SUPPLEMENTARY INFORMATION: TABLES

Imaging Multiple Sclerosis Pathology at 160µm Isotropic Resolution by Human Whole-Brain *Ex Vivo* Magnetic Resonance Imaging at 3T

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Supplementary Table S1: Overview of Acquisition Times for the Investigated Protocols and Brains

Isotropic 3D resolution:	**270 µm**	**240µm**	**200µm**	**180µm**	**160µm**
$SNR_{relative}$ / a.u.	1.00	0.78	0.42	0.28	0.19
TA_{base} / h	07:00:31	09:08:07	08:12:33	07:04:49	06:57:20
$avg_{min\text{-}SNR}$ #	*N.N.*	3	4	5	6
$TA_{min\text{-}SNR}$ / h	07:00:31	27:24:21	32:50:12	35:24:05	41:44:00
MS brain #1 $avg_{max\text{-}performed}$ #	-	9	11	8	11
$TA_{max\text{-}performed}$ / h	-	82:13:03	90:18:03	56:38:32	76:30:40
MS brain #2 $avg_{max\text{-}performed}$ #	*N.N.*	-	8	-	-
$TA_{max\text{-}performed}$ / h	07:00:31	-	65:37:44	-	-

$SNR_{relative}$: Relative SNR of the different acquisition protocols.

TA_{base}: Acquisition time of the base protocol (single acquisition without averaging).

$avg_{min\text{-}SNR}$: Minimum number of averages recommended for "sufficient SNR", see Supp. Tab. S2 as well as Materials and Methods section.

$TA_{min\text{-}SNR}$: Resulting acquisition time for the recommended "minimum SNR protocol".

$avg_{max\text{-}performed}$: Maximum number of averages that could be performed within the frame of the investigations.

$TA_{max\text{-}performed}$: Resulting acquisition time for maximum number of averages performed.

"*N.N.*": not necessary.

Manual averaging of the acquired magnitude images from repeated base protocol measurements.

Supplementary Table S2: Overview of Expert Decisions for the Visual SNR Evaluation on MS Brain #1

Recommendations:	**240µm**	**200µm**	**180µm**	**160µm**	**Expertise**
averages$_{min\text{-}SNR}$ (E1) #	1	3	3	5	Neurologist
averages$_{min\text{-}SNR}$ (E2) #	6	4	5	6	Neuroradiologist
averages$_{min\text{-}SNR}$ (E3) #	1	2	2	2	Neurologist
averages$_{min\text{-}SNR}$ (E4) #	4	5	7	6	Image Processing Expert
averages$_{min\text{-}SNR}$ (E5) #	3	6	6	9	MRI specialist (Biologist)
averages$_{min\text{-}SNR}$ (E6) #	1	1	3	4	Neurologist
averages$_{min\text{-}SNR}$ (E7) #	3	5	6	8	Physicist
arithmetic MEAN	**2.7**	**3.7**	**4.6**	**5.7**	---
MEDIAN	**3**	**4**	**5**	**6**	---

averages$_{min\text{-}SNR}$: Minimum number of averages recommended for “sufficient SNR”, here, listed by expert-rater who intentionally have different expertise, i.e., different clinical and scientific backgrounds.

Manual averaging of the acquired magnitude images from repeated base protocol measurements.