|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sequence** | **TR** | **TE** | **TI** | **Slice thickness** | **FoV** | **Resolution** | **Flip angle** | **Voxel size** | **Acquisition time** |
| 2D T2 TSE *tra* | 4650ms | 85ms | - | 5mm | 230mm | 384 | 150 | 0.6x0.6x5.0mm | 1.28min |
| 2D T2 TSE *cor* | 5160ms | 77ms | - | 5mm | 230mm | 384 | 150 | 0.6x0.6x5.0mm | 1.38min |
| 2D T2 TSE *sag* | 4080ms | 111ms | - | 5mm | 240mm | 320 | 150 | 0.8x0.8x5.0mm | 1.30min |
| 2D FLAIR *tra* | 9000ms | 89ms | 2500ms | 5mm | 230mm | 256 | 150 | 0.9x0.9x5.0mm | 2.24min |
| 2D T1 SE *tra* | 592ms | 13ms | - | 5mm | 230mm | 320 | 90 | 0.7x0.7x5.0mm | 2.23min |
| DWI *tra* | 4600ms | 99ms | *b*=0,  1000,  2000s/mm2 | 5mm | 230mm | 192 | 0 | 1.2x1.2x5.0mm | 1.50min |
| 3D MPR T1 *sag* | 1720ms | 2.92ms | - | 1mm | 256mm | 256 | 15 | 1.0x1.0x1.0mm | 3.38min |

Supplementary table 1. Parameters of the MRI sequences

Supplementary table 2. Differences between DM1 and HC1 in 48 white matter tracts according to the Johns Hopkins ICBM-DTI-81 atlas

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **White matter tract** | **TBSS TFCE FA**  **HC1 > DM1**  **(p value)** | **TBSS TFCE MD DM1 > HC1**  **(p value)** | **TBSS TFCE AD DM1 > DM2**  **(p value)** | **TBSS TFCE RD DM1 > DM2 (p value)** |
| 1 | Middle cerebellar peduncle | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 2 | Pontine crossing tract | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 3 | Genu of corpus callosum | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 4 | Body of corpus callosum | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 5 | Splenium of corpus callosum | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 6 | Fornix | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 7 | Corticospinal tract R | p=0.0004 | p<0.0002 | p<0.0002 | p<0.0002 |
| 8 | Corticospinal tract L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 9 | Medial lemniscus R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 10 | Medial lemniscus L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 11 | Inferior cerebellar peduncle R | p=0.0004 | p<0.0002 | - | p=0.0004 |
| 12 | Inferior cerebellar peduncle L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 13 | Superior cerebellar peduncle R | p<0.0002 | p<0.0002 | - | p<0.0002 |
| 14 | Superior cerebellar peduncle L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 15 | Cerebral peduncle R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 16 | Cerebral peduncle L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 17 | Anterior limb of internal capsule R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 18 | Anterior limb of internal capsule L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 19 | Posterior limb of internal capsule R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 20 | Posterior limb of internal capsule L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 21 | Retrolenticular part of internal capsule R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 22 | Retrolenticular part of internal capsule L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 23 | Anterior corona radiata R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 24 | Anterior corona radiata L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 25 | Superior corona radiata R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 26 | Superior corona radiata L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 27 | Posterior corona radiata R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 28 | Posterior corona radiata L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 29 | Posterior thalamic radiation R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 30 | Posterior thalamic radiation L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 31 | Sagittal stratum R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 32 | Sagittal stratum L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 33 | External capsule R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 34 | External capsule L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 35 | Cingulum (cingulate gyrus) R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 36 | Cingulum (cingulate gyrus) L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 37 | Cingulum (hippocampus) R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 38 | Cingulum (hippocampus) L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 39 | Fornix (cres) R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 40 | Fornix (cres) L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 41 | Superior longitudinal fasciculus R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 42 | Superior longitudinal fasciculus L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 43 | Superior fronto-occipital fasciculus R | p<0.0002 | p<0.0002 | - | p<0.0002 |
| 44 | Superior fronto-occipital fasciculus L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 45 | Uncinate fasciculus R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 46 | Uncinate fasciculus L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 47 | Tapetum R | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |
| 48 | Tapetum L | p<0.0002 | p<0.0002 | p<0.0002 | p<0.0002 |

Supplementary table 3. Differences between DM2 and HC2 in 48 white matter tracts according to the Johns Hopkins ICBM-DTI-81 atlas

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **White matter tract** | **TBSS TFCE FA**  **HC2 > DM2**  **(p value)** | **TBSS TFCE AD HC2 > DM2**  **(p value)** | **TBSS TFCE RD DM2 > HC2 (p value)** |
| 1 | Middle cerebellar peduncle | - | - |  |
| 2 | Pontine crossing tract | - | - |  |
| 3 | Genu of corpus callosum | p<0.0002 | - | p=0.0200 |
| 4 | Body of corpus callosum | p<0.0002 | - | p=0.0224 |
| 5 | Splenium of corpus callosum | p<0.0002 | - | p=0.0214 |
| 6 | Fornix | p=0.0312 | - | - |
| 7 | Corticospinal tract R | - | - | - |
| 8 | Corticospinal tract L | p<0.0002 | - | - |
| 9 | Medial lemniscus R | - | - | - |
| 10 | Medial lemniscus L | - | - | - |
| 11 | Inferior cerebellar peduncle R | - | - | - |
| 12 | Inferior cerebellar peduncle L | - | - | - |
| 13 | Superior cerebellar peduncle R | p=0.0068 | - | - |
| 14 | Superior cerebellar peduncle L | p=0.0106 | - | - |
| 15 | Cerebral peduncle R | p=0.0012 | p=0.0128 | - |
| 16 | Cerebral peduncle L | p=0.0008 | p=0.0456 | - |
| 17 | Anterior limb of internal capsule R | p=0.0012 | p=0.0128 | - |
| 18 | Anterior limb of internal capsule L | p=0.0006 | p=0.0484 | p=0.0288 |
| 19 | Posterior limb of internal capsule R | p=0.0012 | p=0.0128 | - |
| 20 | Posterior limb of internal capsule L | p=0.0006 | p=0.0464 | p=0.0308 |
| 21 | Retrolenticular part of internal capsule R | p=0.0006 | p=0.0480 | p=0.0248 |
| 22 | Retrolenticular part of internal capsule L | p=0.0004 | - | p=0.0254 |
| 23 | Anterior corona radiata R | p<0.0002 | p=0.0378 | p=0.0214 |
| 24 | Anterior corona radiata L | p<0.0002 | - | p=0.0206 |
| 25 | Superior corona radiata R | p<0.0002 | - | p=0.0218 |
| 26 | Superior corona radiata L | p=0.0006 | - | p=0.0240 |
| 27 | Posterior corona radiata R | p<0.0002 | - | p=0.0232 |
| 28 | Posterior corona radiata L | p<0.0002 | - | p=0.0224 |
| 29 | Posterior thalamic radiation R | p<0.0002 | - | p=0.0236 |
| 30 | Posterior thalamic radiation L | p<0.0002 | - | p=0.0224 |
| 31 | Sagittal stratum R | p=0.0006 | - | p=0.0246 |
| 32 | Sagittal stratum L | p=0.0004 | - | p=0.0268 |
| 33 | External capsule R | p=0.0014 | - | p=0.0494 |
| 34 | External capsule L | p=0.0008 | - | p=0.0288 |
| 35 | Cingulum (cingulate gyrus) R | p=0.0012 | - | p=0.0272 |
| 36 | Cingulum (cingulate gyrus) L | p=0.0004 | - | p=0.0312 |
| 37 | Cingulum (hippocampus) R | p=0.0108 | - | p=0.0264 |
| 38 | Cingulum (hippocampus) L | p=0.0042 | - | p=0.0422 |
| 39 | Fornix (cres) R | p=0.0236 | - | - |
| 40 | Fornix (cres) L | p=0.0010 | - | - |
| 41 | Superior longitudinal fasciculus R | p=0.0004 | - | p=0.0220 |
| 42 | Superior longitudinal fasciculus L | p=0.0004 | - | p=0.0276 |
| 43 | Superior fronto-occipital fasciculus R | p=0.0018 | p=0.0434 | - |
| 44 | Superior fronto-occipital fasciculus L | p=0.0008 | - | p=0.0306 |
| 45 | Uncinate fasciculus R | p=0.0054 | - | - |
| 46 | Uncinate fasciculus L | p=0.0012 | - | - |
| 47 | Tapetum R | p=0.0004 | - | p=0.0246 |
| 48 | Tapetum L | p<0.0002 | - | p=0.0282 |