**Table S1.** Multiplicity-adjusted global time effects across OCT-A outcomes.

| Outcome | Unadjusted global p | BH-FDR q | Holm-adjusted p |
|---|---|---|---|
| Whole-image SCP VD (%) | 0.866 | 0.987 | 1.000 |
| Whole-image DCP VD (%) | 0.885 | 0.987 | 1.000 |
| Foveal SCP VD (%) | **0.005** | **0.019** | **0.062** |
| Foveal DCP VD (%) | 0.833 | 0.987 | 1.000 |
| Parafoveal SCP VD (%) | 0.261 | 0.522 | 1.000 |
| Parafoveal DCP VD (%) | 0.872 | 0.987 | 1.000 |
| Perifoveal SCP VD (%) | 0.987 | 0.987 | 1.000 |
| Perifoveal DCP VD (%) | 0.925 | 0.987 | 1.000 |
| Foveal thickness (μm) | **<0.001** | **<0.001** | **<0.001** |
| Parafoveal thickness (μm) | **<0.001** | **<0.001** | **<0.001** |
| Perifoveal thickness (μm) | **<0.001** | **<0.001** | **<0.001** |
| FAZ area (mm²) | 0.244 | 0.522 | 1.000 |
| FAZ perimeter (mm) | 0.199 | 0.522 | 1.000 |
| FAZ foveal density (FD-300) (%) | 0.618 | 0.987 | 1.000 |
| Choriocapillaris flow area (mm²) | 0.127 | 0.405 | 1.000 |
| Subfoveal choroidal thickness (μm) | 0.554 | 0.984 | 1.000 |

Maximum-likelihood linear mixed-effects models with categorical visit and random intercepts for patient and eye nested within patient. Global time effects were tested using 3-df Wald tests (T0–T3). Adjustments were applied across all 16 global time-effect tests. BH-FDR, Benjamini–Hochberg false discovery rate; SCP, superficial capillary plexus; DCP, deep capillary plexus; VD, vessel density; FAZ, foveal avascular zone; FD-300, vessel density within a 300-μm-wide ring surrounding the FAZ; OCT-A, optical coherence tomography angiography.

**Table S2.** Exploratory associations of disease severity with longitudinal OCT-A changes.

| Parameter | Severity × visit p | FDR q |
|---|---|---|
| Whole-image SCP VD (%) | 0.497 | 0.876 |
| Whole-image DCP VD (%) | 0.535 | 0.876 |
| Foveal SCP VD (%) | 0.685 | 0.876 |
| Foveal DCP VD (%) | 0.858 | 0.916 |
| Parafoveal SCP VD (%) | 0.592 | 0.876 |
| Parafoveal DCP VD (%) | 0.072 | 0.876 |
| Perifoveal SCP VD (%) | 0.420 | 0.876 |
| Perifoveal DCP VD (%) | 0.178 | 0.876 |
| Foveal thickness (μm) | 0.556 | 0.876 |
| Parafoveal thickness (μm) | 0.997 | 0.997 |
| Perifoveal thickness (μm) | 0.767 | 0.876 |
| FAZ area (mm²) | 0.762 | 0.876 |
| FAZ perimeter (mm) | 0.762 | 0.876 |
| FAZ foveal density (FD-300) (%) | 0.563 | 0.876 |
| Choriocapillaris flow area (mm²) | 0.671 | 0.876 |
| Subfoveal choroidal thickness (μm) | 0.220 | 0.876 |

Maximum-likelihood linear mixed-effects models with random intercepts for patient and eye nested within patient; three-degree-of-freedom Wald tests. BH-FDR correction across 16 outcomes. Baseline: 53 eyes; final visit: 35 eyes.

**Table S3.** Exploratory associations of total laser spot count with longitudinal OCT-A changes.

| Parameter | Adjusted coefficient / 100 spots | 95% bootstrap CI | Unadjusted p | FDR q |
|---|---|---|---|---|
| Whole-image SCP VD (%) | 0.009 pp | (-0.066, +0.114) | 0.814 | 0.868 |
| Whole-image DCP VD (%) | 0.050 pp | (-0.037, +0.118) | 0.158 | 0.360 |
| Foveal SCP VD (%) | -0.109 pp | (-0.305, +0.117) | 0.259 | 0.460 |
| Foveal DCP VD (%) | -0.326 pp | (-0.549, -0.101) | **0.006** | **0.049** |
| Parafoveal SCP VD (%) | -0.017 pp | (-0.109, +0.080) | 0.705 | 0.817 |
| Parafoveal DCP VD (%) | -0.015 pp | (-0.117, +0.074) | 0.715 | 0.817 |
| Perifoveal SCP VD (%) | -0.018 pp | (-0.101, +0.089) | 0.650 | 0.817 |
| Perifoveal DCP VD (%) | 0.068 pp | (-0.022, +0.135) | 0.054 | 0.216 |
| Foveal thickness (μm) | 1.223 μm | (+0.502, +2.253) | **0.004** | **0.049** |
| Parafoveal thickness (μm) | 0.702 μm | (+0.115, +1.371) | 0.017 | 0.093 |
| Perifoveal thickness (μm) | 0.307 μm | (-0.231, +1.068) | 0.330 | 0.528 |
| FAZ area ($mm^2$) | 0.0052 $mm^2$ | (-0.0059, +0.0130) | 0.254 | 0.460 |
| FAZ perimeter (mm) | 0.0248 mm | (-0.0119, +0.0512) | 0.114 | 0.304 |
| FAZ foveal density (FD-300) (%) | 0.175 pp | (-0.067, +0.360) | 0.085 | 0.273 |
| Choriocapillaris flow area ($mm^2$) | -0.0046 $mm^2$ | (-0.0244, +0.0201) | 0.651 | 0.817 |
| Subfoveal choroidal thickness (μm) | 0.112 μm | (-1.448, +1.375) | 0.879 | 0.879 |

35 eyes from 26 patients. Linear regressions adjusted for the baseline value of the corresponding outcome and retinopathy severity; patient-clustered robust standard errors for p values. Coefficients represent change per 100 additional laser spots. 95% CIs are percentile intervals from 2,500 patient-cluster bootstrap resamples; they are not multiplicity-adjusted. BH-FDR q values are based on 16 cluster-robust p values. Cluster-robust p values were based on a t reference distribution with G − 1 degrees of freedom (G = 26 patient clusters).