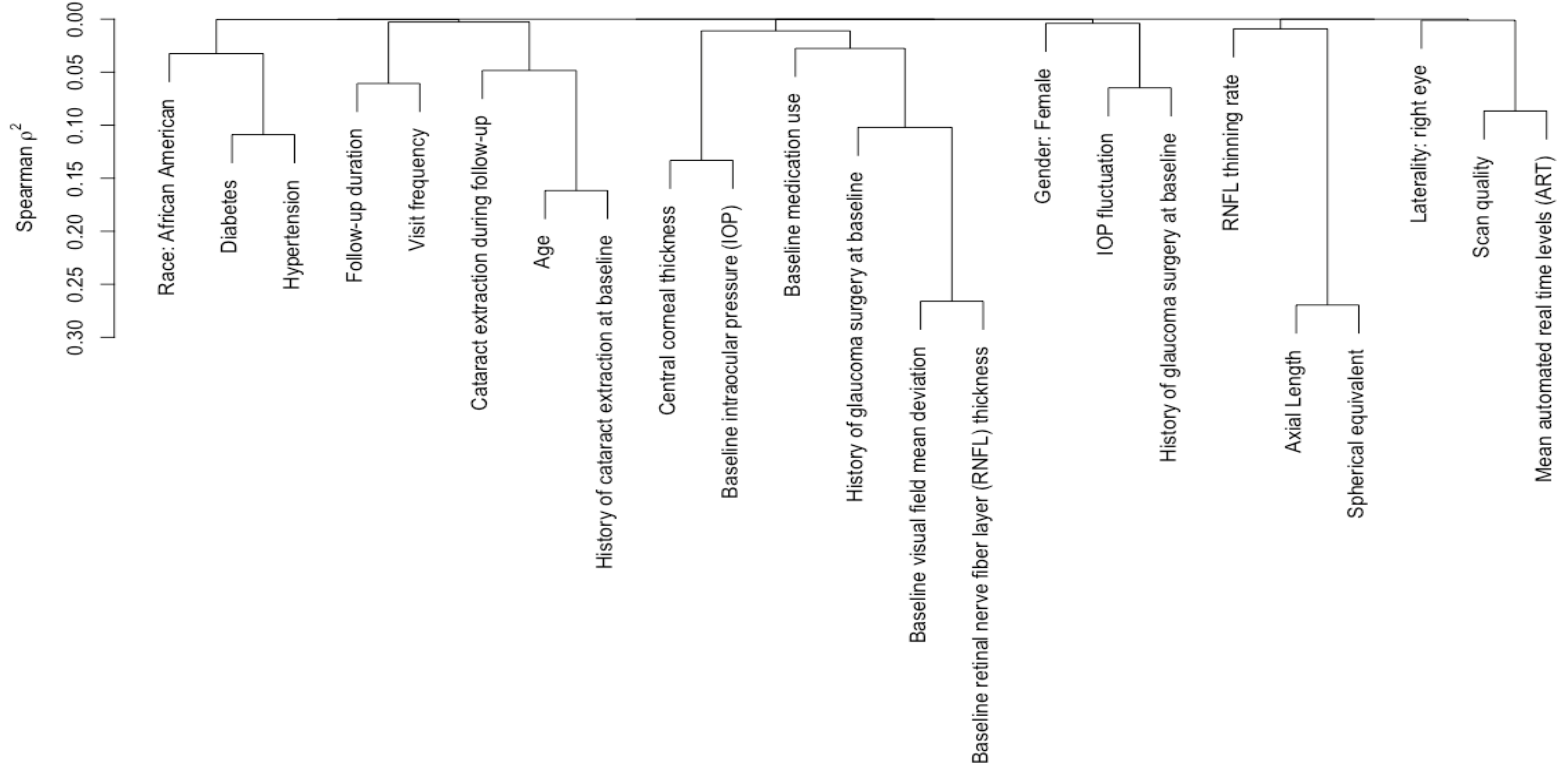
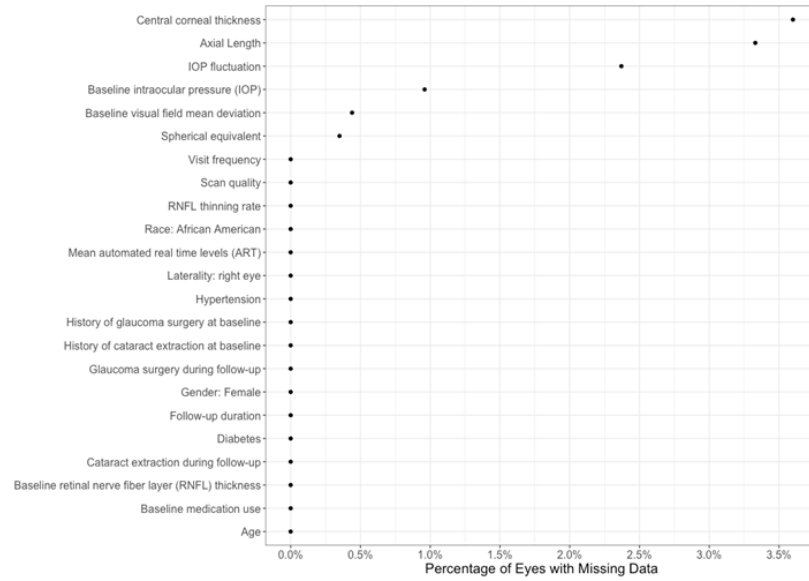


Supplemental Figure S1. Correlation of variables

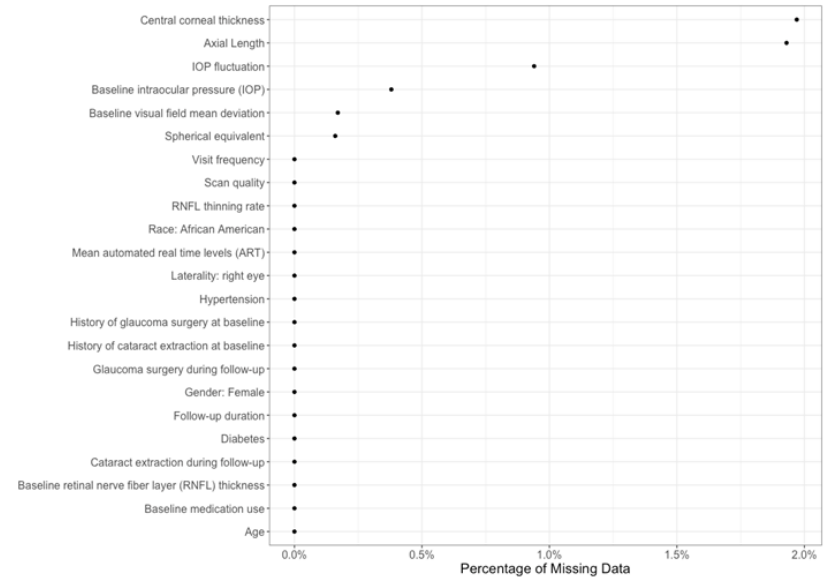


## Supplemental Figure S2. Proportions of missing data

(A) Percentage of eyes with missing data



(B) Percentage of missing data



<b>Supplemental Table S1. Effects of clinical factors on OCT measurement variability – Univariable analysis</b>					
<b>Variable</b>	<b>Intercept</b>	<b>β Coefficient</b>	<b>SE</b>	<b>P-value</b>	<b>Total R<sup>2</sup></b>
Age, per 1 year older	1.233	0.004	0.003	0.170	0.2806
Gender: Female (vs. male)	1.528	-0.037	0.062	0.547	0.1850
Race: African American (vs. others)	1.428	0.211	0.063	<b>&lt;0.001</b>	0.1850
Diabetes (yes/no)	1.479	0.216	0.091	<b>0.018</b>	0.1850
Hypertension (yes/no)	1.482	0.051	0.061	0.398	0.1850
Laterality: Right eye	1.466	0.084	0.008	<b>&lt;0.001</b>	0.1855
CCT, per 1 μm thicker	1.890	-0.001	0.001	0.364	0.2805
AL, per 1 mm longer	1.782	-0.011	0.028	0.690	0.2810
Spherical equivalent, per 1 D higher	1.537	0.043	0.014	<b>0.002</b>	0.2806
Baseline VF MD, per 1 dB higher	1.435	-0.024	0.007	<b>&lt;0.001</b>	0.2806
Baseline IOP, per 1 mmHg higher	1.630	-0.007	0.006	0.226	0.2806
IOP fluctuation, per 1 mmHg higher	1.169	0.134	0.021	<b>&lt;0.001</b>	0.2699
Baseline medication use (yes/no)	1.487	0.024	0.078	0.754	0.1850
History of CE at baseline (yes/no)	1.557	-0.281	0.026	<b>&lt;0.001</b>	0.1857
CE during follow-up (yes/no)	1.392	0.534	0.023	<b>&lt;0.001</b>	0.1877
History of glaucoma surgery at baseline (yes/no)	1.490	0.067	0.024	<b>0.006</b>	0.1850
Glaucoma surgery during follow-up (yes/no)	1.458	0.242	0.018	<b>&lt;0.001</b>	0.1859
Baseline RNFLT, per 1 μm thicker	1.505	0.000	0.002	0.955	0.2806
RNFL thinning rate, per 1 μm/year more positive	1.415	0.050	0.035	0.150	0.2805
Scan quality, per 1 unit higher	1.633	-0.005	0.002	<b>0.009</b>	0.1912
Mean ART, per 1 unit higher	1.515	0.000	0.000	0.219	0.1850
Follow-up duration, per 1 year longer	1.306	0.032	0.011	<b>0.006</b>	0.2806
Visit frequency, per 1 time/year higher	1.806	-0.177	0.065	<b>0.007</b>	0.2806

Abbreviation: AL = axial length, ART = automated real time value, CCT = central corneal thickness, CE = cataract extraction, IOP = intraocular pressure, OCT = optical coherence tomography, RNFL = retinal nerve fiber layer, RNFLT= RNFL thickness, SE = standard error, VF MD = visual field mean deviation

<b>Supplemental Table S2. RNFLT variability of patients stratified by the rate of RNFLT thinning</b>			
	<b>Mean (95% CI) RNFLT variability (<math>\mu\text{m}</math>)</b>		
<b>Rate of RNFLT thinning</b>	Whole cohort	Glaucoma suspect eyes	POAG eyes
$\leq -1.0 \mu\text{m}/\text{year}$	1.49 (1.28, 1.70)	1.30 (1.06, 1.55)	1.61 (1.30, 1.92)
$> -1.0$ and $\leq -0.5\mu\text{m}/\text{year}$	1.27 (1.12, 1.42)	1.13 (0.94, 1.31)	1.37 (1.14, 1.60)
$> -0.5 \mu\text{m}/\text{year}$	1.64 (1.48, 1.81)	1.50 (1.31, 1.69)	1.73 (1.49, 1.98)
Abbreviation: RNFLT = retinal nerve fiber layer thickness; POAG = Primary open-angle glaucoma			

**Supplemental Table S3. Effects of clinical factors on OCT measurement variability in patients without intervening surgeries - Full model (Multivariable analysis)**

Variable	$\beta$ Coefficient	SE	P-value
(Intercept)	1.894	1.232	0.124
Age, per 1 year older	0.002	0.003	0.603
Gender: Female (vs. male)	< 0.001	0.001	0.823
Race: African American (vs. others)	-0.015	0.029	0.613
Diabetes (yes/no)	-0.014	0.007	<b>0.039</b>
Hypertension (yes/no)	-0.005	0.007	0.446
Laterality: Right eye	0.033	0.025	0.188
CCT, per 1 $\mu\text{m}$ thicker	0.005	0.002	<b>0.012</b>
AL, per 1 mm longer	0.020	0.026	0.446
Spherical equivalent, per 1 D higher	-0.022	0.004	<b>&lt; 0.001</b>
Baseline VF MD, per 1 dB higher	< 0.001	0.001	0.392
Baseline IOP, per 1 mmHg higher	0.029	0.010	<b>0.006</b>
IOP fluctuation, per 1 mmHg higher	0.032	0.018	0.069
Baseline medication use (yes/no)	-0.140	0.055	<b>0.012</b>
History of CE at baseline (yes/no)	0.055	0.062	0.377
History of glaucoma surgery at baseline (yes/no)	0.008	0.081	0.922
Baseline RNFLT, per 1 $\mu\text{m}$ thicker	-0.015	0.059	0.800
RNFL thinning rate, per 1 $\mu\text{m}/\text{year}$ more positive	0.009	0.043	0.844
Scan quality, per 1 unit higher	-0.015	0.072	0.834
Mean ART, per 1 unit higher	-0.083	0.079	0.292
Follow-up duration, per 1 year longer	0.161	0.077	<b>0.038</b>
Visit/testing frequency, per 1 time/year higher	-0.076	0.050	0.134
	<b>Total R<sup>2</sup>: 0.65</b>		

\*A positive co-efficient indicates increased RNFLT variability, while a negative co-efficient indicates decreased RNFLT variability.

Abbreviation: AL = axial length, ART = automated real time value, CCT = central corneal thickness, CE = cataract extraction, IOP = intraocular pressure, OCT = optical coherence tomography, RNFL = retinal nerve fiber layer, RNFLT= RNFL thickness, SE = standard error, VF MD = visual field mean deviation