**Supplementary Table S1** Morphologic measurements and corresponding ICC values with 95% CI of intra- and inter-observer agreement, and scan repeatability for each 3D sequence.

| | Inter-observer (n=84) | | | Intra-observer (n=84) | | | Inter-scan (n=84) | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1st scan, 1st observer (mean ± SD) | 1st scan, 2nd observer (mean ± SD) | ICC (95% CI) | 1st scan, 1st observer, 1st measurement (mean ± SD)[a] | 1st scan, 1st observer, 2nd measurement (mean ± SD)[a] | ICC (95% CI) | 1st scan, 2nd observer (mean ± SD) | 2nd scan, 2nd observer (mean ± SD) | ICC (95% CI) |
| **Lumen area (mm²)** | | | | | | | | | |
| Whole-brain | 7.174±4.314 | 6.557±3.950 | 0.97 (0.94-0.99) | 7.174±4.314 | 6.936±4.100 | 0.99 (0.98-0.99) | 6.557 ± 3.950 | 6.552 ± 4.192 | 0.99 (0.98-0.99) |
| Targeted | 8.370±4.569 | 8.064±7.809 | 0.81 (0.64-0.90) | 8.370±4.569 | 8.27±5.11 | 0.96 (0.93-0.98) | 8.063 ±7.809 | 7.184 ±4.747 | 0.84 (0.70-0.92) |
| **Vessel wall area (mm²)** | | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Whole-brain | 12.47±6.67 | 13.45±7.14 | 0.98 (0.94-0.99) | 12.47±6.67 | 12.76±6.77 | 0.99 (0.97-0.99) | 13.45±7.14 | 13.24±6.34 | 0.99 (0.96-0.99) |
| Targeted | 12.44±6.46 | 12.97 ±6.72 | 0.95 (0.91-0.98) | 12.44 ±6.46 | 12.51 ±6.45 | 0.99 (0.98-0.99) | 12.97 ±6.72 | 13.91±6.94 | 0.97 (0.94-0.99) |

**Lumen volume (mm$^3$)**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Whole-brain | 35.80±37.56 | 32.65±33.53 | 0.99 (0.94-0.99) | 35.80±37.56 | 34.39±35.05 | 0.99 (0.99-0.99) | 32.64±33.53 | 32.35±33.29 | 0.99 (0.97-0.99) |
| Targeted | 31.77±32.51 | 27.79±31.43 | 0.96 (0.93-0.98) | 31.77±32.51 | 32.11±37.39 | 0.99 (0.94-0.99) | 27.79 ±31.43 | 27.65 ±30.89 | 0.99 (0.99-0.99) |

**Vessel wall volume (mm$^3$)**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Whole-brain | 63.40±65.57 | 67.01±72.05 | 0.99 (0.98-0.99) | 63.40±65.57 | 68.07±69.14 | 0.99 (0.99-0.99) | 67.01±72.05 | 65.69±70.62 | 0.99 (0.99-0.99) |
| Targeted | 58.99±50.57 | 56.12 ±47.79 | 0.99 (0.97-0.99) | 58.99±50.57 | 63.39±59.34 | 0.99 (0.98-0.99) | 56.12 ±47.79 | 57.31 ±49.97 | 0.99 (0.99-0.99) |

**Plaque burden**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Whole-brain | 0.700±0.094 | 0.647±0.091 | 0.86 (0.71-0.93) | 0.700±0.094 | 0.675± 0.097 | 0.95 (0.90-0.97) | 0.647±0.091 | 0.669±0.081 | 0.90 (0.78-0.95) |
| Targeted | 0.652±0.132 | 0.611±0.081 | 0.71 (0.42-0.85) | 0.652 ±0.132 | 0.650 ±0.111 | 0.84 (0.69-0.92) | 0.611±0.081 | 0.643±0.099 | 0.82 (0.62-0.91) |

**Percent stenosis (%)**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Whole-brain | 31.13±17.79 | 32.97±20.86 | 0.88 | 31.13±17.79 | 33.01±19.49 | 0.96 | 32.97±20.86 | 33.47±21.07 | 0.95 |

|  |  |  | (0.77-0.94) |  |  | (0.92-0.98) |  |  | (0.90-0.97) |
|---|---|---|---|---|---|---|---|---|---|
| Targeted | 25.87±17.67 | 31.17±20.48 | 0.86 (0.71-0.93) | 25.87±17.67 | 27.67±19.16 | 0.89 (0.79-0.94) | 31.17 ±20.48 | 32.46 ±20.26 | 0.94 (0.89-0.97) |
| **Remodeling ratio** |  |  |  |  |  |  |  |  |  |
| Whole-brain | 0.948±0.231 | 0.903±0.281 | 0.79 (0.59-0.89) | 0.948±0.231 | 0.957±0.255 | 0.95 (0.90-0.97) | 0.903±0.281 | 0.892±0.214 | 0.85 (0.72-0.93) |
| Targeted | 0.932±0.270 | 0.901±0.310 | 0.76 (0.53-0.88) | 0.932±0.270 | 0.921±0.302 | 0.84 (0.69-0.92) | 0.901±0.310 | 0.892 ±0.318 | 0.80 (0.61-0.88) |

Note: ICC= intra-class correlation coefficient; CI= confidence interval; SD=standard deviation.