

Supplementary material

Supplementary Table 1 Participant characteristics by presence of colour, OCT and ultra-widefield grading.

| Participant characteristics | Colour fundus photography | | | Optical Coherence Tomography | | | Ultra-wide field imaging | | |
|---|--------------------------------|------------------------------------|--------|--------------------------------|-----------------------------------|-------|--------------------------------|------------------------------------|--------|
| | At least 1 gradable eye n=3265 | No images or both ungradable n=121 | P* | At least 1 gradable eye n=3344 | No images or both ungradable n=42 | P* | At least 1 gradable eye n=3214 | No images or both ungradable n=172 | P* |
| Age (SD) | 63.5 (8.9) | 69.3 (9.6) | <0.001 | 63.6 (9) | 68.6 (11.4) | 0.007 | 63.4 (8.9) | 68.6 (9.8) | <0.001 |
| Female (%) | 1706 (52.3) | 59 (48.8) | 0.508 | 1744 (52.2) | 21 (50.0) | 0.903 | 1669 (51.9) | 96 (55.8) | 0.360 |
| Genetic Risk Score (SD) | 10.9 (1.2) | 11.1 (1.2) | 0.120 | 10.9 (1.2) | 10.9 (1.3) | 0.822 | 10.9 (1.2) | 11.1 (1.1) | 0.25 |
| Waist Hip Ratio (SD) | 0.9 (0.1) | 1 (0.8) | 0.234 | 0.9 (0.1) | 1.1 (1.3) | 0.328 | 0.9 (0.1) | 1 (0.6) | 0.29 |
| Body Mass Index (SD) | 28.9 (5) | 29.2 (5.8) | 0.485 | 28.9 (5.1) | 28.6 (4.8) | 0.743 | 28.9 (5) | 28.8 (5.6) | 0.78 |
| Systolic Blood Pressure mmHg (SD) | 133.8 (32.3) | 138.9 (43.6) | 0.202 | 133.8 (31.3) | 152 (94.4) | 0.217 | 133.6 (30.7) | 141.1 (59.5) | 0.11 |
| Diastolic Blood Pressure mmHg (SD) | 83.3 (31.1) | 84.5 (43.8) | 0.781 | 83.2 (29.8) | 100.8 (99.3) | 0.257 | 83.1 (29.2) | 88 (61.7) | 0.30 |
| Pulse 10's beats per minute (SD) | 7.8 (7.3) | 7.7 (4.4) | 0.888 | 7.7 (7.2) | 9.6 (10) | 0.227 | 7.7 (7.1) | 8.4 (9.4) | 0.33 |

| | | | | | | | | | |
|---|-------------|-----------|-------|-------------|-----------|-------|-------------|-----------|-------|
| Spherical Equivalent (Diopters) (SD) | 0.7 (2.4) | 0.5 (2.7) | 0.469 | 0.7 (2.4) | 1 (1.6) | 0.434 | 0.8 (2.3) | 0.2 (3.1) | 0.03 |
| Self-report | | | | | | | | | |
| Cardiovascular Disease (%) | 455 (13.9) | 23 (19.0) | 0.150 | 467 (14.0) | 11 (26.2) | 0.042 | 444 (13.8) | 34 (19.8) | 0.038 |
| Chronic lung disease (%) | 109 (3.3) | 5 (4.1) | 0.827 | 112 (3.3) | 2 (4.8) | 0.941 | 104 (3.2) | 10 (5.8) | 0.108 |
| Asthma (%) | 309 (9.5) | 14 (11.6) | 0.537 | 320 (9.6) | 3 (7.1) | 0.789 | 301 (9.4) | 22 (12.8) | 0.175 |
| Cognitive problems (%) | 19 (0.6) | 3 (2.5) | 0.048 | 20 (0.6) | 2 (4.8) | 0.018 | 18 (0.6) | 4 (2.3) | 0.020 |
| Arthritis (%) | 912 (27.9) | 46 (38.0) | 0.021 | 946 (28.3) | 12 (28.6) | 1.000 | 904 (28.1) | 54 (31.4) | 0.401 |
| Cancer (%) | 260 (8.0) | 11 (9.1) | 0.781 | 263 (7.9) | 8 (19.0) | 0.018 | 254 (7.9) | 17 (9.9) | 0.430 |
| Parkinson's (%) | 10 (0.3) | 0 (0.0) | 1.000 | 10 (0.3) | 0 (0.0) | 1.000 | 9 (0.3) | 1 (0.6) | 1.000 |
| Diabetes (%) | 290 (8.9) | 16 (13.2) | 0.140 | 301 (9.0) | 5 (11.9) | 0.703 | 282 (8.8) | 24 (14.0) | 0.030 |
| Education | | | | | | | | | |
| Primary or less (%) | 463 (14.2) | 27 (22.3) | 0.081 | 480 (14.4) | 10 (23.8) | 0.357 | 456 (14.2) | 34 (19.8) | 0.134 |
| Secondary (%) | 2027 (62.1) | 71 (58.7) | | 2076 (62.1) | 22 (52.4) | | 2004 (62.4) | 94 (54.7) | |
| Degree or higher (%) | 772 (23.6) | 23 (19.0) | | 785 (23.5) | 10 (23.8) | | 751 (23.4) | 44 (25.6) | |
| Missing (%) | 3 (0.1) | 0 (0.0) | | 3 (0.1) | 0 (0.0) | | 3 (0.1) | 0 (0.0) | |
| Smoker | | | | | | | | | |
| Never (%) | 1725 (52.8) | 63 (52.1) | 0.980 | 1769 (52.9) | 19 (45.2) | 0.545 | 1696 (52.8) | 92 (53.5) | 0.706 |
| Former (%) | 1210 (37.1) | 45 (37.2) | | 1235 (36.9) | 20 (47.6) | | 1196 (37.2) | 59 (34.3) | |

| | | | | | | | | | |
|--|-------------|-----------|--------|-------------|-----------|--------|-------------|------------|--------|
| Current (%) | 327 (10.0) | 13 (10.7) | | 337 (10.1) | 3 (7.1) | | 319 (9.9) | 21 (12.2) | |
| Missing (%) | 3 (0.1) | 0 (0.0) | | 3 (0.1) | 0 (0.0) | | 3 (0.1) | 0 (0.0) | |
| Physical Activity | | | | | | | | | |
| ≥150 minutes per week (%) | 2164 (66.3) | 68 (56.2) | 0.028 | 2209 (66.1) | 23 (54.8) | 0.219 | 2130 (66.3) | 102 (59.3) | 0.169 |
| < 150 minutes per week (%) | 1071 (32.8) | 53 (43.8) | | 1105 (33.0) | 19 (45.2) | | 1056 (32.9) | 68 (39.5) | |
| Cataract | | | | | | | | | |
| Never (%) | 2645 (81.0) | 75 (62.0) | <0.001 | 2696 (80.6) | 24 (57.1) | <0.001 | 2622 (81.6) | 98 (57.0) | <0.001 |
| Present (%) | 403 (12.3) | 26 (21.5) | | 421 (12.6) | 8 (19.0) | | 382 (11.9) | 47 (27.3) | |
| Surgery (%) | 200 (6.1) | 18 (14.9) | | 212 (6.3) | 6 (14.3) | | 194 (6.0) | 24 (14.0) | |
| Missing (%) | 17 (0.5) | 2 (1.7) | | 15 (0.4) | 4 (9.5) | | 16 (0.5) | 3 (1.7) | |
| Hypertension category | | | | | | | | | |
| SBP<120 & DBP<80 (%) | 742 (22.7) | 22 (18.2) | 0.013 | 755 (22.6) | 9 (21.4) | 0.803 | 725 (22.6) | 39 (22.7) | 0.880 |
| 120≤SBP<130 & DBP<80 (%) | 366 (11.2) | 10 (8.3) | | 370 (11.1) | 6 (14.3) | | 357 (11.1) | 19 (11.0) | |
| 130≤SBP<140 Or 80≤DBP< 90 (%) | 1399 (42.8) | 45 (37.2) | | 1424 (42.6) | 20 (47.6) | | 1376 (42.8) | 68 (39.5) | |
| SBP≥140 Or DBP≥90 (%) | 744 (22.8) | 44 (36.4) | | 781 (23.4) | 7 (16.7) | | 743 (23.1) | 45 (26.2) | |
| Missing (%) | 14 (0.4) | 0 (0.0) | | 14 (0.4) | 0 (0.0) | | 13 (0.4) | 1 (0.6) | |

| | | | | | | | | | |
|------------------------------------|-------------|-------------|--------|-------------|-------------|-------|-------------|-------------|--------|
| Diabetes | | | | | | | | | |
| No (%) | 2844 (87.1) | 102 (84.3) | 0.445 | 2912 (87.1) | 34 (81.0) | 0.346 | 2808 (87.4) | 138 (80.2) | 0.0095 |
| Yes (%) | 421 (12.9) | 19 (15.7) | | 432 (12.9) | 8 (19.0) | | 406 (12.6) | 34 (19.8) | |
| Alcohol intake | | | | | | | | | |
| 0 units/day (%) | 987 (30.2) | 43 (35.5) | 0.359 | 1012 (30.3) | 18 (42.9) | 0.209 | 965 (30.0) | 65 (37.8) | 0.097 |
| 0 < units/day < 4 (%) | 2018 (61.8) | 67 (55.4) | | 2064 (61.7) | 21 (50.0) | | 1990 (61.9) | 95 (55.2) | |
| ≥ 4 units/day (%) | 260 (8.0) | 11 (9.1) | | 268 (8.0) | 3 (7.1) | | 259 (8.1) | 12 (7.0) | |
| Cognitive | | | | | | | | | |
| MMSE Score < 24 (%) | 64 (2.0) | 2 (1.7) | 1.000 | 65 (1.9) | 1 (2.4) | 1.000 | 61 (1.9) | 5 (2.9) | 0.516 |
| MOCA Score < 26 (%) | 1340 (41.0) | 58 (47.9) | 0.0011 | 1377 (41.2) | 21 (50.0) | 0.223 | 1310 (40.8) | 88 (51.2) | 0.0061 |
| MOCA Score missing (%) | 22 (0.7) | 4 (3.3) | | 25 (0.7) | 1 (2.4) | | 23 (0.7) | 3 (1.7) | |
| Serum | | | | | | | | | |
| hsCRP mg/L (SD) | 3.2 (5.3) | 4.6 (7.7) | 0.057 | 3.3 (5.4) | 4.2 (4.6) | 0.227 | 3.3 (5.4) | 3.3 (4.7) | 1.00 |
| LDL mmol/L (SD) | 3.4 (1.1) | 3 (1) | <0.001 | 3.4 (1.1) | 3.3 (1) | 0.574 | 3.4 (1.1) | 3.2 (1.1) | 0.01 |
| HDL mmol/L (SD) | 1.6 (0.4) | 1.6 (0.5) | 0.720 | 1.6 (0.4) | 1.6 (0.4) | 0.365 | 1.6 (0.4) | 1.6 (0.4) | 0.87 |
| Vitamin D ng/mL (SD) | 22.2 (10.6) | 23.3 (10.6) | 0.308 | 22.2 (10.7) | 21.4 (9.1) | 0.578 | 22.2 (10.6) | 23.2 (10.9) | 0.24 |
| Lpa mg/dL (SD) | 20.6 (22.4) | 16.9 (18) | 0.043 | 20.5 (22.3) | 23.6 (23.7) | 0.457 | 20.6 (22.4) | 19 (19.9) | 0.37 |

| | | | | | | | | | |
|---------------------------------|-----------|-----------|-------|-----------|-----------|-------|-----------|-----------|------|
| Triglyceride mmol/L (SD) | 3.7 (2.1) | 3.6 (1.7) | 0.371 | 3.7 (2.1) | 3.8 (2.4) | 0.837 | 3.7 (2.1) | 3.5 (1.6) | 0.08 |
| Creatinine mg/dL (SD) | 0.9 (0.3) | 1 (0.6) | 0.066 | 0.9 (0.3) | 0.9 (0.3) | 0.262 | 0.9 (0.3) | 1 (0.5) | 0.07 |
| ApoA1 g/L (SD) | 1.7 (0.3) | 1.7 (0.3) | 0.993 | 1.7 (0.3) | 1.7 (0.3) | 0.439 | 1.7 (0.3) | 1.7 (0.3) | 0.72 |
| ApoB g/L (SD) | 1 (0.3) | 1 (0.2) | 0.002 | 1 (0.3) | 1 (0.3) | 0.776 | 1 (0.3) | 1 (0.2) | 0.07 |

* Statistical comparisons performed using independent sample t-tests (continuous variables) or Chi-squared tests (categorical variables).

Supplementary Table 2 Prevalence of AMD % (95% CI) using the Beckman Clinical Classification by age category (Person level analysis). Unweighted and weighted estimates are included.

| | | Unweighted | | | | |
|----------------|----------------|-------------------|-------------------|-------------------|------------------|------------------|
| Age | Number at risk | 0 | 1 | 2 | 3 | 4 |
| Males | | | | | | |
| <55 | 228 | 60.1 (53.4, 66.5) | 24.1 (18.7, 30.2) | 11.0 (7.2, 15.8) | 4.8 (2.4, 8.5) | 0.0 |
| 55-64 | 564 | 63.3 (59.2, 67.3) | 19.7 (16.5, 23.2) | 11.2 (8.7, 14.1) | 5.9 (4.1, 8.1) | 0.0 |
| 65-74 | 556 | 62.6 (58.4, 66.6) | 15.5 (12.6, 18.7) | 11.7 (9.1, 14.7) | 9.0 (6.7, 11.7) | 1.3 (0.5, 2.6) |
| 75-84 | 182 | 51.1 (43.6, 58.6) | 16.5 (11.4, 22.7) | 15.4 (10.5, 21.5) | 14.3 (9.5, 20.2) | 2.7 (0.9, 6.3) |
| ≥85 | 29 | 51.7 (32.5, 70.6) | 10.3 (2.2, 27.4) | 10.3 (2.2, 27.4) | 17.2 (5.8, 35.8) | 10.3 (2.2, 27.4) |
| Females | | | | | | |
| <55 | 347 | 65.1 (59.9, 70.1) | 23.3 (19.0, 28.2) | 8.4 (5.7, 11.8) | 3.2 (1.6, 5.6) | 0.0 |
| 55-64 | 693 | 65.7 (62.0, 69.2) | 17.5 (14.7, 20.5) | 13.0 (10.6, 15.7) | 3.8 (2.5, 5.4) | 0.1 (0.0, 0.8) |
| 65-74 | 505 | 55.6 (51.2, 60.0) | 16.6 (13.5, 20.2) | 18.4 (15.1, 22.1) | 8.5 (6.2, 11.3) | 0.8 (0.2, 2.0) |
| 75-84 | 143 | 59.4 (50.9, 67.6) | 7.0 (3.4, 12.5) | 18.9 (12.8, 26.3) | 11.9 (7.1, 18.4) | 2.8 (0.8, 7.0) |

| Unweighted | | | | | | |
|------------|----------------|-------------------|------------------|-----------------|------------------|------------------|
| Age | Number at risk | 0 | 1 | 2 | 3 | 4 |
| ≥85 | 18 | 55.6 (30.8, 78.5) | 11.1 (1.4, 34.7) | 5.6 (0.1, 27.3) | 16.7 (3.6, 41.4) | 11.1 (1.4, 34.7) |

Supplementary Table 3 Prevalence of AMD features by age category and sex (Eye level analysis, weighted).

| Age | <i>En face</i> grading | | | | | | | OCT grading | | | | | | |
|--------------|------------------------|---------------------------|-------------------|-------------------|------------------|------------------|----------------|----------------|-------------------|-------------------|-------------------|-----------------|-----------------|-------------------|
| | Number at risk | Pigmentary Irregularities | Drusen (any size) | Drusen ≥63µm | Drusen ≥125µm | Reticular Drusen | GA | Number at risk | Classical Drusen | SDD | Focal Atrophy | CNV | Vitelliform | Any AMD |
| Males | | | | | | | | | | | | | | |
| <55 | 447 | 1.1 (0.4, 2.6) | 28.4 (23.5, 33.7) | 9.2 (6.3, 12.8) | 1.8 (0.7, 3.8) | 0.9 (0.2, 2.7) | 0.0 | 462 | 19.7 (15.5, 24.4) | 15.6 (12.0, 19.8) | 5.0 (2.8, 8.0) | 0.0 | 0.0 | 9.8 (6.9, 13.5) |
| 55-64 | 1087 | 1.7 (0.9, 2.7) | 24.9 (22.0, 28.0) | 9.9 (8.0, 12.2) | 2.0 (1.2, 3.2) | 1.4 (0.7, 2.4) | 0.0 | 1144 | 20.9 (18.2, 23.8) | 19.8 (17.2, 22.6) | 2.3 (1.4, 3.4) | 0.0 | 0.1 (0.0, 0.5) | 11.0 (9.0, 13.4) |
| 65-74 | 1046 | 3.1 (1.9, 4.6) | 27.9 (24.7, 31.3) | 13.8 (11.4, 16.4) | 4.2 (2.9, 5.9) | 2.5 (1.5, 3.9) | 0.9 (0.3, 1.9) | 1126 | 27.2 (24.0, 30.5) | 25.6 (22.6, 28.7) | 5.2 (3.7, 6.9) | 0.1 (0.0, 0.5) | 0.6 (0.2, 1.5) | 15.5 (13.0, 18.3) |
| 75-84 | 329 | 1.8 (0.7, 3.9) | 40.7 (34.2, 47.5) | 24.6 (19.0, 31.0) | 9.7 (6.1, 14.5) | 7.3 (4.1, 11.8) | 0.9 (0.2, 2.6) | 371 | 46.1 (39.5, 52.8) | 44.7 (38.4, 51.2) | 7.0 (4.2, 10.8) | 1.2 (0.3, 3.1) | 0.5 (0.0, 3.0) | 27.1 (21.2, 33.6) |
| ≥85 | 52 | 7.7 (1.4, 22.0) | 38.5 (22.7, 56.2) | 23.1 (10.0, 41.5) | 11.5 (3.7, 25.5) | 15.4 (4.2, 35.2) | 0.0 | 60 | 55.0 (37.2, 71.9) | 50.0 (32.9, 67.1) | 21.7 (10.0, 38.0) | 5.8 (1.2, 16.0) | 3.3 (0.1, 17.7) | 28.8 (14.9, 46.4) |

| Age | <i>En face</i> grading | | | | | | | OCT grading | | | | | | |
|----------------|------------------------|---------------------------|-------------------|-------------------|-----------------|------------------|----------------|----------------|-------------------|-------------------|-----------------|-----------------|----------------|-------------------|
| | Number at risk | Pigmentary Irregularities | Drusen (any size) | Drusen ≥63µm | Drusen ≥125µm | Reticular Drusen | GA | Number at risk | Classical Drusen | SDD | Focal Atrophy | CNV | Vitelliform | Any AMD |
| Females | | | | | | | | | | | | | | |
| <55 | 684 | 0.9 (0.3, 1.9) | 24.4 (20.7, 28.5) | 7.0 (4.9, 9.6) | 1.0 (0.3, 2.5) | 1.6 (0.6, 3.4) | 0.0 | 689 | 14.1 (11.2, 17.4) | 11.3 (8.8, 14.3) | 0.9 (0.3, 2.1) | 0.0 | 0.0 | 7.3 (5.2, 9.9) |
| 55-64 | 1360 | 0.5 (0.2, 1.2) | 24.5 (21.8, 27.4) | 10.4 (8.6, 12.4) | 1.8 (1.1, 2.8) | 1.0 (0.5, 1.7) | 0.0 | 1390 | 19.9 (17.5, 22.6) | 17.1 (14.8, 19.5) | 3.4 (2.3, 4.7) | 0.1 (0.0, 0.4) | 0.0 | 10.7 (8.9, 12.8) |
| 65-74 | 957 | 1.7 (0.9, 2.8) | 33.5 (30.0, 37.2) | 19.3 (16.3, 22.6) | 5.2 (3.6, 7.3) | 5.3 (3.6, 7.5) | 0.1 (0.0, 0.6) | 1018 | 32.0 (28.5, 35.7) | 29.3 (26.0, 32.8) | 4.1 (2.8, 5.8) | 0.4 (0.1, 1.3) | 0.5 (0.1, 1.5) | 20.6 (17.5, 23.9) |
| 75-84 | 266 | 4.9 (2.3, 9.1) | 36.5 (28.9, 44.6) | 24.8 (18.5, 32.0) | 6.4 (3.3, 10.9) | 10.2 (6.0, 15.7) | 1.5 (0.3, 4.6) | 304 | 42.1 (35.1, 49.3) | 43.4 (36.3, 50.7) | 6.6 (3.6, 10.9) | 0.4 (0.0, 2.1) | 0.7 (0.0, 3.6) | 27.4 (20.9, 34.8) |
| ≥85 | 31 | 12.9 (2.4, 34.9) | 41.9 (19.7, 66.9) | 22.6 (6.1, 49.4) | 6.5 (0.1, 32.1) | 6.5 (0.1, 32.1) | 0.0 | 37 | 54.1 (31.2, 75.7) | 59.5 (36.1, 80.0) | 8.1 (0.8, 28.4) | 6.5 (0.7, 22.0) | 0.0 | 29.0 (10.8, 54.2) |

Supplementary Table 4 Risk factor associations with AMD (Beckman 2,3,4) versus Controls (Beckman 0,1).

| Participant characteristics | | | Univariate | | Age-sex adjusted models | | Multivariable models | | AMD Risk Score excluded | |
|---|------------------|--------------|----------------------|--------|-------------------------|--------|----------------------|--------|-------------------------|-------|
| | No AMD n=2590 | AMD n=675 | OR | P | OR | P | OR | P | OR | P |
| Age (SD) | 62.7 (8.7) | 66.2 (9.2) | 1.04 (1.03, 1.05) | <0.001 | 1.07 (0.95, 1.19) | 0.261 | 1.06 (0.95, 1.19) | 0.297 | 1.06 (0.94, 1.18) | 0.346 |
| Age² | | | | | 1.00 (1.00, 1.00) | 0.712 | 1.00 (1.00, 1.00) | 0.742 | 1.00 (1.00, 1.00) | 0.827 |
| Female (%) | 1355 (52.3) | 351 (52.0) | 0.99 (0.83, 1.17) | 0.883 | 1.08 (0.91, 1.28) | 0.383 | 1.01 (0.83, 1.22) | 0.959 | 1.00 (0.82, 1.22) | 0.977 |
| Genetic Risk Score (SD) | 0.4 (1.1) | 0.7 (1.2) | 1.20 (1.11, 1.30) | <0.001 | 1.20 (1.11, 1.30) | <0.001 | 1.21 (1.11, 1.31) | <0.001 | | |
| Waist Hip Ratio (SD) | 0.9 (0.1) | 0.9 (0.1) | 0.87 (0.34, 2.19) | 0.763 | 0.45 (0.13, 1.55) | 0.206 | | | | |
| Body Mass Index (SD) | 28.9 (5) | 28.8 (5.3) | 1.00 (0.98, 1.01) | 0.616 | 1.00 (0.98, 1.02) | 0.992 | | | | |
| Resting heart rate (beats per minute) (SD) | 7.7 (7.2) | 7.8 (7.6) | 1.00 (0.99, 1.01) | 0.716 | 1.00 (0.99, 1.01) | 0.858 | | | | |
| Self-report | | | | | | | | | | |
| Cardiovascular Disease (%) | 346 (13.4) | 109 (16.1) | 1.25 (0.99, 1.58) | 0.063 | 1.01 (0.79, 1.29) | 0.946 | | | | |

| | | | | | | | | | | |
|---------------------------------|-------------|------------|--------------------|-------|--------------------|-------|--------------------|-------|--------------------|-------|
| Chronic lung disease (%) | 75 (2.9) | 34 (5.0) | 1.78 (1.17, 2.70) | 0.006 | 1.60 (1.04, 2.44) | 0.030 | 1.63 (1.06, 2.51) | 0.026 | 1.52 (0.99, 2.34) | 0.054 |
| Asthma (%) | 240 (9.3) | 69 (10.2) | 1.11 (0.84, 1.48) | 0.450 | 1.14 (0.85, 1.52) | 0.379 | | | | |
| Cognitive problems (%) | 14 (0.5) | 5 (0.7) | 1.37 (0.49, 3.85) | 0.544 | 1.18 (0.42, 3.36) | 0.752 | | | | |
| Arthritis (%) | 701 (27.1) | 211 (31.3) | 1.23 (1.02, 1.47) | 0.031 | 1.05 (0.86, 1.27) | 0.639 | | | | |
| Cancer (%) | 209 (8.1) | 51 (7.6) | 0.93 (0.68, 1.28) | 0.661 | 0.79 (0.57, 1.10) | 0.162 | | | | |
| Parkinson's (%) | 4 (0.2) | 6 (0.9) | 5.80 (1.62, 20.74) | 0.007 | 5.12 (1.40, 18.67) | 0.013 | 5.23 (1.44, 19.09) | 0.012 | 5.03 (1.38, 18.31) | 0.014 |
| Diabetes (%) | 230 (8.9) | 60 (8.9) | 1.00 (0.74, 1.35) | 0.994 | 0.92 (0.68, 1.24) | 0.575 | | | | |
| Education | | | | | | | | | | |
| Primary or less (%) | 351 (13.6) | 112 (16.6) | 1.00 | | 1.00 | | | | | |
| Secondary (%) | 1617 (62.4) | 410 (60.7) | 0.79 (0.62, 1.01) | 0.056 | 1.00 (0.78, 1.29) | 0.976 | | | | |
| Degree or higher (%) | 620 (23.9) | 152 (22.5) | 0.77 (0.58, 1.01) | 0.059 | 0.99 (0.74, 1.32) | 0.939 | | | | |
| Missing (%) | 2 (0.1) | 1 (0.1) | | | | | | | | |
| Smoker | | | | | | | | | | |
| Never (%) | 1367 (52.8) | 358 (53.0) | 1.00 | | 1.00 | | | | | |

| | | | | | | | | | | |
|--|-------------|------------|-------------------|--------|-------------------|-------|-------------------|-------|-------------------|-------|
| Former (%) | 954 (36.8) | 256 (37.9) | 1.02 (0.85, 1.23) | 0.803 | 0.99 (0.82, 1.19) | 0.897 | | | | |
| Current (%) | 267 (10.3) | 60 (8.9) | 0.86 (0.63, 1.17) | 0.327 | 0.97 (0.71, 1.33) | 0.871 | | | | |
| Missing (%) | 2 (0.1) | 1 (0.1) | | | | | | | | |
| Physical Activity | | | | | | | | | | |
| ≥150 minutes per week (%) | 1740 (67.2) | 424 (62.8) | 1.00 | | 1.00 | | | | | |
| < 150 minutes per week (%) | 828 (32.0) | 243 (36.0) | 1.20 (1.01, 1.44) | 0.042 | 1.14 (0.95, 1.37) | 0.164 | | | | |
| Cataract | | | | | | | | | | |
| Never (%) | 2122 (81.9) | 523 (77.5) | 1.00 | | 1.00 | | | | | |
| Present (%) | 305 (11.8) | 98 (14.5) | 1.29 (1.01, 1.66) | 0.042 | 0.88 (0.67, 1.14) | 0.324 | | | | |
| Surgery (%) | 149 (5.8) | 51 (7.6) | 1.38 (0.99, 1.94) | 0.056 | 0.83 (0.57, 1.19) | 0.309 | | | | |
| Missing (%) | 14 (0.5) | 3 (0.4) | | | | | | | | |
| Hypertension category | | | | | | | | | | |
| SBP<120 & DBP<80 (%) | 609 (23.5) | 133 (19.7) | 1.00 | | 1.00 | | 1.00 | | 1.00 | |
| 120≤SBP<130 & DBP<80 (%) | 267 (10.3) | 99 (14.7) | 1.70 (1.26, 2.29) | <0.001 | 1.45 (1.07, 1.98) | 0.017 | 1.43 (1.05, 1.95) | 0.023 | 1.42 (1.04, 1.94) | 0.025 |
| 130≤SBP<140 Or 80≤DBP< 90 (%) | 1109 (42.8) | 290 (43.0) | 1.20 (0.95, 1.51) | 0.121 | 1.11 (0.88, 1.41) | 0.380 | 1.11 (0.87, 1.40) | 0.406 | 1.10 (0.87, 1.39) | 0.445 |

| | | | | | | | | | | |
|------------------------------------|-------------|------------|-------------------|-------|-------------------|-------|-------------------|-------|-------------------|-------|
| SBP≥140 Or DBP≥90 (%) | 595 (23.0) | 149 (22.1) | 1.16 (0.89, 1.50) | 0.266 | 1.03 (0.79, 1.35) | 0.823 | 1.02 (0.77, 1.33) | 0.908 | 1.00 (0.76, 1.31) | 0.992 |
| Missing (%) | 10 (0.4) | 4 (0.6) | | | | | | | | |
| Diabetes | | | | | | | | | | |
| No (%) | 2259 (87.2) | 585 (86.7) | 1.00 | | 1.00 | | | | | |
| Yes (%) | 331 (12.8) | 90 (13.3) | 1.05 (0.82, 1.35) | 0.702 | 0.90 (0.70, 1.16) | 0.417 | | | | |
| Alcohol intake | | | | | | | | | | |
| 0 units/day (%) | 755 (29.2) | 232 (34.4) | 1.00 | | 1.00 | | | | | |
| 0 < units/day < 4 (%) | 1617 (62.4) | 401 (59.4) | 0.81 (0.67, 0.97) | 0.022 | 0.90 (0.75, 1.09) | 0.291 | | | | |
| ≥ 4 units/day (%) | 218 (8.4) | 42 (6.2) | 0.63 (0.44, 0.90) | 0.011 | 0.76 (0.52, 1.11) | 0.153 | | | | |
| Cognitive | | | | | | | | | | |
| MMSE Score < 24 (%) | 53 (2.0) | 11 (1.6) | 0.79 (0.41, 1.53) | 0.488 | 0.61 (0.31, 1.20) | 0.153 | | | | |
| MOCA Score < 26 (%) | 1037 (40.0) | 303 (44.9) | 1.21 (1.02, 1.44) | 0.027 | 1.03 (0.86, 1.23) | 0.756 | | | | |
| MOCA Score missing (%) | 20 (0.8) | 2 (0.3) | | | | | | | | |
| Serum | | | | | | | | | | |
| hsCRP mg/L (SD) | 3.2 (5.3) | 3.4 (5) | 1.09 (1.00, 1.18) | 0.045 | 1.07 (0.99, 1.16) | 0.099 | 1.08 (0.99, 1.18) | 0.065 | 1.09 (1.00, 1.19) | 0.045 |

| | | | | | | | | | | |
|---------------------------------|-------------|-------------|-------------------|-------|-------------------|-------|-------------------|-------|-------------------|-------|
| LDL mmol/L (SD) | 3.4 (1.1) | 3.3 (1.1) | 0.78 (0.61, 1.00) | 0.045 | 1.03 (0.79, 1.33) | 0.839 | | | | |
| HDL mmol/L (SD) | 1.6 (0.4) | 1.6 (0.5) | 1.29 (0.92, 1.81) | 0.134 | 1.48 (1.02, 2.15) | 0.039 | 1.57 (1.07, 2.31) | 0.022 | 1.58 (1.08, 2.32) | 0.019 |
| Vitamin D ng/mL (SD) | 22 (10.6) | 22.6 (10.8) | 1.13 (0.94, 1.36) | 0.179 | 1.09 (0.91, 1.31) | 0.350 | | | | |
| Lpa mg/dL (SD) | 20.3 (22.3) | 21.8 (22.8) | 1.04 (0.95, 1.13) | 0.369 | 1.03 (0.95, 1.13) | 0.450 | | | | |
| Triglyceride mmol/L (SD) | 1.7 (0.9) | 1.6 (0.8) | 0.84 (0.71, 1.01) | 0.065 | 0.87 (0.72, 1.05) | 0.143 | | | | |
| Creatinine mg/dL (SD) | 0.9 (0.2) | 0.9 (0.3) | 1.31 (0.88, 1.95) | 0.176 | 0.96 (0.59, 1.54) | 0.859 | | | | |
| ApoA1 g/L (SD) | 1.7 (0.3) | 1.7 (0.3) | 1.26 (0.70, 2.24) | 0.439 | 1.48 (0.78, 2.80) | 0.234 | | | | |
| ApoB g/L (SD) | 1 (0.3) | 1 (0.3) | 0.65 (0.47, 0.90) | 0.009 | 0.91 (0.64, 1.27) | 0.565 | | | | |

For continuous variables, the mean and standard deviation is reported. For categorical variables, the number of individuals in each level (category) is given along with the column percentage. Variables that were not included in the regression modelling stage have missing values for all of the Odds Ratio (OR) and associated P value columns. Variables that were considered as candidates for the multiple regression model also have entries in the age and sex adjusted column. Results reported for all regressions are pooled estimates from models fitted to each of the multiple imputed datasets. Therefore, odds ratios are not reported for the "Missing" category of categorical variables because these gaps have been filled in during the multiple imputation procedure. Similarly, missing values in continuous variables have also been filled. SBP=systolic blood pressure, DBP=diastolic blood pressure, MMSE=Mini-mental state examination, MOCA=The Montreal Cognitive Assessment hsCRP=high sensitivity C reactive protein, LDL=low density lipoprotein, HDL= high density lipoprotein, LPA= Lysophosphatidic acid, ApoA1= Apolipoprotein A1 ApoB= Apolipoprotein B. Beckman (0,1)= no signs of retinal aging or drupelets $\leq 63 \mu\text{m}$

Supplementary Table 5 Risk factor associations for presence vs absence of AMD features on color/en face imaging

| Participant characteristics | Hyperpigmentation N=111 | | Drusen (any size) N=1775 | | Drusen ≥63µm N=833 | | Drusen ≥125µm N=213 | | Reticular Drusen N=181 | |
|---|----------------------------|-------|-----------------------------|--------|-----------------------|--------|------------------------|--------|---------------------------|--------|
| | OR | P | OR | P | OR | P | OR | P | OR | P |
| Age | 1.00 (0.79, 1.28) | 0.993 | 0.95 (0.87, 1.03) | 0.197 | 1.10 (0.98, 1.24) | 0.116 | 1.28 (1.03, 1.59) | 0.027 | 1.06 (0.83, 1.35) | 0.660 |
| Age² | 1.00 (1.00, 1.00) | 0.696 | 1.00 (1.00, 1.00) | 0.091 | 1.00 (1.00, 1.00) | 0.394 | 1.00 (1.00, 1.00) | 0.104 | 1.00 (1.00, 1.00) | 0.835 |
| Female | 0.66 (0.42, 1.05) | 0.080 | 0.95 (0.81, 1.12) | 0.540 | 1.04 (0.84, 1.28) | 0.731 | 0.77 (0.52, 1.13) | 0.181 | 1.27 (0.83, 1.92) | 0.268 |
| Genetic Risk Score | | | 1.17 (1.09, 1.27) | <0.001 | 1.24 (1.13, 1.37) | <0.001 | 1.52 (1.27, 1.81) | <0.001 | 1.47 (1.23, 1.75) | <0.001 |
| Resting heart rate (beats per minute) (SD) | 1.02 (1.00, 1.04) | 0.094 | | | | | | | | |
| Spherical Equivalent (Diopters) | | | 1.07 (1.04, 1.11) | <0.001 | 1.08 (1.03, 1.13) | <0.001 | | | | |
| Self-report | | | | | | | | | | |
| Arthritis | | | 1.15 (0.99, 1.34) | 0.062 | | | | | | |
| Parkinson's | Excluded | | 2.47 (0.89, 6.82) | 0.080 | 4.18 (1.46, 12.00) | 0.007 | | | Excluded | |

| | | | | | | |
|--|-------------------|-------|-------------------|-------|-------------------|-------|
| Diabetes | | | | | 0.51 (0.20, 1.26) | 0.143 |
| Physical Activity | | | | | | |
| ≥150 minutes per week | | | | | 1.00 | |
| < 150 minutes per week | | | | | 1.20 (0.99, 1.45) | 0.058 |
| Cataract | | | | | | |
| Never | | | | | 1.00 | |
| Present | | | | | 1.60 (0.98, 2.62) | 0.059 |
| Surgery | | | | | 0.83 (0.38, 1.84) | 0.651 |
| Hypertension category | | | | | | |
| SBP<120 & DBP<80 | 1.00 | | 1.00 | | 1.00 | |
| 120≤SBP<130 & DBP<80 | 1.31 (1.03, 1.67) | 0.026 | 1.49 (1.10, 2.03) | 0.011 | 2.42 (1.24, 4.75) | 0.010 |
| 130≤SBP<140 Or 80≤DBP< 90 | 1.16 (0.97, 1.38) | 0.106 | 1.14 (0.90, 1.46) | 0.276 | 1.65 (0.93, 2.92) | 0.086 |
| SBP≥140 Or DBP≥90 | 1.08 (0.88, 1.33) | 0.478 | 1.14 (0.86, 1.52) | 0.372 | 1.60 (0.86, 2.97) | 0.138 |
| Alcohol intake | | | | | | |
| 0 units/day | 1.00 | | 1.00 | | | |

| | | | | | | | | | | |
|---------------------------------|-------------------|-------|-------------------|--------|-------------------|-------|--------------------|-------|---------------------|-------|
| 0 < units/day < 4 | 0.60 (0.39, 0.94) | 0.026 | 0.81 (0.70, 0.95) | 0.007 | | | | | | |
| ≥ 4 units/day | 0.66 (0.30, 1.45) | 0.299 | 0.82 (0.62, 1.09) | 0.166 | | | | | | |
| Serum | | | | | | | | | | |
| HDL mmol/L | | | 1.27 (0.92, 1.76) | 0.138 | 3.12 (0.99, 9.84) | 0.051 | 1.35 (0.12, 15.32) | 0.807 | 0.44 (0.04, 4.61) | 0.493 |
| Vitamin D ng/mL | | | | | | | 1.35 (0.95, 1.94) | 0.094 | 1.61 (1.02, 2.52) | 0.039 |
| Triglyceride mmol/L | | | 0.83 (0.71, 0.97) | 0.023 | 0.94 (0.74, 1.19) | 0.596 | 0.77 (0.49, 1.22) | 0.262 | | |
| ApoA1 g/L | | | | | 0.34 (0.06, 2.02) | 0.234 | 1.82 (0.04, 89.73) | 0.762 | 9.97 (0.19, 514.12) | 0.251 |
| Ocular | | | | | | | | | | |
| Normal Choroid 201-400µm | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | |
| Thick Choroid ≥401µm | 1.49 (0.60, 3.69) | 0.389 | 1.79 (1.39, 2.29) | <0.001 | 1.51 (1.09, 2.10) | 0.012 | 2.15 (1.26, 3.67) | 0.005 | 2.58 (1.35, 4.92) | 0.004 |
| Thin Choroid ≤200µm | 1.78 (1.10, 2.88) | 0.019 | 1.05 (0.88, 1.26) | 0.595 | 0.92 (0.72, 1.17) | 0.510 | 1.04 (0.69, 1.55) | 0.866 | 1.28 (0.83, 1.96) | 0.260 |

Results report the fully adjusted multivariable model for each feature. Results reported for all regressions are pooled estimates from models fitted to each of the multiple imputed datasets. Therefore, odds ratios are not reported for the “Missing” category of categorical variables because these gaps have been filled in during the multiple imputation procedure. Similarly, missing values in continuous variables have also been filled. SBP=systolic blood pressure, DBP=diastolic blood pressure, MMSE=Mini-mental state examination, MOCA=The Montreal Cognitive Assessment hsCRP=high sensitivity C reactive protein,

LDL=low density lipoprotein, HDL= high density lipoprotein, LPA= Lysophosphatidic acid, ApoA1= Apolipoprotein A1 ApoB= Apolipoprotein B, GA=geographic atrophy. Only variables retained in final model are listed in the table, the following were excluded: Waist Hip Ratio, Body Mass Index, self-report cardiovascular disease, self-report chronic lung disease, self-report asthma, self-report cognitive problems, education, smoking, diabetes, cognitive scores, hsCRP, LDL, Lpa, ApoB, creatinine, evidence of epiretinal membrane, evidence of vitreomacular adhesion.

Supplementary Table 6 Eye level risk factor associations with presence vs absence of OCT based AMD features.

| Participant characteristics | Classical Drusen N=1688 | | SDD N=1549 | | SDD only N=382 | | Focal Atrophy N=264 | | CNV N=16 | |
|---------------------------------|----------------------------|--------|-------------------|--------|-------------------|-------|------------------------|-------|-------------------|-------|
| | OR | P | OR | P | OR | P | OR | P | OR | P |
| Age | 0.97 (0.89, 1.06) | 0.486 | 0.95 (0.86, 1.04) | 0.266 | 0.93 (0.79, 1.11) | 0.445 | 0.89 (0.75, 1.04) | 0.139 | 1.04 (0.53, 2.04) | 0.916 |
| Age ² | 1.00 (1.00, 1.00) | 0.069 | 1.00 (1.00, 1.00) | 0.016 | 1.00 (1.00, 1.00) | 0.187 | 1.00 (1.00, 1.00) | 0.048 | 1.00 (1.00, 1.01) | 0.659 |
| Female | 0.99 (0.86, 1.15) | 0.910 | 0.92 (0.79, 1.07) | 0.287 | 1.02 (0.80, 1.29) | 0.885 | 0.82 (0.61, 1.10) | 0.190 | 1.95 (0.59, 6.43) | 0.271 |
| Genetic Risk Score | 1.33 (1.24, 1.43) | <0.001 | 1.35 (1.26, 1.44) | <0.001 | 1.15 (1.02, 1.28) | 0.017 | 1.26 (1.08, 1.46) | 0.003 | 2.07 (1.29, 3.33) | 0.003 |
| Spherical Equivalent (Diopters) | 1.07 (1.04, 1.11) | <0.001 | 1.07 (1.03, 1.10) | <0.001 | | | | | | |
| Self-report | | | | | | | | | | |
| Chronic lung disease | | | | | | | 1.96 (1.05, 3.68) | 0.034 | Excluded | |
| Cancer | | | | | | | 0.50 (0.26, 0.96) | 0.037 | Excluded | |
| Parkinson's | 3.34 (1.10, 10.15) | 0.033 | | | | | | | Excluded | |
| Education | | | | | | | | | | |
| Primary or less | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | |

| | | | | | | |
|------------------------------|-------------------|-------|-------------------|-------|-------------------|--------------------------------|
| Secondary | 0.90 (0.73, 1.10) | 0.294 | | | | |
| Degree or higher | 0.89 (0.70, 1.12) | 0.311 | | | | |
| Smoker | | | | | | |
| Never | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Former | | | | | 1.38 (1.01, 1.88) | 0.041 2.47 (0.76, 8.09) 0.133 |
| Current | | | | | 1.21 (0.72, 2.04) | 0.458 3.19 (0.32, 32.26) 0.323 |
| Hypertension Category | | | | | | |
| SBP<120 & DBP<80 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 120≤SBP<130 & DBP<80 | 1.29 (1.00, 1.65) | 0.047 | 1.28 (0.99, 1.65) | 0.058 | 1.41 (0.89, 2.24) | 0.141 |
| 130≤SBP<140 Or 80≤DBP<90 | 1.08 (0.89, 1.30) | 0.427 | 1.06 (0.88, 1.29) | 0.517 | 1.37 (0.98, 1.92) | 0.060 |
| SBP≥140 Or DBP≥90 | 1.11 (0.90, 1.37) | 0.344 | 1.14 (0.91, 1.41) | 0.247 | 1.34 (0.93, 1.93) | 0.118 |
| Cognitive | | | | | | |
| MOCA Score < 26 | | | 0.84 (0.73, 0.98) | 0.024 | | |
| Serum | | | | | | |

| | | | | | | | | | | |
|------------------------------------|-------------------|--------|-------------------|-------|-------------------|--------|-------------------|-------|--------------------|-------|
| hsCRP mg/L | 1.06 (0.99, 1.13) | 0.105 | | | | | 1.11 (0.97, 1.28) | 0.138 | 1.72 (1.01, 2.94) | 0.047 |
| Lpa mg/dL | | | | | 0.90 (0.80, 1.01) | 0.077 | | | 1.77 (0.96, 3.24) | 0.068 |
| Triglyceride mmol/L | 0.83 (0.71, 0.96) | 0.014 | | | | | | | | |
| ApoA1 g/L | | | 1.53 (0.93, 2.50) | 0.090 | | | | | | |
| Ocular factors | | | | | | | | | | |
| Evidence of epiretinal membrane | 0.83 (0.66, 1.05) | 0.122 | 0.76 (0.60, 0.95) | 0.014 | 0.62 (0.39, 0.96) | 0.032 | 1.36 (0.87, 2.12) | 0.179 | 2.83 (0.80, 10.10) | 0.106 |
| Evidence of vitreomacular adhesion | | | | | 1.21 (0.92, 1.59) | 0.176 | 0.72 (0.53, 0.99) | 0.040 | | |
| Normal Choroid 201-400µm | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | |
| Thick Choroid ≥401µm | 1.84 (1.42, 2.37) | <0.001 | 1.34 (1.01, 1.77) | 0.041 | 1.55 (0.90, 2.66) | 0.109 | | | 5.00 (0.71, 35.09) | 0.104 |
| Thin Choroid ≤200µm | 0.89 (0.74, 1.07) | 0.210 | 1.09 (0.91, 1.31) | 0.361 | 1.67 (1.26, 2.22) | <0.001 | | | 1.93 (0.60, 6.16) | 0.265 |

For continuous variables, the mean and standard deviation is reported. For categorical variables, the number of individuals in each level (category) is given along with the column percentage. Results reported are from the fully adjusted regression models. Results reported for all regressions are pooled estimates from models fitted to each of the multiple imputed datasets. Therefore, odds ratios are not reported for the “Missing” category of categorical variables because these gaps have been filled in during the multiple imputation procedure. Similarly, missing values in continuous variables have also been filled. SBP=systolic blood pressure, DBP=diastolic blood pressure, MMSE=Mini-mental state examination, MOCA=The Montreal Cognitive Assessment hsCRP=high sensitivity C reactive protein, LDL=low density lipoprotein, HDL= high density lipoprotein, LPA= Lysophosphatidic acid, ApoA1= Apolipoprotein

A1 ApoB= Apolipoprotein B, SDD=subretinal drusenoid deposits, CNV=choroidal neovascular membrane. Only variables retained in final model are listed in the table, the following were excluded: Waist hip ratio, Body Mass Index, Resting heart rate, self-report cardiovascular disease, self-report asthma, self-report arthritis, self-report cognitive problems, self-report arthritis, self-report diabetes, cataract, diabetes, alcohol intake, MMSE Score <24, LDL, HDL, Vitamin D, creatinine, Apo B.