

Appendix:**eTable 1. Glaucoma Medications.**

Code	Medication
1140853558	physostigmine+pilocarpine 0.25%+2% eye drops
1140875816	pilocarpine
1140875840	timolol 0.25% eye drops
1140875934	apraclonidine
1140877988	teoptic 1% eye drops
1140878080	sno pilo 1% eye drops
1140878092	minims pilocarpine nitrate 1% single-use eye drops
1140878098	betagan eye drops
1140879758	betaxolol
1140879822	carteolol
1140879826	levobunolol
1140879866	timolol
1140881882	timoptol 0.25% eye drops
1140881890	betoptic 0.5% eye drops
1140922714	dorzolamide
1140922718	trusopt 2% ophthalmic solution
1141146188	latanoprost
1141146198	xalatan 0.005% eye drops
1141169516	dorzolamide+timolol
1141169520	cosopt 2%/0.5% eye drops
1141176284	brinzolamide
1141176288	azopt 10mg/ml eye drops
1141179734	nyogel 0.1% liquid eye gel
1141179914	bimatoprost
1141179920	lumigan 0.3mg/ml eye drops
1141184722	latanoprost+timolol
1141184726	xalacom 0.005%/0.5% eye drops
1141185316	travoprost
1141185326	travatan 40micrograms/ml eye drops
1140921818	iopidine ophthalmic 0.5% intra-ocular solution
1141150750	brimonidine tartrate
1141150754	alphagan 0.2% eye drops
1140856568	acetazolamide [ep] 250mg tablets
1140875868	acetazolamide
1140875870	diamox 250mg tablet

eTable 2. Retinal layer thicknesses.

Layer	Boundaries of interest
Retinal nerve fiber layer	Internal limiting membrane-nerve fiber layer
Ganglion cell layer	Nerve fiber layer-ganglion cell layer
Inner plexiform layer	Ganglion cell layer-inner plexiform layer
Ganglion cell complex	Retinal nerve fiber layer + ganglion cell layer + inner plexiform layer
Inner nuclear layer	Inner plexiform layer-inner nuclear layer
Outer plexiform layer	Inner nuclear layer-external limiting membrane
Photoreceptor segment	External limiting membrane-retinal pigment epithelium
Retinal pigment epithelium	Retinal pigment epithelium-Bruch's membrane
Choroid scleral interface	Bruch's membrane-chorio-scleral interface

eTable 3. Study Population Characteristics.

Characteristic	
Age (SD)	56.3 (8.05)
Ancestry:	
African (%)	7,738 (1.90%)
American (%)	784 (0.19%)
East / South Asian (%)	9,099 (2.23%)
European (%)	390,046 (95.70%)
Male sex (%)	188,484 (46.2%)

eTable 4. Ocular Factors by POAG PRS decile.

POAG PRS Decile	IOPcc (mean)	IOPcc (SD)	CH (mean)	CH (SD)	CRF (mean)	CRF (SD)	SE (mean)	SE (SD)
1	15.65	3.83	10.54	1.86	10.43	1.96	-0.06	2.31
2	15.94	3.86	10.54	1.87	10.51	1.98	-0.15	2.32
3	16.12	3.95	10.47	1.9	10.5	1.99	-0.14	2.34
4	16.31	4.04	10.43	1.9	10.5	1.98	-0.17	2.33
5	16.39	4.01	10.4	1.93	10.5	1.98	-0.23	2.39
6	16.64	4.18	10.38	1.92	10.56	2	-0.23	2.36
7	16.81	4.12	10.34	1.89	10.57	1.98	-0.19	2.35
8	16.96	4.29	10.35	1.93	10.61	2	-0.26	2.37
9	17.27	4.34	10.31	1.91	10.64	2	-0.31	2.34
10	17.78	4.62	10.24	1.93	10.71	2	-0.39	2.31

eTable 5. Retinal layer thicknesses.

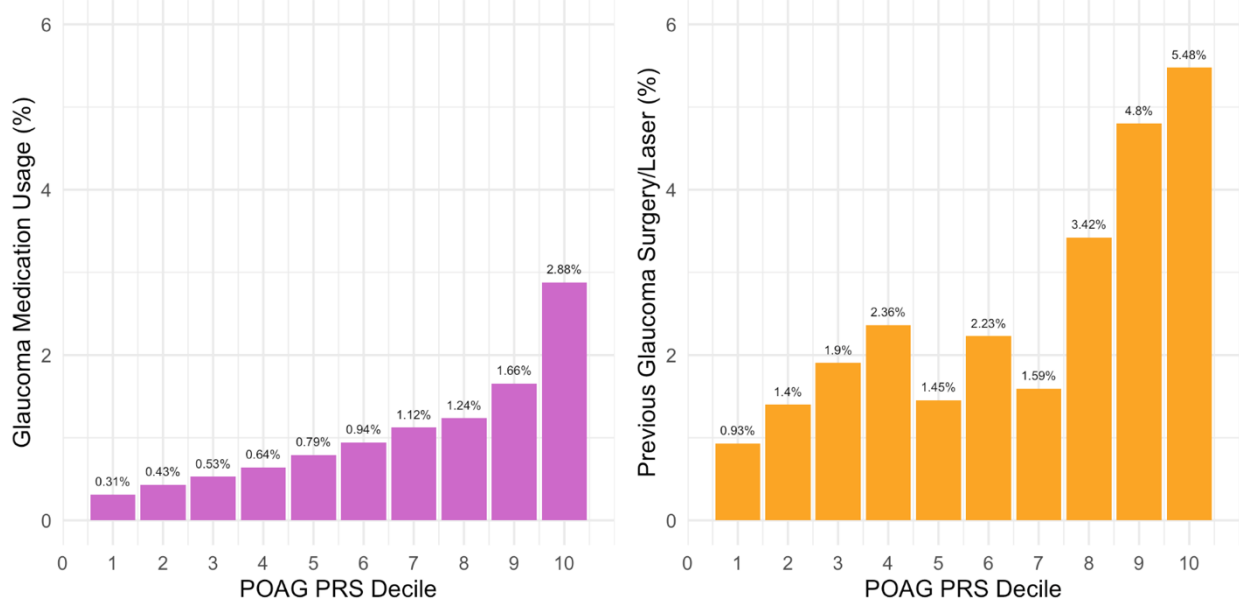
Layer	Overall Mean (SD) (um)	Superior Mean (SD) (um)	Inferior Mean (SD) (um)
Retinal nerve fiber layer	39.78 (4.74)	39.21 (5.36)	40.7 (5.96)
Ganglion cell layer	33.31 (2.81)	32.96 (3.51)	33.4 (3.65)
Inner plexiform layer	28.97 (2.57)	28.76 (3.01)	28.98 (2.99)
Ganglion cell complex	102.05 (8.26)	100.93 (9.15)	103.09 (9.41)
Inner nuclear layer	30.86 (2.04)	30.84 (2.46)	30.74 (2.4)
Outer plexiform layer	77.23 (5.81)	78.85 (6.35)	75.18 (6.26)
Photoreceptor segment	40.02 (2.51)	40.35 (2.74)	39.6 (2.83)
Retinal pigment epithelium	23.18 (1.83)	23.26 (3.26)	23.11 (2.4)
Choroid scleral interface	201.13 (46.48)	205.01 (46.02)	197.12 (52.53)

eTable 6. Association of retinal layer thicknesses per 1 point increase in PRS.

Layer	Overall			Superior			Inferior		
	Beta (um)	95% CI	p-value	Beta (um)	95% CI	p-value	Beta (um)	95% CI	p-value
RNFL	-0.14	(-0.19, -0.1)	<.001	-0.1	(-0.16, -0.05)	<.001	-0.2	(-0.26, -0.14)	<.001
GCL	-0.05	(-0.08, -0.02)	<.001	-0.05	(-0.09, -0.02)	.003	-0.04	(-0.07, 0)	.07
IPL	-0.06	(-0.09, -0.04)	<.001	-0.07	(-0.1, -0.04)	<.001	-0.05	(-0.08, -0.02)	.001
GCC	-0.26	(-0.34, -0.17)	<.001	-0.22	(-0.32, -0.13)	<.001	-0.29	(-0.39, -0.19)	<.001
INL	-0.03	(-0.05, -0.01)	.003	-0.04	(-0.07, -0.02)	<.001	-0.02	(-0.04, 0.01)	.14
OPL	-0.03	(-0.09, 0.03)	.30	-0.08	(-0.14, -0.01)	.02	0.01	(-0.05, 0.08)	.66
PS	-0.03	(-0.06, 0)	.02	-0.04	(-0.07, -0.01)	.01	-0.03	(-0.06, 0)	.05
RPE	0	(-0.02, 0.02)	.83	0.01	(-0.02, 0.03)	.56	0.01	(-0.01, 0.04)	.35
CSI	0.07	(-0.38, 0.52)	.78	0.23	(-0.23, 0.69)	.32	-0.14	(-0.65, 0.37)	.60

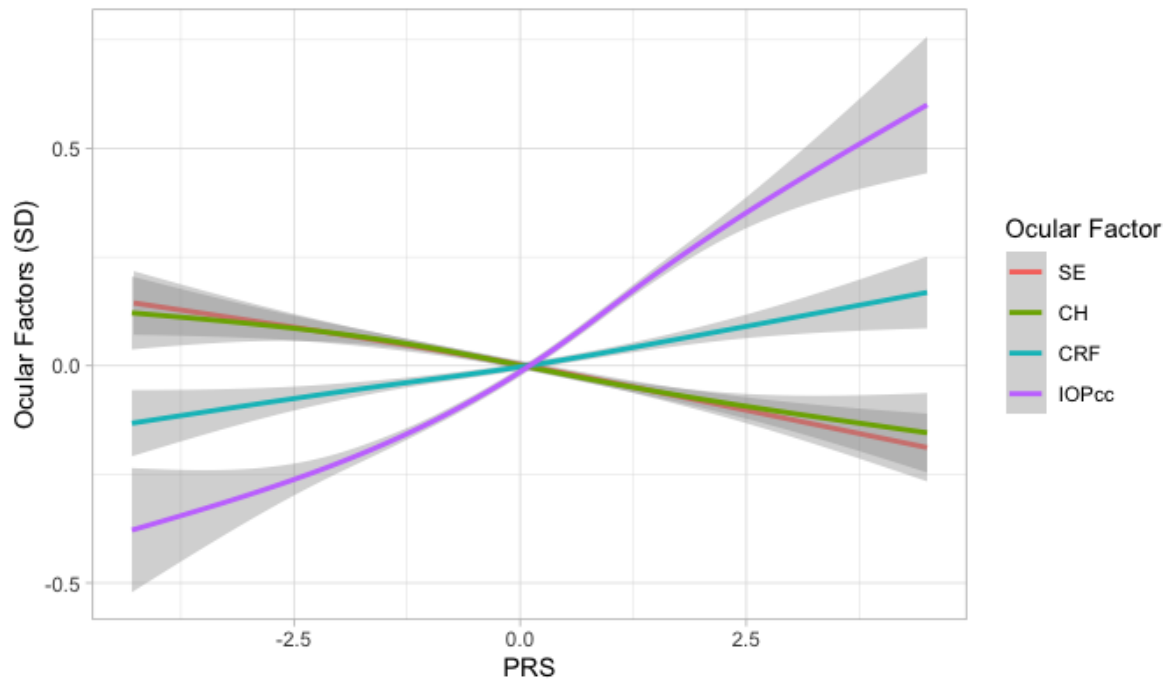
Note: adjusted model includes spherical equivalence, age, age², sex, and ancestry as covariates.

eFigure 1. Use of glaucoma medications or prior glaucoma surgery/laser per POAG PRS decile.



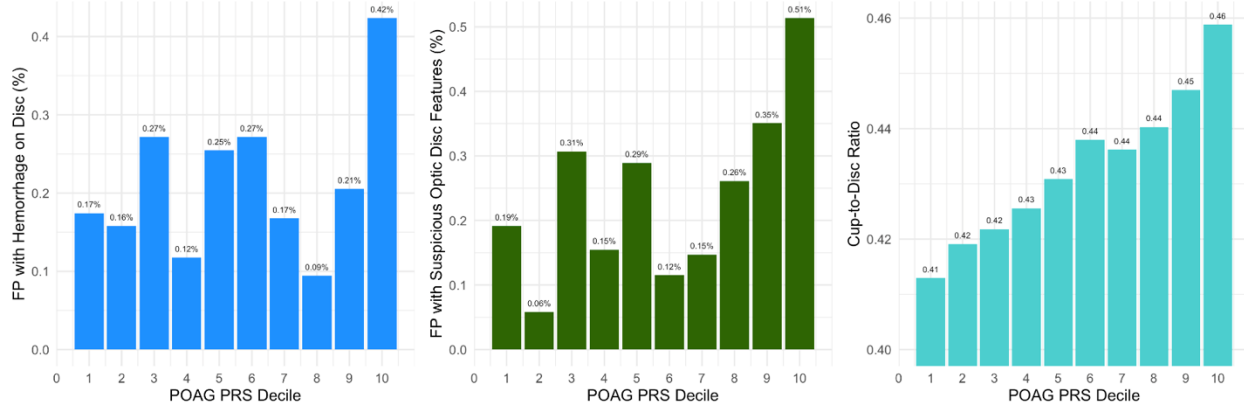
Note: POAG = primary open angle glaucoma, PRS = polygenic risk score.

eFigure 2. Ocular factors (SE, CHF, CRF, IOPcc) per POAG PRS decile.



Note: SE = spherical equivalence, CHF = corneal hysteresis, CRF = corneal resistance factor, IOPcc = intraocular pressure, POAG = primary open angle glaucoma, PRS = polygenic risk score.

eFigure 3. Fundus photograph characteristics (hemorrhage on disc, suspicious optic disc features and cup-to-disc ratio) by POAG PRS decile.



Note: POAG = primary open angle glaucoma, PRS = polygenic risk score.