**Supplementary material**

**eTable1**

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| **pRNFL** | ***Mean difference (μm)*** | ***95% IC*** | ***p-values*** |
| P-MS (n=84) vs HC (n=36) | - 7.1 | - 11.8 to - 2.4 | **0.003** |
| P-MS <51 y (n=43) - P-MS > 51 y (n=41) | 3.6 | - 1.6 to 8.8 | 0.9 |
| HC < 51 years (n=14) - HC > 51 y (n=22) | 1.7 | - 6.2 to 9.7 | 0.6 |
| P-MS < 51 y (n=43) - HC (n=36) | - 5.3 | - 10.5 to - 0.2 | 0.2 |
| P-MS > 51 y (n=41) - HC (n=36) | - 8.9 | - 15.5 to – 3.4 | **0.004** |
| CL-act P-MS (n=33) - noCL-act P-MS (n=44) | - 0.9 | - 6.4 to 4.8 | 0.5 |
| CL-act P-MS (n=33) - HC (n=36) | - 6.6 | - 12.3 to - 0.8 | **0.03** |
| noCL-act P-MS (n=44) - HC (n=36) | -7.5 | - 12.9 to – 2.1 | **0.007** |
| MRI-act P-MS (n=20) - noMRI-act P-MS (n=57) | 1.2 | - 5.4 to 7.9 | 0.8 |
| MRI-act P-MS (n=20) - HC (n=36) | - 6.1 | -13.2 to 0.8 | 0.1 |
| noMRI-act P-MS (n=57) - HC (n=36) | - 7.4 | - 12.5 to - 2.3 | **0.004** |
| **GCIPL** | ***Mean difference (μm)*** | ***95% IC*** | ***p-values*** |
| P-MS (n=84) vs HC (n=36) | -9.6 | -13.4 to -5.7 | **<0.0001** |
| P-MS <51 y (n=43) - P-MS > 51 y (n=41) | 3.6 | - 1.6 to 8.8 | 0.6 |
| HC < 51 years (n=14) - HC>51 y (n=22) | 5.1 | - 0.6 to 10.7 | 0.09 |
| P-MS < 51 y (n=43) - HC (n=36) | - 7.8 | - 12.4 to - 3.1 | **0.004** |
| P-MS > 51 y (n=41) - HC(n=36) | - 11.4 | - 16.1 to - 6.6 | **<0.0001** |
| CL-act P-MS (n=33) - noCL-act P-MS (n=44) | - 1.3 | - 6.9 to 4.3 | 0.7 |
| CL-act P-MS (n=33) - HC (n=36) | - 9.4 | - 14.6 to - 4.2 | **0.001** |
| noCL-act P-MS (n=44) - HC (n=36) | -10.8 | - 15.4 to - 6.2 | **<0.0001** |
| MRI-act P-MS (n=20) - noMRI-act P-MS (n=57) | 3.3 | - 9.1 to 9.8 | 0.4 |
| MRI-act P-MS (n=20) - HC (n=36) | -7.7 | -14.1 to - 1.3 | **0.006** |
| noMRI-act P-MS (n=57) - HC (n=36) | -11.1 | - 15.4 to 6.8 | **<0.0001** |
| **INL** | ***Mean difference (μm)*** | ***95% IC*** | ***p-values*** |
| P-MS (n=84) vs HC (n=36) | 0.7 | -0.8 to 2.2 | 0.29 |
| P-MS <51 y (n=43) - P-MS > 51 y (n=41) | 1.6 | - 0.1 to 3.1 | **0.038** |
| HC < 51 years (n=14) - HC>51 y (n=22) | - 1.2 | - 4.1 to 2.6 | 0.3 |
| P-MS < 51 y (n=43) - HC (n=36) | 1.5 | - 0.2 to 3.2 | **0.04** |
| P-MS > 51 y (n=41) - HC(n=36) | - 0.1 | - 1.7 to 1.4 | 0.4 |
| CL-act P-MS (n=33) - noCL-act P-MS (n=44) | -0.9 | - 2.5 to 0.7 | 0.7 |
| CL-act P-MS (n=33) - HC (n=36) | 1.1 | - 0.75 to 2.9 | 0.2 |
| noCL-act P-MS (n=44) - HC (n=36) | 0.15 | -1.4 to 1.7 | 0.7 |
| MRI-act P-MS (n=20) - noMRI-act P-MS (n=57) | 3.05 | 1.05 to 5.05 | **0.003** |
| MRI-act P-MS (n=20) - HC (n=36) | 2.8 | 0.6 to 5.0 | **0.008** |
| noMRI-act P-MS (n=57) - HC (n=36) | - 0.24 | -1.7 to 1.2 | 0.8 |

**eTable1: OCT-derived metrics mean differences and 95% CI for all comparisons**

*pRNFL*: peripapillary retinal nerve fiber layer

*GCIPL*: ganglion cell layer+inner plexiform layer

*INL*: inner nuclear layer

*HC*: healthy controls

*P-MS*: progressive multiple sclerosis

*CL-act P-MS*: P-MS patients with clinical activity (presence of at least one of: a) occurence of relapses b) evidence of disease progression defined as 1 EDSS point increase or 0.5 if baseline EDSS>=5.5) in the previous 12-moths

*noCL-act P-MS*: P-MS patients without clinical activity (presence of at least one of: a) occurence of relapses b) evidence of disease progression defined as 1 EDSS point increase or 0.5 if baseline EDSS>=5.5) in the previous 12-moths

*MRI-act P-MS*: patients with MRI activity (evidence of new T2 and/or gadolinium enhancing lesions) in the previous 12-moths

*noMRI-act P-MS:* patients without MRI activity (evidence of new T2 and/or gadolinium enhancing lesions) in the previous 12-moths

Significant differences are reported in bold