.010	0.101 $\pm$ 0.012	0.044 $\pm$ 0.013
Retinal vascular morphology	AVeD	-0.027 $\pm$ 0.009	0.043 $\pm$ 0.010	-0.020 $\pm$ 0.008	0.026 $\pm$ 0.010	0.038 $\pm$ 0.012	0.044 $\pm$ 0.013
Retinal vascular morphology	AVR	0.056 $\pm$ 0.008	-0.091 $\pm$ 0.009	0.090 $\pm$ 0.010	-0.044 $\pm$ 0.011	0.124 $\pm$ 0.013	0.011 $\pm$ 0.014
Retinal vascular morphology	VAM_Distance	-0.055 $\pm$ 0.009	0.066 $\pm$ 0.010	-0.045 $\pm$ 0.010	0.057 $\pm$ 0.011	0.025 $\pm$ 0.013	0.120 $\pm$ 0.015
Retinal vascular morphology	VAPD1_Distance	-0.045 $\pm$ 0.009	0.030 $\pm$ 0.010	-0.021 $\pm$ 0.009	0.030 $\pm$ 0.010	0.069 $\pm$ 0.012	0.097 $\pm$ 0.013
Retinal vascular morphology	VAPD2_Distance	-0.052 $\pm$ 0.009	0.039 $\pm$ 0.010	-0.011 $\pm$ 0.009	0.057 $\pm$ 0.010	0.075 $\pm$ 0.012	0.121 $\pm$ 0.013
Optic disc & cup geometry	DA	-0.049 $\pm$ 0.009	0.032 $\pm$ 0.010	-0.011 $\pm$ 0.009	0.046 $\pm$ 0.010	0.079 $\pm$ 0.012	0.114 $\pm$ 0.013
Optic disc & cup geometry	HDD	-0.064 $\pm$ 0.009	0.057 $\pm$ 0.010	-0.019 $\pm$ 0.008	0.077 $\pm$ 0.010	0.062 $\pm$ 0.012	0.137 $\pm$ 0.013
Optic disc & cup geometry	VDD	-0.035 $\pm$ 0.009	0.006 $\pm$ 0.010	-0.000 $\pm$ 0.009	0.019 $\pm$ 0.010	0.094 $\pm$ 0.012	0.088 $\pm$ 0.013
Optic disc & cup geometry	DR	-0.060 $\pm$ 0.008	0.080 $\pm$ 0.009	-0.034 $\pm$ 0.010	0.101 $\pm$ 0.011	-0.059 $\pm$ 0.014	0.083 $\pm$ 0.015
Optic disc & cup geometry	DCB	-0.034 $\pm$ 0.008	0.035 $\pm$ 0.010	-0.045 $\pm$ 0.010	0.009 $\pm$ 0.011	-0.029 $\pm$ 0.013	0.048 $\pm$ 0.015
Optic disc & cup geometry	DDM	-0.040 $\pm$ 0.009	0.022 $\pm$ 0.010	-0.049 $\pm$ 0.009	-0.012 $\pm$ 0.009	0.064 $\pm$ 0.011	0.081 $\pm$ 0.013
Optic disc & cup geometry	LSR	0.064 $\pm$ 0.008	-0.088 $\pm$ 0.009	0.045 $\pm$ 0.010	-0.102 $\pm$ 0.011	0.068 $\pm$ 0.014	-0.082 $\pm$ 0.015
Optic disc & cup geometry	MCB	-0.063 $\pm$ 0.009	0.040 $\pm$ 0.010	-0.007 $\pm$ 0.009	0.073 $\pm$ 0.010	0.099 $\pm$ 0.012	0.163 $\pm$ 0.013
Optic disc & cup geometry	CA	-0.058 $\pm$ 0.008	0.056 $\pm$ 0.010	-0.006 $\pm$ 0.009	0.092 $\pm$ 0.011	0.030 $\pm$ 0.013	0.110 $\pm$ 0.015
Optic disc & cup geometry	HCD	-0.060 $\pm$ 0.008	0.058 $\pm$ 0.010	0.005 $\pm$ 0.009	0.108 $\pm$ 0.011	0.028 $\pm$ 0.013	0.113 $\pm$ 0.015
Optic disc & cup geometry	VCD	-0.050 $\pm$ 0.008	0.044 $\pm$ 0.010	-0.027 $\pm$ 0.009	0.052 $\pm$ 0.011	0.008 $\pm$ 0.013	0.068 $\pm$ 0.015
Optic disc & cup geometry	CDR	-0.033 $\pm$ 0.008	0.045 $\pm$ 0.010	0.010 $\pm$ 0.010	0.091 $\pm$ 0.012	-0.044 $\pm$ 0.014	0.033 $\pm$ 0.015
Optic disc & cup geometry	CDR_H	-0.020 $\pm$ 0.008	0.022 $\pm$ 0.009	0.033 $\pm$ 0.010	0.079 $\pm$ 0.011	-0.021 $\pm$ 0.014	0.022 $\pm$ 0.015
Optic disc & cup geometry	CDR_V	-0.037 $\pm$ 0.008	0.051 $\pm$ 0.009	-0.031 $\pm$ 0.010	0.059 $\pm$ 0.011	-0.082 $\pm$ 0.014	0.006 $\pm$ 0.015
Optic disc & cup geometry	VHR_OD_VA	0.068 $\pm$ 0.008	-0.103 $\pm$ 0.009	0.041 $\pm$ 0.010	-0.123 $\pm$ 0.011	0.070 $\pm$ 0.014	-0.100 $\pm$ 0.015
Optic disc & cup geometry	SLR_OD	-0.068 $\pm$ 0.008	0.095 $\pm$ 0.009	-0.048 $\pm$ 0.010	0.109 $\pm$ 0.011	-0.073 $\pm$ 0.014	0.088 $\pm$ 0.015
Optic disc & cup geometry	MaxRD_OC	-0.045 $\pm$ 0.009	0.028 $\pm$ 0.010	-0.007 $\pm$ 0.009	0.045 $\pm$ 0.010	0.059 $\pm$ 0.012	0.089 $\pm$ 0.014

Fundus parameter domain	Parameter	M1 Female	M1 Male	M2 Female	M2 Male	M3 Female	M3 Male
Optic disc & cup geometry	MinRD_OC	-0.031 ± 0.008	0.024 ± 0.010	-0.072 ± 0.010	-0.031 ± 0.011	0.000 ± 0.013	0.030 ± 0.015
Optic disc & cup geometry	RID	-0.000 ± 0.009	-0.028 ± 0.010	0.041 ± 0.009	-0.007 ± 0.010	0.142 ± 0.013	0.080 ± 0.014
Optic disc & cup geometry	RND	-0.054 ± 0.008	0.052 ± 0.010	-0.063 ± 0.009	0.025 ± 0.010	0.022 ± 0.012	0.095 ± 0.014
Optic disc & cup geometry	RSD	-0.006 ± 0.009	-0.024 ± 0.010	-0.014 ± 0.010	-0.051 ± 0.011	0.074 ± 0.013	0.010 ± 0.014
Optic disc & cup geometry	RTD	-0.007 ± 0.009	0.007 ± 0.010	-0.023 ± 0.010	-0.027 ± 0.011	0.058 ± 0.014	0.039 ± 0.015
Peripapillary atrophy	AAA	-0.036 ± 0.008	0.083 ± 0.010	-0.095 ± 0.009	0.007 ± 0.011	-0.062 ± 0.014	0.017 ± 0.016
Peripapillary atrophy	AAH	-0.072 ± 0.008	0.118 ± 0.009	-0.114 ± 0.010	0.060 ± 0.011	-0.065 ± 0.014	0.085 ± 0.015
Peripapillary atrophy	AAW	-0.049 ± 0.008	0.096 ± 0.010	-0.120 ± 0.010	0.008 ± 0.011	-0.085 ± 0.013	0.021 ± 0.015
Peripapillary atrophy	AADM	0.005 ± 0.011	-0.038 ± 0.011	-0.020 ± 0.011	-0.063 ± 0.012	0.052 ± 0.015	-0.001 ± 0.016
Peripapillary atrophy	AAR	-0.034 ± 0.008	0.080 ± 0.010	-0.105 ± 0.009	-0.006 ± 0.011	-0.091 ± 0.013	-0.010 ± 0.015
Peripapillary atrophy	AAW_DDHH	-0.043 ± 0.008	0.088 ± 0.009	-0.126 ± 0.010	-0.008 ± 0.011	-0.105 ± 0.013	-0.005 ± 0.015
Peripapillary atrophy	AAH_DDV	-0.076 ± 0.008	0.126 ± 0.009	-0.125 ± 0.010	0.063 ± 0.011	-0.092 ± 0.013	0.074 ± 0.015
Fundus tessellation density	Fundus_FTD	0.007 ± 0.009	0.033 ± 0.010	-0.099 ± 0.009	-0.094 ± 0.010	-0.077 ± 0.013	-0.069 ± 0.015
Fundus tessellation density	OD_4.5mm_FTD	-0.010 ± 0.008	0.052 ± 0.010	-0.074 ± 0.009	-0.025 ± 0.011	-0.061 ± 0.013	0.002 ± 0.016
Fundus tessellation density	M_1mm_FTD	0.040 ± 0.009	-0.029 ± 0.009	-0.050 ± 0.010	-0.134 ± 0.010	-0.016 ± 0.014	-0.099 ± 0.015
Fundus tessellation density	M_3mm_FTD	0.053 ± 0.009	-0.038 ± 0.009	-0.064 ± 0.009	-0.173 ± 0.010	-0.038 ± 0.014	-0.145 ± 0.015
Fundus tessellation density	M_6mm_FTD	0.050 ± 0.009	-0.028 ± 0.009	-0.063 ± 0.009	-0.161 ± 0.010	-0.032 ± 0.014	-0.128 ± 0.015
Fundus tessellation density	OD_4.5mm_S_FTD	-0.018 ± 0.008	0.050 ± 0.010	-0.103 ± 0.009	-0.045 ± 0.011	-0.094 ± 0.013	-0.043 ± 0.015
Fundus tessellation density	OD_4.5mm_I_FTD	-0.035 ± 0.008	0.084 ± 0.010	-0.097 ± 0.009	0.012 ± 0.011	-0.098 ± 0.013	0.026 ± 0.016
Fundus tessellation density	OD_4.5mm_N_FTD	-0.008 ± 0.008	0.028 ± 0.010	-0.033 ± 0.010	-0.007 ± 0.011	-0.025 ± 0.013	0.020 ± 0.016
Fundus tessellation density	OD_4.5mm_T_FTD	0.012 ± 0.008	0.014 ± 0.010	-0.004 ± 0.010	-0.014 ± 0.011	0.021 ± 0.014	0.027 ± 0.016

Note: Values are estimated marginal means ± standard error in z-score units. M1 was unadjusted; M2 was adjusted for age and age squared; M3 was additionally adjusted for 20 binary systemic conditions. Generalized estimating equations used participant-level clustering to account for bilateral-eye and repeated eye-level records.